

Thank you for your comment, glen hollander.

The comment tracking number that has been assigned to your comment is SEDDSupp20001.

Comment Date: October 30, 2011 18:36:02PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDSupp20001

First Name: glen
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Attachment:

Comment Submitted:

I am interested in seeing how these projects develop and do favor encouraging the use of solar and wind power. One thing I would like to see is encouragement of replacing incandescent bulbs with LED bulbs, the further development of high efficiency lighting, better insulation in existing buildings.

I believe there is enormous quantities of available rooftops available for development of solar panel arrays to compensate for current usage. These properties are already in use and adding solar arrays can be a simple addition. The electrical infrastructure is already in place to support this with grid tie inverters. An example is airport parking lots. Large parcels of pavement are dedicated to storage of automobiles while people are traveling. Roofs can be added with solar arrays on top to feed the electrical grid. At the least this neutralises electrical consumption of the airport. Another example is warehouses and large malls and manufacturing plants with large roof areas. This is another example of unused resource for placement of solar arrays.

I realise this does not have as much flash and impact on public perception compared to a project setting aside copious parcels of land fencing it off to block public access and having large acres of solar panels arrayed row by row in some remote area of the country.

Thank you for your comment, Laura Mauney.

The comment tracking number that has been assigned to your comment is SEDDSupp20002.

Comment Date: November 3, 2011 14:53:19PM

Supplement to the Draft Solar PEIS

Comment ID: SEDDSupp20002

First Name: Laura

Middle Initial: M

Last Name: Mauney

Organization:

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State: [Withheld by requestor]

Zip: [Withheld by requestor]

Country: [Withheld by requestor]

Privacy Preference: Withhold address from public record

Attachment:

Comment Submitted:

I feel strongly that before any undeveloped public land is used for solar power sites, all public buildings in every setting should be targeted first, public office buildings, military facilities, schools, etc. Though I am sure there are engineering issues involved that could be avoided on a solar farm, using developed real estate for solar power sites will help prevent overuse of wilderness areas, shorten delivery distance for generated power, and provide immediate solar solutions to the actual structures involved, among other obvious benefits.

Thank you for your comment, Gary Baney.

The comment tracking number that has been assigned to your comment is SEDDSupp20003.

Comment Date: November 3, 2011 17:59:23PM

Supplement to the Draft Solar PEIS

Comment ID: SEDDSupp20003

First Name: Gary

Middle Initial: R

Last Name: Baney

Organization: Private Citizen

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Address 2:

Address 3:

City: [Withheld by requestor]

State: [Withheld by requestor]

Zip: [Withheld by requestor]

Country: [Withheld by requestor]

Privacy Preference: Withhold address from public record

Attachment:

Comment Submitted:

I applaud any carefully-considered installation of solar panels on government lands.

Thank you for your comment, William Branham.

The comment tracking number that has been assigned to your comment is SEDDSupp20004.

Comment Date: November 4, 2011 09:50:50AM
Supplement to the Draft Solar PEIS
Comment ID: SEDDSupp20004

First Name: William
Middle Initial: A
Last Name: Branham
Organization: 21st Century Telecommunications, Inc.
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Address 2: PO BOX 4141
Address 3:
City: VALDOSTA
State: GA
Zip: 316069611
Country: USA
Privacy Preference: Don't withhold name or address from public record
Attachment:

Comment Submitted:

21st Century Telecom, Inc. has created a “regional solar market transformation net-zero energy smart grid initiative” including DOE& DOD; to address market barriers within a USDA Enterprise Zone and Champion Community including SBA Hub Zones.” This initiative when connected with Smart-Grid nanoantennas technology. provides a paradigm-shift for cost-effective economic development with tremendous economic potential.
The Company has a unique “wireless, Internet and mobile television network concept including renewal energy, transportation, housing and manufacturing.” We are promoting a change in the way we design new communities using a renewal energy systems approach—with sustainable planning, net zero-energy homes, advanced vehicles, and innovative utility interconnections—which will significantly decrease energy use.

Thank you for your comment, Laura Mauney.

The comment tracking number that has been assigned to your comment is SEDDSupp20005.

Comment Date: November 4, 2011 10:55:13AM

Supplement to the Draft Solar PEIS

Comment ID: SEDDSupp20005

First Name: Laura

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Last Name: Mauney

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State: [Withheld by requestor]

Zip: [Withheld by requestor]

Country: [Withheld by requestor]

Privacy Preference: Withhold address from public record

Attachment:

Comment Submitted:

Comment #2 from me: I also feel strongly that BEFORE federal wilderness land is used for solar farms, the vast, vast amount of federal land used for government parking lots at all facilities could be utilized as space for solar power arrays. Three obvious advantages to this are: 1) Immediate delivery of solar power to adjoining buildings and shortened delivery of surplus power to the local utility; 2) Shade and weather protection for cars; 3) A resource for electric vehicle recharging. I've read articles about this on the DOE blog and elsewhere. Here is a link to one such article:

<http://green.blogs.nytimes.com/2010/07/06/the-parking-lot-as-solar-grove>.

Thank you for your comment, Patrick Cannon.

The comment tracking number that has been assigned to your comment is SEDDSupp20006.

Comment Date: November 4, 2011 11:49:42AM

Supplement to the Draft Solar PEIS

Comment ID: SEDDSupp20006

First Name: Patrick

Middle Initial: H

Last Name: Cannon

Organization: Cannon Solar & Wind Llc.

Address: 3800 E. Western Dr.

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City: Cottonwood

State: AZ

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Country: USA

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Attachment:

Comment Submitted:

I definitely think that we need to utilize public and federal lands to increase our renewable energy portfolio and to rid our country of protolium based fossil fuels. There are creative ways to achieve this that will satisfy many elements such as water storage, Solar energy production, Wind energy production as well as create asthetically pleasing areas for public useage. This can truely be a "Win - Win" situation!

Thank you for your comment, Paul Headley.

The comment tracking number that has been assigned to your comment is SEDDSupp20007.

Comment Date: November 14, 2011 13:36:52PM

Supplement to the Draft Solar PEIS

Comment ID: SEDDSupp20007

First Name: Paul

Middle Initial: F

Last Name: Headley

Organization: Northern Virginia Community College

Address: 8333 Little River Turnpike

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State: VA

Zip: 220033796

Country: USA

Privacy Preference: Don't withhold name or address from public record

Attachment:

Comment Submitted:

Don't spend public money to put solar projects on public lands which will benefit one company's bottom line or one group of citizens' electric bill but cost all taxpayers with increases to the national debt.

There is already one company that madoff with our public money by paying themselves obscene salaries before going bankrupt. We don't need others.

Thank you for your comment, HAROLD FOSTER.

The comment tracking number that has been assigned to your comment is SEDDSupp20008.

Comment Date: November 28, 2011 16:00:02PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDSupp20008

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Last Name: FOSTER
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Address 3:
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State: CA
Zip: 92239
Country: USA
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Attachment:

Comment Submitted:

COMMENTS REGARDING SOLAR INSTALLATIONS LOCATED IN AND AROUND THE CHUKAWALLA VALLEY. SPECIFICALLY LAKE TAMARISK IN DESERT CENTER.

MY WIFE AND I LIVE IN THE LAKE TAMARISK RESORT AREA OF DESERT CENTER. IT IS OUR PERMANENT ADDRESS. WE BOUGHT OUR PROPERTY IN 2005 TO INSURE A RETIREMENT HOME. WE OWNED A HOME ON THE GOLF COURSE IN PALM DESERT. WE ARE BOTH REALTORS ASSOCIATED WITH WINDERMERE REAL ESTATE OF CHOACHELLA VALLEY. WE ARE NOT RETIRED BECAUSE WE CAN NOT AFFORD TO LIVE ON SOCIAL SECURITY. MUCH OF OUR NEST EGG WAS LOST IN THE BURSTING OF THE REAL ESTATE BUBBLE. WE HAVE SPENT THE BALLANCE ON LIVING DURING THIS INCREDIBLE RECESSION AS REALTORS DO NOT GET ANY UNEMPLOYMENT BENEFITS AND WE HAD TOO MUCH TO QUALIFY FOR ANY OTHER BENEFITS. WE ARE BROKE NOW AND THEREFORE HAVE NO VOICE. HOWEVER I STILL HAVE AN OPINION.

I SUPPORT SOLAR AS A POLICY FOR OUR STATE AND OUR COUNTRY. CLEAN IS GOOD. FREE IS GOOD. NO FRACKING OR LEAKY PIPLINES IS ALSO GOOD. GLOBAL WARMING IS REAL AND ITS VERY BAD.

BEING BROKE WITH NO JOB IS BAD. ABANDONDED HOMES AND FORECLOSED PROPERTIES ARE REALLY UGLY FOR A COMMUNITY.

SINCE THE START OF CONSTRUCTION ALL OF LAKE TAMARISK PROPERTIES, ABANDONED AND FORECLOSED HAVE SOLD. THEY ARE NOW RENTED TO SOLAR PEOPLE AND AT LEAST THREE HOMES HAVE ATTRACTED SNOW BIRD BUYERS. THREE IS A LOT IN A COMMUNITY OF 28 HOMES. SNOWBIRDS ARE GREAT NEIGHBORS...THEY DON'T GROW POT OR COOK METH. THAT DOES HAPPEN MUCH TO OFTEN IN ABANDONED AND FORECLOSED PROPERTIES IN DESERT TOWNS TRHOUGH OUT CALIFORNIA.

I LOVE SOLAR FOR THAT REASON ALONE.

THE DESERT SUNLIGHT PROJECT WILL BE COMPLETED IN A COUPLE OF YEARS AND I HOPE THAT ANOTHER PROJECT WITHIN THE VALLEY GETS STARTED AT THAT TIME. A THIRD PROJECT WOULD BE WONDERFUL AFTER THAT COMPLETES AND THIS PROCESS COULD CONTINUE UNTILL WE HAVE EIGHT OR TEN PROJECTS . I AM CERTAIN THAT WE HAVE ROOM FOR TEN PROJECTS SPREAD AROUND THE VALLEY WITHOUT IT FEELING LIKE WE HAVE CARPETED THE DESERT WITH MIRRORS. BALLANCE IS THE KEY.

I AM A TREE HUGGING LEAF EATING ENVIRONMENTALIST!!!

DESERT CENTER WAS A MINING TOWN THAT WENT BUST AND BECAME A PENAL COLONY THAT AGAIN WENT BUST. I WOULD LIKE FOR SOMEONE WHO HAS LIVED THROUGH THAT EVOLUTION EXPLAIN TO ME HOW SOLAR VIOLATES THE ENVIRONMENT.

BEST REGARDS,
HAROLD J. FOSTER

Thank you for your comment, Gary Vesperman.

The comment tracking number that has been assigned to your comment is SEDDSupp20009.

Comment Date: December 1, 2011 19:01:03PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDSupp20009

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Attachment: Seven clean energy inventions.docx

Comment Submitted:

It was nice to meet some of you people at last night's solar energy zones hearing in Las Vegas. I think we all learned some new aspects of solar energy.

In my testimony I claimed that the hydro-magnetic dynamo, electrino fusion power reactor, and electron spiral toroid Spheromak micro-fusion reactor should replace ruining millions of acres of pristine wildlands with solar energy collectors.

For example, for \$50 million, an electrino fusion power reactor, about the size of a single-wide manufactured home, could safely and continuously generate 1880 megawatts (nine-tenths of Hoover Dam's nameplate power generating capacity of 2080 megawatts) for 100 years with no fuel and no pollution.

Attached is a file titled "Seven Clean Energy Inventions". It contains brief descriptions of the three above powerful generators. Included are links to lengthy files on them.

The U.S. Government should immediately fund a WW II Manhattan Project-styled program to simultaneously commercialize all three generators ASAP.

Included in the attached file are brief descriptions of four other clean energy inventions - Moe-Joe orgone energy cell, thorium powerpack, capacitive step-down transformer, and environmental heat engines for emergency nuclear fuel cooling.

Vigorous development and commercialization of all seven of these meritorious clean energy inventions would go a long ways towards reducing the need to spoil millions of acres of pristine wildlands with costly solar energy collectors and transmission lines.

Seven Clean Energy Inventions

Compiled by Gary Vesperman, 588 Lake Huron Lane, Boulder City, NV 89005-1018 702-435-7947
garyvesperman@yahoo.com padrak.com/vesperman

Hydro-Magnetic Dynamo

A doughnut-shaped Hydro-Magnetic Dynamo as big as a two-car garage could safely and reliably generate 1000 megawatts minus its 10-megawatt sustaining input power for 25 years or more with no fuel, no pollution, and minimal maintenance.

From 1992 to 1997 in Armenia the third prototype hydro-magnetic dynamo continuously generated a constant current of 6,800 amperes at 220 volts DC – 1.49 megawatts. Its toroid weighed 900 kilograms and had a diameter of 2 meters.

Water flow through the toroid enables the hydro-magnetic dynamo to function as an over-unity electrostatic transformer. Electromotive force is induced by windings around the toroid.

The hydro-magnetic dynamo's production cost is estimated at \$500 per kilowatt. The hydro-magnetic dynamo's electricity would be priced .1 cent per kilowatt-hour. Capacities can range from 100 kilowatts to 1000 megawatts. Seven 1000-megawatt hydro-magnetic dynamos can be vertically stacked to combine into a single 7000-megawatt fuel-less hydro-magnetic dynamo.

For comparison, Hoover Dam's 17 generators have a total nameplate capacity of 2080 megawatts.

Inventor: Oleg V. Gritskevitch, Vladivostok, Russia
rexresearch.com/gritskevich/gritskevich.htm
padrak.com/vesperman "Locomotive Power Sources"
Russian Patent WO 011505A1

Electrino Fusion Power Reactor

The electrino fusion power reactor is a safe pollution-free generator of 1880 megawatts, net, of DC electricity. A linear accelerator (jpaw.com) collides two beams of electrons at 940 million electron volts. The electrino fusion power reactor's size would be 80' x 10' x 10'. 150 lbs of brass would be consumed over 100 years before shutdown for accelerator rebuilding. Super novae and $\eta'(938)$ decay confirm electrino fusion theory.

The energy released in annihilation photons would be 3760 megawatts. "Annihilation photons" are the 940 MeV X-rays produced when a negatron annihilates a proton. These X-rays are converted to electricity by order-to-disorder arrow-reversed photo-voltaic cells with nearly 100% efficiency. To sustain the electrino fusion reaction, 1880 megawatts would be taken from the 3760 megawatts output to power the folded linear accelerator, its eight 35 to 50-megawatt pulsed klystrons, magnets, power supplies, controls, etc.

The first 1880-megawatt electrino fusion power reactor may cost \$120 million. Subsequent electrino fusion power reactors would cost \$50 million. The price of its electricity would be a little more than .1 cent per KWH. Other applications include anti-matter rockets and annihilation of radioactive waste.

Inventor: Gordon L. Ziegler, Lacey, Washington, USA
benevolententerprises.org box.net/shared/k0g5nkkjfb6okhmyr6um
padrak.com/vesperman "Locomotive Power Sources"

Electron Spiral Toroid Spheromak Micro-Fusion Reactor

The Electron Spiral Toroid Spheromak (ESTS) Micro-Fusion Reactor was derived from an explanation for ball lightning. The ESTS is a plasma toroid that is self-organized and self-stable with no magnetic fields to contain it. All spheromaks reported to date dissipate in microseconds. The ESTS has been observed to endure with no confining magnetic fields for hundreds of milliseconds, and theoretically will remain stable for many seconds. The micro-fusion reactor's fuel comprises of hydrogen and boron.

Safe, pollution-free micro-fusion reactors could reliably generate electricity with capacities ranging from 10 kilowatts through 1000 megawatts at 10% of today's electricity price.

All transportation vehicles could be reliably and safely powered by micro-fusion reactors with substantially lower production, operating and maintenance costs, and without toxic emissions.

The mass and cost of aircraft may be reduced by 70%. Space launch costs may be reduced by more than 95%.

Inventor: Clint Seward, Acton, Massachusetts, USA electronpowersystems.com
US Patents 5,175,466, 5,589,727, 5,773,919, and 6,140,752
padrak.com/vesperman "Locomotive Power Sources"

Moe-Joe Orgone Energy Cell

In spring 2008 a spherical Moe-Joe Orgone Energy Cell, operating as an orgone energy accumulator, was installed in a 1993 Saturn. Orgone energy is transferred from the cell through a tube into the engine via its PCV valve intake. The Saturn's mileage jumped from 30 MPG to 47 MPG with 90% less exhaust pollutants.

The Moe-Joe orgone energy cell comprises of four concentric thin spherical stainless steel shells – 5, 4, 3, and 2 inches in diameter. The ball is filled with specially charged water and then sealed. Holes allow the special water to circulate between the inner shells. The Moe-Joe orgone energy cell does not generate hydrogen nor Brown's gas. Electrodes at the cell's north and south poles are respectively wired to the battery's positive post or engine ground. One end of the orgone energy transfer tube is fitted over a bolt about 30 degrees off the north pole. The charged water itself does NOT enter the engine. It is orgone energy that significantly adds power to the engine.

A car's computer injects more fuel when its oxygen sensor senses the fuel mixture becoming too lean. Special electronics are required to fool the computer. Standalone non-computerized diesel and gasoline generators would consume much less fuel.

Inventors: Joe, Australia, and Moshe Daniel Block, Lachine, Quebec, Canada moe-joe-cell.com
padrak.com/vesperman "Torsion Field Physics and Torsion Field Communications" and
"Advanced Technologies for Foreign Resort Project"
James DeMeo's "Orgone Energy Accumulator Handbook"

Thorium Powerpack

Thorium is abundant enough to power the entire planet for millennia. The Thorium Powerpack is inherently safe with no risk of "meltdown" nor radioactivity contamination. Its nuclear reaction simply stops when its neutron exciter is turned off.

A thorium powerpack's neutron excitor relies on resonant phonon pair cleavage using specifically designed nuclear lattice holo-forms (holographic waveforms) to induce neutron imbalance in a host atom where the host atom then attempts to establish "balance" through the liberation of neutrons.

Maintenance-free thorium powerpacks can generate 50 or 100 kilowatts for home use, and up to 1 megawatts for other uses at 10% of current electricity prices . They actually are "power amplifiers" with power outputs of 60 times over input power.

Inventor: Robert J. Dratch, Black Hawk, Colorado, USA bob-dratch.org
padrak.com/vesperman "Locomotive Power Sources"

Capacitive step-down Transformer

The Capacitive step-down Transformer is a simpler, cheaper, lighter, smaller, nearly 100% efficient alternative to inductive transformers. Capacitive step-down Transformers do not have inductive, noise, heat and sound losses of inductive transformers.

Capacitive step-down Transformers can be used anywhere that is stepping down high voltages, low amperes into lower voltages, higher amperes – industry, commercial, residential and appliances. Not using Capacitive step-down Transformers has resulted in lower efficiency of transmission and distribution with enormous waste of electricity.

Capacitive Power Supplies are inherently capacitive amperage limiting. So therefore short circuits do not damage them. A brownout or blackout in one area of the grid will not take down any generators that are protected with CPS technology. There is no need for electronic controls or a grid infrastructure upgrade – the amperage control is automatic and instantaneous. If a solar flare blows out many inductive transformers, Capacitive step-down Transformers can be fast, effective replacements.

Capacitive step-down Transformers can also be reconfigured quickly and easily onsite to handle more or less wattage or to change voltage and amperage ratios. All applications that use step-down transformers can be converted.

Inventor: George Wiseman, Oroville, Washington, USA
Author of "Capacitive Battery Charger" eagle-research.com

Environmental Heat Engines for Emergency Nuclear Fuel Cooling

Problem: Every century or two the sun aims towards the earth a huge coronal mass ejection causing an electromagnetic storm intense enough to blow out numerous inductive transformers. Power grids could go down for months. But nuclear reactor cooling pumps can only rely on diesel generators for at most a few days. Blackout-crippled refineries would not be able to supply diesel fuel for several months. Without cooling pumps, nuclear reactors and spent fuel storage pools would overheat – releasing catastrophic radiation ala Chernobyl and Fukushima.

Solution: Efficient and pollution-free environmental heat engines absorb ambient heat to expand a working fluid such as Freon or ammonia which pushes pistons through sealed chambers. An environmental heat engine can utilize a nuclear reactor's own natural low-grade heat to drive an auxiliary generator. The reactor's cooling pumps can be powered with the generator's electricity until the local power grid is eventually restored.

Robert Stewart's "Stewart Cycle" engine, Vapor Actuated Power Generating Device, Patent No. 4,033,136; Ralph J. Lagow's Method of Generating Power from a Vapor, Patent No. 4,693,087; Ken Rauen's Rauen cycle and Superclassical cycle engines; and George Wiseman's Wise cycle.

Inventors: Robert Stewart, Ralph J. Lagow, Ken Rauen, and
George Wiseman, Oroville, Washington, USA eagle-research.com

Thank you for your comment, Gary Vesperman.

The comment tracking number that has been assigned to your comment is SEDDSupp20010.

Comment Date: December 1, 2011 19:37:20PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDSupp20010

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Attachment: Energy Invention Suppression Cases September 3 2007.doc

Comment Submitted:

Attached is my compilation of 95 energy inventions that have been wrongfully suppressed by the U.S. Government and others. Page 55 has this:

The back-pack plasma beam device detected by the AWAC's during limited combat use in the Afghanistan desert was powered by energy storage devices constructed of crystalline lattice materials. After each laser burst, the energy storage devices were recharged every 12-15 minutes (nearly 45 minutes in the dark of night – the residual ambient heat of the desert is a very efficient source of infrared energy) by sunlight, collected and converted to electricity by four-foot square panels of "solar cell" material arrayed on a pole like a flag, each weighing less than ten ounces.

The electrical energy stored in the back-pack energy accumulators was transformed into enormously high voltages and released at almost unbelievably high current levels when the super-capacitors were sufficiently charged. The beam of "light" detected by the AWAC's crews was a field of plasma, flowing at the speed of light and demonstrating characteristics of mass (and, therefore, kinetic energy). The phenomenon represented by these bolts of lightning are not comprehensible according to the model of quantum mechanics and plasma physics currently being used in the West.

Battery packs utilizing these energy accumulator materials have been designed, produced and tested which provide more than 14 hours of continuously transmitted power on a single charge to conventional hand-held cellular telephone devices. Similar improvements in conventional battery/energy storage capacity have been developed and are being tested for such devices as video camcorders, laptop and portable computers and other similar consumer, commercial, industrial and military applications.

IPMS research in the field of layered crystals has thus led to the creation of capacitors with a very high level of capacitance (measured in farads). This technology is based on a revolutionary production technique which forms polarized surfaces of one molecule thickness, separated by less than one atomic diameter of space, held together by weak Van der Waals energy forces. The special properties created by these layered crystalline structures provide previously unimaginable internal surface areas. Super capacitors are constructed of layered materials numbering more than one million dipole sheets for each millimeter of crystal thickness.

These devices provide a virtually limitless number of charge-discharge cycles at astonishingly rapid charge and discharge rates. The potential impact of such devices on all electronic equipment currently being produced is incalculable, since virtually all electronic devices rely extensively on the West's state-of-the-art tantalum capacitance technologies.

At present, IPMS has on hand (among others) a super-capacitor roughly the size and dimension of a sandwich which develops more than 1,200 farads at 10,000 amperes. It also boasts production of a battery whose active mass energy density exceeds 850 watt-hours per kilogram. For the non-scientist (and all the rest of us as well) this means that a "battery" has been produced which, for the first time in history, produces more power per unit of mass than any fossil fuel ever devised.

(End of excerpt)

An alternative to ruining millions of acres of pristine wildlands with relatively inefficient solar energy collectors would be:

- a) This Draft Solar PEIS should thoroughly examine the consequences of the scenario where the U.S. Government ends its thorough and sometimes violent suppression of efficient ambient energy collectors and electrical energy storage devices such as those described on page 55 of the attached file.
- b) This Draft Solar PEIS should thoroughly and honestly examine the possibility of speedy development and widespread commercialization of IPMS-developed ambient energy collectors and storage devices.
- c) This Draft Solar PEIS should precisely compare the cost-effectiveness of installing on rooftops IPMS-developed ambient energy collectors and energy storage devices with vastly less efficient solar energy collectors and transmission lines that would cover and ruin millions of acres of pristine wildlands.

ENERGY INVENTION SUPPRESSION CASES

Compiled by Gary Vesperman with the help of numerous contributors

Introduction

In their efforts to improve the well-being of their fellow humans, inventors often suffer poverty, slander, and suppression. Inventors of energy devices in particular have been threatened by large energy corporations who are allied with the United States Government and seek to enslave people in subtle ways. The tactics used against energy inventors include “legal” imprisonment on false charges, harassment by the IRS, and outright criminal death threats, beatings, bribery, burglary, vandalism, and arson. At least a few inventors have been murdered if they were not dissuaded by other means.

Sometimes, however, alleged energy inventions actually have been scams, or were tested incorrectly, and their inventors then claimed to be victims of a conspiracy. Many inventors merely have been ignorant of the laws of nature – the history of “perpetual motion machines” provides ample proof of that fact. Many otherwise brilliant inventors have been poor businessmen who signed defective contracts or whose personalities prevented successful negotiations. Some have failed to persevere: it can take decades to bring an invention to the marketplace, and the vicissitudes of life interfered with their plans. Others unfortunately died of natural causes before they achieved success.

Adding to the practical difficulties of pulling out of thin air new energy inventions that have never before been thought of, testing prototypes of some of these energy inventions can be frustrating due to a weird quirk of nature. Thomas E. Bearden, Ph.D., reports that certain types of energy inventions interact with their local vacuums. Thus their coefficient of performance can vary from place to place, due to the local vacuums themselves differing. A machine would produce over-unity energy in one location; then inexplicably quit after being moved to another location!

Dr. Bill Tiller, former head of the Materials Science Department of Stanford University, developed a unique detector which required that he “grow” its proper pattern in the local vacuum interaction environment. Experimental results from the detector helped Bearden understand changes in interaction between a local vacuum and a novel machine.

All too many times, however, the conspiracy to suppress new energy inventions has been very real. For energy invention suppression updates, see <http://www.energysuppression.com>.

Energy Invention Suppression Case Statistics

Number of Energy Invention Suppression Incidents – **95**

Number of Dead, Missing, or Injured Energy Inventors, Activists, and Associates – **20**

Number of Energy Inventors and Associates Threatened with Death – **32**

Number of Energy Researchers and Associates Imprisoned or Falsely Charged – **5**

Number of Incidents of Energy Invention Suppression by the United States Government, Patent Office, Central Intelligence Agency, Federal Bureau of Investigation, U.S. Marshals, Army, Air Force, Navy, Bureau of Alcohol, Tobacco, and Firearms, Defense Intelligence Agency, S.W.A.T. Teams, National Security Agency, U.S. Postal Service, Department of Energy, Department of State, Securities and Exchange Commission, Food and Drug Administration, Department of Defense, Department of Homeland Security, Internal Revenue Service, Rural Electrification Administration, White House, Consumer Product Safety Commission, Small Business Administration, and Canada’s Royal Canadian Mounted Police – **59**

Number of Inventions Classified Secret by U.S. Patent Office – **5000**

Number of Incidents Involving Oil Companies – **9**

Names of Companies, Banks, State Agencies, Private Groups, and Universities Involved with Energy Invention Suppression – **Standard Oil, Zapata Petroleum, Atlantic Richfield, Exxon-Mobile, Shell Oil Company, General Electric Company, Yakuza, California Air Resources Board, Organization of Petroleum Exporting Countries, Wells Fargo Bank, Ford Motor Company, General Motors Corporation, Massachusetts Institute of Technology, Queen of England, Kollmorgan, World Bank, Rockefellers, Carlyle Group, and Bush Family**

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Nikola Tesla: Wireless Power and Free Energy from Ambient

Nikola Tesla invented the alternating current electrical system we use today, and dozens of other technologies. Many of his other inventions are fundamental to the modern electrical world. The US Patent Office has 1,200 patents from Tesla, and it is estimated that he could have patented an additional 1,000 or so inventions from memory! Nikola Tesla was undoubtedly one of the greatest scientists who ever lived.

Tesla's "Magnifying Transmitter", built in 1895 at Wardencliff on New York's Long Island, has been suppressed (largely by ignoring and disdaining it), but in recent years it has received new attention for its potential to power civilization with radio-broadcast electricity, possibly even without fuel. The project was financed by John Pierpont Morgan. But Tesla was not an astute business man, and he affected a disdain for money. It is popularly believed that when J.P. Morgan learned that Tesla's system would provide free energy, he stopped funding the work. As reported by Robert Nelson, (see his comprehensive energy inventions web site www.rexresearch.com) the fact of the matter is that, rather than arranging a comprehensive financial agreement for development of the system, Tesla simply dunned Morgan for relatively small sums of money at regular intervals. The personal nature of their financial relationship is evident to anyone who takes the time to read Tesla's correspondence with Morgan (not an easy task, as Tesla's handwriting is difficult to read). For more history, see Leslie R. Pastor's Introduction in http://peswiki.com/index.php/Site:LRP:Motionless_Electromagnetic_Generator. Tesla also built and drove a Pierce-Arrow car during the 1930's which ran on a free energy device without refueling.

Benjamin Fulford in a stunning early July 2007 interview by Jeff Rense (see interview transcript in http://bellaciao.org/en/article.php3?id_article=15376) claimed that his great-grandfather George Taylor Fulford was one of the richest men in the world. He also was the largest stockholder in General Electric. When he learned J.P. Morgan had abruptly backed out of supporting Tesla, Mr. Fulford pressured General Electric to step in. He was going to finance Nikola Tesla, but he was murdered by the Rockefellers in 1905. It was made to look like a car accident. And the family fortune was stolen by the Rockefellers. Benjamin Fulford's grandfather was only three years old at the time. His grandfather didn't know how to suspend his assets.

After Morgan died, his heirs and managers, who did not have a working relationship with Tesla, stopped supporting construction of the transmitter. The tower was demolished during World War II, allegedly because it could serve as a landmark for German submarines. Some modern conspiracy theorists have claimed that it was destroyed in order to suppress the technology. Perhaps so, but in any case, now we suffer with a monstrous grid system that is controlled at many levels, rather than enjoying the energy freedom Tesla had envisioned.

In a speech presented in 1988 on the subject of "Climate Change Factors, Ozone Layer Crisis, and Zero Point Energy Technologies" (see below for complete text) Adam Trombly reported information from a contact that Tesla was poisoned and died in 1943 the night before he was scheduled to go to Washington, DC to meet with President Franklin Delano Roosevelt. Tesla had intended to propose to Roosevelt that perhaps we should look carefully at the fact that we can get all the energy we need from any space we happen to be in. The U.S. Government's Federal Bureau of Investigation confiscated two truckloads of Tesla's written work after his death, much of which remains classified.

Robert Golka: High-Powered Tesla-Type Energy Tower

In 1981 in Wendover, UT, Robert Golka, a well-known Tesla researcher, was victimized by an attack on his workshop which has, for years, been in a deactivated Air Force hanger. His high-powered energy tower outside the hanger was partially destroyed. A witness said insulators and sections of the tower were laying around the base. In the meantime the rent on the Air Force hanger has been raised 1000 percent! These new difficulties now threaten to bring an end to his research with Tesla devices. (Source: <http://peswiki.com/energy/Directory:Suppression>)

Bruce DePalma: N-1 Homopolar Generator

Harvard-educated Bruce DePalma, who taught physics at the Massachusetts Institute of Technology for 15 years, invented the homopolar electricity generator, also called the "N-Machine", that could provide cheap, inexhaustible, self-sustaining and non-polluting energy. The N-Machine uses principles that flout conventional physics and are still not fully understood. A 100-kilowatt N-1 homopolar generator prototype sat in his garage. It could power his whole house. But DePalma was afraid to turn it on for fear the U.S. Government may confiscate it.

In early November 1980, the night before Bruce DePalma was scheduled to leave for Germany to be the featured presenter at Hans Nieper's Gravity Field Energy Conference in Hanover Germany, DePalma got a phone call from US astronaut Edgar Mitchell claiming "The CIA has information to the effect that if you go to Germany you will not be coming back. And you better watch out what you do there in Santa Barbara, or you might get your head blown off." Mitchell was "best friends with George H.W. Bush" – at that time directing the US Central Intelligence Agency (CIA). DePalma eventually left the USA to live in New Zealand.

BRUCE DePALMA: Free Energy Update 11/14/90. Audio cassette #A1009-90 \$9.00. Live on Something's Happening. Bruce DePalma, inventor of the "N Machine" (so-called "free energy") presents an update on its development including U.S. Navy development, a letter by U.S. astronaut Edgar Mitchell on the validity of the invention, and the forced imprisonment of DePalma's chief backer.

For more information about George H. W. Bush's involvement with the CIA, read the Truthout article "Bush Senior Early CIA Ties Revealed" in <http://www.truthout.org/docs/2006/010907P.shtml> (9 January 2007). Newly released internal CIA documents assert that the former US President's original oil company, Zapata Petroleum, was established in 1953 by joint efforts with Thomas J. Devine, a CIA staffer.

Devine and Bush visited Saigon early January 1968 shortly before the North Vietnamese launched their Tet offensive. Marshall Douglass Smith in his book *Black Gold Hot Gold – The Rise of Fascism in the American Energy Business* (see below) exposes how the war in Vietnam was not allowed to end until the very day that Standard Oil had completed using the US Navy to explore Vietnam's off-shore oil fields for ten bloody years at nearly no expense to the company. The war was needlessly prolonged by months of silly wrangling over the shape of the Paris peace negotiation table, and by Henry Kissinger's obfuscations.

?????: Mixed Chemical Stone

A mixed chemical stone was found in England and secretized by the Queen. It generated its own electrical sparks. This material appears to be a version of rocks which self-generate voltages such as those researched by John Hutchison, Thomas Henry Moray (see below), and Thomas Townsend Brown. The Queen's holdings are so extensive that it may be that she was not personally involved or even aware of the stone. The Queen may not have very much scientific understanding anyway.

April 7, 2006 Wells Fargo Bank announced they finally invested \$5 million of the \$1 billion intended for renewable energy. Where did they invest? In a mutual fund: Carlyle/Riverstone Renewable Energy Infrastructure Fund I, Limited Partnership. Funny thing, who are the 3 largest stockholders of Carlyle Group? The answer in order of largest percentage owned: (Source: Al Martin)

1. The Queen of England
2. Bush Family
3. Bin Laden Family

President George W. Bush's brothers Neil and Marvin Bush might be among the secret leaders of ongoing viciously thorough energy invention suppression. See <http://www.nogw.com/shadow.html>.

Andrija Puharich: Method and Apparatus for Splitting Water Molecules

One of the more interesting research projects in which energy researcher Leslie R. Pastor personally got involved with has been research involving 'water as fuel' dynamics. From the time of Jules Verne to the present 'water as fuel' has been man's quest, if not speculative goal, to discern, decipher and to design. It is well-known that water can be disassociated, and separated into its two components of hydrogen and oxygen. With the use of electrolysis, water is easily disassociated, giving off its properties, in the form of useful gases, but, in very limited quantities, depending upon the amount of current directly used to accomplish its disassociation. From Brown's (Rhodes) gas to 4-space, water is indeed mysterious, ultimately remaining the focus of countless experimenters and practitioners. And still it remains elusive just out of the reach of useful usage. Or has it?

Several recent experiments involving a variety of 'water as fuel' derivatives have ultimately surfaced, strongly indicating that 'hydrogen' based 'energy' structuring is fundamentally possible and will ultimately provide a means at accomplishing a very serious alternative to so-called 'fossil fuel' technologies. What remains to be seen, is whether the existing superstructure involving the monopolistic cartels of "global big oil" and "international nuclear-based companies" will allow any advancement towards 'market' restructuring, without their approval and cooperation.

Oil is just as easily ‘cracked’ and ‘restructured’ into ‘hydrogen’ formats. In fact, it is the goal of both of these factions to ultimately build a network of ‘novel’ nuclear reactors capable of providing ‘electricity’ and ‘hydrogen’ production derived from this combination, precluding any attempt to escape from their monopolistic designs of enforcing their ‘control’ paradigm.

The suppression of ‘water as fuel’ technologies invented by small independent inventors, therefore, takes on significance, since this would prevent further monopolistic dominance by the existing cartels, already dominating the existing ‘energy’ field.

Andrija Puharich (see <http://www.andrijapuharich.org/>) was granted U.S. Patent No. 4,394,230 for a "Method and Apparatus for Splitting Water Molecules." This method would reportedly split water molecules into hydrogen and oxygen with a net energy gain, and is essentially a perpetual energy device that many believe violates the first law of thermodynamics. Puharich was a very interesting gentleman, with friends in very high places, and led a very dynamic life, incorporating both, style and access, to some of the most powerful components of the political spectrum internationally. Puharich, being a friend of R. J. Reynolds (3rd), found support and protective acceptance, until he fell into disfavor with David Rockefeller, ultimately necessitating him to seek protection from another friend, the [then] Mexican President. Puharich capitulated, acquiescing to Mr. Rockefeller’s demands, promising not to engage in further ‘water as fuel’ research, thereby, stopping all attempts at his sanctioned assassination by the U. S. Government’s CIA.

<http://www.rexresearch.com/puharich/1puhar.htm>

<http://waterpoweredcar.com/puharich.html>

<http://www.zpenergy.com/modules.php?name=News&file=article&sid=1191>

<http://www.angelfire.com/ak5/energy21/puharich.htm>

<http://www.keelynet.com/keely/puhal.txt>

http://www.wasserauto.de/html/more_cars_.html

http://www.freie-energie.net/index/freie_energie/wasserautos/wasserautos.htm

Pastor mentions Puharich, in his initial introductory statement, because of Puharich’s direct relationship within the most significant references of power politics. Puharich was well connected, and respected within the most elite of global society. He was known academically, and internationally among the power elite. He therefore was a significant threat to those special interests involving a direct influence regarding energy sources as fuel derivatives. And his use of ‘water as fuel’ was a direct threat to one of the most powerful families on planet Earth. Puharich had to personally assure the Rockefeller family that he would no longer engage in further research or usage of ‘water as fuel’ to power combustion engines. (Source: http://peswiki.com/index.php/Site:LRP:Actual_Case_Histories_of_Suppression_Occurrences)

Neil Schmidt: Hydraulic Wind Turbine

Neil Schmidt stopped in Gary Vesperman’s office 12 May 1995 to discuss his invention of a hydraulic wind turbine. Schmidt had lived in Las Vegas for seven years. Nine years previous when he was living in the Seattle area, he went into a federal Small Business Administration office to apply for financial aid. The following day, he received a telephone call and was told it wouldn’t work and not to bother with it. He had provided the SBA office hardly more than a sketch so a hot argument erupted which lasted a half hour. The man ended up hinting death to Schmidt if he didn’t stop working on his invention. A couple of days later, Schmidt went back to the SBA office and walked around unsuccessfully trying to identify the voice he had heard on the telephone.

Neil Schmidt also has heard that another energy inventor living near his Washington residence had been shot in the head and blinded.

United Nuclear: Hydrogen Fuel System Kit

The United Nuclear Hydrogen Fuel System Kit converts late-model fuel-injected gasoline-powered vehicles to run on hydrogen. In addition to specific complete kits that are planned to soon be available for specific late-model cars and trucks, individual system components will be available for those who choose to assemble their own kits.

Included in the kits (and also available separately) is the company’s either solar or wind turbine-powered hydrogen generator that remains in the vehicle owner’s garage. The hydrogen generator manufactures the hydrogen fuel for the vehicle at virtually zero cost. Simply put, the vehicle’s owner never would have to buy gasoline again. Since there are no major changes made to the engine, a converted vehicle can still run on gasoline at any time.

Powering a vehicle by hydrogen is by no means a new idea, and in fact, almost all automobile manufacturers are currently developing a new generation of vehicles that run on hydrogen as opposed to gasoline. This new generation of vehicles essentially comprises of electric cars that use fuel cell instead of batteries to run the electric motor. Using a chemical process, fuel cells in these new vehicles convert the stored hydrogen on board, and the oxygen in the air, directly into electricity to power their electric motors. These new hydrogen powered electric vehicles are very efficient, and in fact are more efficient than any internal combustion engine. The problem is that these new vehicles are years away from production, are very expensive, and converting to using hydrogen fuel in this manner requires the purchase of a new (and expensive) vehicle. All hydrogen/fuel cell systems currently under development by large manufacturers require the purchase of hydrogen as would be for gasoline.

The United Nuclear Hydrogen Fuel System Kit is an intermediate approach that simply converts existing vehicles to burn hydrogen or gasoline. The stock gasoline fuel injection system remains intact and is not modified in any way. It is shut down while the hydrogen fuel system is activated. The company reportedly operates two test vehicles for which gasoline haven't been bought for two years.

The hydrogen gas is precisely metered into the air intake of the engine while the exhaust gasses are continuously analyzed for correct burn ratio. This allows the driver to switch between running on gasoline or hydrogen at any time. The engine itself is only slightly modified. The conversion makes substantial changes to the computer & electrical system, ignition and cooling systems. Since they never have to be removed, hydrogen fuel storage (hydride tanks) can be installed in virtually any available space within the vehicle.

Due to the fact that hydrogen gas burns so much faster than gasoline, engines with compression ratios greater than 9.5 to 1 are very susceptible to damaging pre-detonation (engine knock). For this reason, hydrogen conversions are not recommended for vehicles with turbochargers, superchargers, or compression ratios greater than 9.5 to 1. Also, because of the higher compression, different ignition system, and host of other factors, the Hydrogen Fuel System will not work on diesel engines.

The company's hydrogen generator produces hydrogen from electricity. The electricity can be common "household current". If the electricity is produced directly from solar power or wind power, the energy cost is zero. Electricity can be produced by Neil Schmidt's hydraulic wind turbine (see above), or by a number of other wind generators such as Number 47 of <http://iic.de/4643.html> which is a combined solar/wind electricity generator.

The most productive solar photo-voltaic cell seems to be the Soviet-developed high-efficiency crystal lattice solar photo-voltaic cells described below.

Las Vegas inventor Jeff Prescott invented a method of generating hydrogen by concentrating solar rays to heat pure iron in the presence of water. The iron oxide byproduct can be sold for paint and other uses. Questions remain as to the overall energy efficiency of his process, particularly in regard to refining and transporting the pure iron.

It does, however, take a substantial amount of time to produce sufficient hydrogen to fill even a small tank. As an example, it takes over 2 days of the company's hydrogen generator running at full power, 24 hours a day, to fill its smallest "short range" tank.

The tanks are filled with granulated hydrides which absorb hydrogen like a sponge absorbs water. Hydrogen is pressurized into the material. Hydrides have many advantages over ultra-cold liquid or pressurized gaseous hydrogen. One is that the density of the hydrogen stored in the hydride can be GREATER than that of ultra-cold liquid hydrogen. This translates directly into smaller and fewer storage tanks.

Once the hydride is "charged" with hydrogen, the hydrogen becomes chemically bonded to the chemical. Even opening the tank, or cutting it in half will not release the hydrogen gas. In addition, if incendiary bullets are fired through the tank, the hydride would only smolder like a cigarette. It is in fact, a safer storage system than a gasoline tank.

Then how do you get the hydrogen back out? To release the hydrogen gas from the hydride, it simply needs to be heated. This is either done electrically, using the waste exhaust heat, or using the waste radiator coolant heat.

The company's Hydrogen Fuel System kits heat the hydride tanks electrically. As soon as the hydride is sufficiently warm, hydrogen is released from the tanks, and the on-board computer detects the presence of hydrogen pressure. The fuel system remains in "Hydrogen" mode until the tank pressure begins to drop. If the tanks run out of hydrogen, the engine will seamlessly switch over to gasoline, which enables the car to run conventionally until the hydrogen tanks are refilled at zero cost.

Using hydrogen, the only exhaust products produced are water vapor and a tiny amount of nitrogen oxides. It's about as clean burning as you can get.

United Nuclear's first prototype was a 1994 Chevrolet Corvette that was converted to run on hydrogen. Using the Extended Range kit (2 sets of tanks), the driving range is over 650 miles per fill. As the hydrogen gas is produced using the company-furnished solar-powered hydrogen generator, the resulting fuel cost is near zero.

United Nuclear now has accumulated over 50,000 trouble-free miles on their prototype vehicles. They are currently fleet-testing their systems and are in final preparation for sales to the general public. They will fully guarantee and stand behind all their products and workmanship. Their conversion kits will initially sell for \$7,000 to \$10,000 each.

United Nuclear has developed every aspect of its Hydrogen Fuel System on their own, using their own funds and not a dime of federal tax money. They do not sell stock, and do not need investors.

Not unexpectedly, the corrupt U.S. Government has swooped in by utilizing its Consumer Product Safety Commission (CPSC) as a means of suppressing the pending commercial sale of United Nuclear's Hydrogen Fuel System Kit by confiscating the necessary chemicals used in this system from public use – possibly basing its action on false premises.

Currently, the CPSC is focusing on common chemical oxidizers such as perchlorate compounds, nitrate compounds, permanganate compounds, chlorate compounds, etc., along with a wide variety of other common chemicals and metals such as sulfur, aluminum, magnesium, titanium, zirconium, zinc, manganilim, benzoate compounds, salicylate compounds, antimony and antimony compounds, etc.

The CPSC now claims that this action is to stop the manufacture by United Nuclear of illegal explosive fireworks. If their true intention is to attempt to curtail the construction of these devices, there are only two chemicals which should be of concern: potassium perchlorate and German aluminum.

For those unfamiliar with exploding fireworks, they are all made from one material: flash powder. Flash powder is a mixture of potassium perchlorate, and a special ultra-fine aluminum powder known as German aluminum. These have been the only 2 chemicals used in the manufacture of every single exploding firework from firecrackers to M-80s from the 1960s to present times.

United Nuclear's Hydrogen Fuel System Kit is not yet available for sale. There are legal problems with several components of the unit which is preventing its sale. Until the legal proceedings are complete, the company won't be moving forward with the system. (Sources: <http://www.switch2hydrogen.com/>, <http://www.switch2hydrogen.com/>, <http://www.unitednuclear.com/legalactionletters.htm>, <http://www.wired.com/wired/archive/14.06/chemistry.html>, <http://nextconservatism.com/2006/11/14/>, <http://roquestatesmen.blogspot.com/2006/05/who-wants-free-energy-anyway.html>, and <http://peswiki.com/index.php/Directory:Suppression>.)

Daniel Dingel: Converts More than 100 Cars to Run on Water

Inventor Daniel Dingel, who lives in the Philippines, since 1969 has converted more than 100 gasoline cars to be powered by hydrogen derived ON DEMAND from plain water. Aluminum is used in the tank to suppress a possible explosion. The Philippines President is not interested because of an agreement with the World Bank. For a link to a movie about his water-powered cars, see Section 12-G of <http://www.byronwine.com/>. For more on the Philippines experience with the international bankers, see <http://www.indybay.org/newsitems/2006/04/10/18144521.php>.

Maker of water-powered car still fighting after 30 years

By Joey G. Alarilla (see http://www.wasserauto.de/html/inquirer_article.html.)

1969 was a landmark year for a number of reasons, including the conquest of space and cyberspace. Even as that year saw Neil Armstrong and Buzz Aldrin walking on the moon, so was the Internet born when its earliest incarnation, the United States Defense Department's Arpanet (Advanced Research Project Agency network), went online.

In the Philippines, 1969 was also the year that a Filipino inventor claims to have started tinkering with a revolutionary concept for the automotive industry. His idea: To power cars using hydrogen derived from ordinary water.

Today, 30 years later, inventor Daniel Dingel is driving around in the only water-powered car in the world, still complaining that Filipino government officials and scientists refuse to support his invention.

"They keep saying that the government is pro-poor, but what they do is sell off the resources and wealth of the Philippines. The government should really support the development of technology that would help the country pay its huge foreign debt," he said.

At the Inquirer parking lot last Tuesday, Dingel showed off his "concept car"- a red 16-valve Toyota Corolla with the small hydrogen reactor that he invented hooked up to its internal combustion engine (ICE). Dingel's hydrogen car has actually received media coverage since the late '80s or so, but to date his invention has not yet been patented and commercialized. Dingel attributed this to the influence of multinational companies, such as the oil companies. A conspiracy theory worthy of the X-Files, perhaps, but if Dingel's idea is real, then the truth is way out there.

How it works:

According to him, his reactor uses electricity from a 12-volt car battery to transform saltwater or ordinary tap water with salt into deuterium oxide or heavy water, which is chiefly used as a coolant for nuclear reactors. Deuterium is actually a hydrogen isotope with twice the mass of ordinary hydrogen, and heavy water is produced when the hydrogen atoms in H_2O are replaced with deuterium.

"The electricity from the battery splits the water into its hydrogen and oxygen components, and this hydrogen can then be used to power the car engine. Normally it takes temperatures of about 5,400 degrees Fahrenheit to generate hydrogen from water, but here I am just using an ordinary 12-volt battery," he claimed.

Just how this kind of chemical reaction is possible using an ordinary car battery is, of course, the secret behind Dingel's invention – and the kind of claim that leads people to dismiss him as a crackpot and charlatan. In fact, while hydrogen is being touted as a viable alternative fuel in the US and other countries, these prototypes do not make use of internal combustion engines but fuel cell engines, nor do they run on ordinary water but on liquid hydrogen.

For example, DaimlerChrysler unveiled in the US in March the hydrogen-powered NECAR 4 (New Electric Car), which is based on a Mercedes-Benz A-class compact car.

In these fuel cell cars, water is just a by-product of the reaction between hydrogen and oxygen ions, which produces the electricity to run the car's engine. In this sense, the fuel cell process is the reverse of Dingel's discovery. Also, Dingel claims that his reactor can work with any existing ICE-based car.

Dingel said some investors from Taiwan now plan to commercialize his car and help him get an international patent.

(End of excerpt)

Update (*Electrifying Times* (www.electrifyingtimes.com), Vol. 10, No. 2, 2007, page 22):

Dingel did get some of his international patents and was given a sizeable sum of money from yet unknown sources to keep his invention quiet. The secret formula for Dingel's technology as well as the late Stanley Meyer's water cell car is a certain resonant frequency and voltage that allows much lower energy to produce hydrogen and oxygen from water than the standard electrolysis method requires. Stay tuned.

This writer, Gary Vesperman, included a possibly similar invention in his somewhat obsolete compilation of "Advanced Technologies for Foreign Resort Project" which is in <http://www.icestuff.com/~energy21/advantech.htm>. It is copied as follows:

Water Engine. Hydrogen is formed by creating an underwater electrical discharge between two aluminum electrodes. Aluminum wire is fed against a rotating aluminum drum. A hydrogen-fueled 900-kilogram car runs 600 kilometers on 20 liters of water and one kilogram of aluminum.

The required high voltage can be obtained from the battery, a generator off the drive shaft, or two coils in parallel and fed from a conventional distributor.

The hydrogen gas fills a small buffer tank which in turn supplies hydrogen to the engine on demand. When the tank's pressure exceeds a predetermined level, the electrodes are separated so that hydrogen generation is interrupted. As the pressure drops to a certain level, the aluminum wire is again fed against the aluminum drum.

Ken Rasmussen: Water-to-Energy Electrolysis Process

Ken Rasmussen and his team have been working on a water-to-energy electrolysis process that turns out to have similarities to that of Professor Kanarev. Both use a pulsed signal, and both were seeing similar performance rates. Kanarev holds multiple patents, and is widely published.

Their work ceased after a member of the research team was threatened at gunpoint on 16 May 2006. Unknown to Rasmussen, his associate had faced a violent confrontation with 4 young to middle-aged white males in black suits driving a late model black Lincoln Town Car.

Shoving Glocks and Mac-10s in his face at a rural intersection, they told him extensive details about his family and threatened lives of him, family and all associates if he didn't stop work on the process immediately and NEVER go to the authorities. His associate, now scared for his own life and that of his family, complied. But similarly to Bill Williams' case (see below), when happy people start acting silent and paranoid, friends get suspicious.

In the good old days, big business bullies offered lots of money to buy somebody out and eliminate the competition. Stanley Meyer claimed before his suspicious death that he refused an offer of a billion dollars from Arab oil interests if he would stop work on his electrolysis process. (Meyer received at least eight patents in addition to US Patent 4,389,981 relating to hydrogen and oxygen gasses extracted from water for fuel.)

But to date, NOBODY has offered Ken's company a dime for their "yet bench top" technology. BUT somebody HAS threatened to KILL THEM. Would any skeptic out there care to explain that to Ken? Ken had been in discussion with several pre-screened, suitable investors, who were waiting on Ken's company to fix a final detail before showing them a live demonstration.

Enormous amounts of personal information thrown in their face behind the guns proved to Ken NONE of the prospective investors had anything to do with the violence we experienced. These thugs knew things Ken DIDN'T EVEN KNOW. Their boss has digital cell phone tapping technology at the very least. Other details were probably obtained by wire tapping neighbors and friend's phones too.

For any of Ken's previous business contacts reading this, please excuse the delay. The lives of Ken and his associates have been directly threatened if they were to complete the item they were intending to demonstrate. All progress is stopped.

Given the nature of oil or banking history, who do you think paid these hired gunmen to do the dirty work? Ken would appreciate some solid leads. Ken has to admit, oil has become intertwined with both banking and government over the years; so unofficial policies may have changed.

For more energy invention suppression details, see Ken's web site
<http://www.commutefaster.com/klooz.html>.

Bob Boyce: Brown's Gas Carburetor

Bob Boyce built a carburetor using hydrogen and oxygen previously split using proper frequencies. See http://www.greaterthings.com/News/Tilley/testimonials/related/Bob_Boyce.htm.

From: "Bob Boyce" <theghost@realmcity.com>
To: <sterlingda@greaterthings.com>
Sent: Monday, October 07, 2002 8:38 PM
Subject: GTcontact

Hello there

I just read your response to the message from someone asking why you're promoting a fraud (Tilley), and I must commend you on your response. There are a lot of closed-minded and narrow-minded people out there, most of whom were highly educated in traditional schooling methodology taught at most of the universities and colleges throughout the world. They get this doctrine shoved down their throats that if it's not documented in books and/or upheld by popular theory, then it's just not possible. Any attempt to demonstrate such technology usually falls on deaf ears and blind eyes because they refuse to adjust their thinking to accept that maybe something may be possible after all.

I learned the hard way about how society treats those that dare to do something different. I'm not seeking publicity or recognition for any research I did, just wanted to privately relate my experiences with you and ask that you please not publish or share this with anyone. (See link above. Sterling Allan must have subsequently obtained Boyce's permission to publish his story. Gary Vesperman)

I had an electronics business down in south Florida where I owned and sponsored a small boat race team through my business starting in 1988. We had a machine shop out back of my business for doing engine work, and I worked on engines for other racers and a local mini-sub research outfit that was building surface running drone type boats for the U.S. Government's Drug Enforcement Administration (DEA).

I delved into hydrogen research where I was building small electrolyzer type units that used distilled water mixed with an electrolyte. I would then resonate the plates for optimal conversion efficiency.

I discovered that with the right frequencies, I was able to generate monatomic hydrogen and oxygen, which when recombined, produces about 4 times the energy output of normal diatomic hydrogen and oxygen molecules since the process of combustion does not have to break apart the molecules first before recombining into water vapor. Diatomic hydrogen requires about 4% to air to produce the same power as gasoline, while monatomic requires slightly less than 1% to air for the same power.

The only drawback was storage at pressure causes the mono-atoms to start joining into diatomic pairs, and the mixture weakens, so it must be produced on-demand and consumed right away. I used modified LP carburetors on the boat engines to deal with using vapor fuel. I even converted an old Chrysler with a slant six engine to run on the hydrogen setup and we tested it in the shop.

I never published anything of what I was working on, and we always stated that our boats were running on hydrogen fuel, which was allowed, to avoid any controversy at the races. It wasn't until many years later that I found out what I had stumbled upon was already discovered and known as "Brown's Gas", and there were companies out there selling the equipment and plans to make it.

I had never tried to market anything, but I was plagued with trouble ever since I did the conversion to the old Chrysler and did a few test runs on it in the shop. My shop, which had never had any major crime problems before, suddenly was getting broken into, and pieces of equipment related to the hydrogen project were getting vandalized or stolen. I thought it might be that one of the guys that worked for me might have leaked something to someone and they were trying to either steal the technology or stop me from working on it. I ended up shutting down the research, getting out of it all, converting the boat engines back to racing fuel and selling off the race boats. The break-ins stopped, and I had no further trouble up until I totally closed the business and retired in 1991.

I was struck by lightning in 1995 and in 1997 I moved out of Florida, the lightning capital. I am now crippled with arthritis (which is common amongst lightning strike survivors), and recently I developed congestive heart failure/pulmonary edema. I may be weak in body, but I am determined to try to stay as active as I can. I am currently stripping down an old 1984 Dodge Aries with only 29K original miles so I can convert it over to electric operation.

I have been seeking all information I can find to be able to apply this unique charging arrangement that Tilley is using and to find out what type of electric motor would be best to use with it. I'm in the eastern TN area in the mountains so it must have enough power to climb the uphill grades and hopefully be able to regenerate on the downhill grades. So far I have found very little information on this. Any help you could provide to steer me in the right direction would be appreciated.

Thank you,
Bob Boyce

Stanley A. Meyer: Water Fuel Cell-Powered Car

Stanley A. Meyer invented a water fuel cell, which is not to be confused with the well-known fuel cells using membranes, etc. Meyer's device is supposed to break water into hydrogen and oxygen gases using less energy than that present in the bond itself. Furthermore, ordinary tap water requires the addition of an electrolyte such as sulphuric acid to aid current conduction; Meyer's cell functions at greatest efficiency with pure water.

More precisely, Meyer claimed his super-efficient electrolysis process produces 700% more energy than it consumes (for instance, by connecting it to an engine that would burn the hydrogen back into water) without raising the temperature of the water. Meyer assembled a car prototype powered by a water fuel cell.

Meyer's water fuel cell consists of stainless steel plates arranged as a capacitor – with pure water acting as the dielectric. A rising staircase of direct current pulses is sent through the plates at roughly 42 kilohertz, which is claimed to play a role in the water molecules breaking apart with less directly applied energy than is required by standard electrolysis. The mechanism of this reaction is undocumented.

Using his super-efficient hydrogen separator, Stanley Meyer claimed he could drive a water fuel cell-powered car from California to New York averaging 100 miles per gallon of water.

Meyer has demonstrated his fuel cell device before Professor Michael Laughton, Dean of Engineering at Mary College, London, Admiral Sir Anthony Griffin, a former controller of the British Navy, and Dr Keith Hindley, a UK research chemist. According to these witnesses, the most startling aspect of the Meyer cell was that it remained cold, even after hours of gas production as his system appeared to operate on mere milli-amperes, rather than the amperes that conventional electrolysis would require. The witnesses also stated:

"After hours of discussion between ourselves, we concluded that Stan Meyer did appear to have discovered an entirely new method for splitting water which showed few of the characteristics of classical electrolysis. Confirmation that his devices actually do work come from his collection of granted US patents on various parts of the WFC system. Since they were granted under Section 101 by the US Patent Office, the hardware involved in the patents has been examined experimentally by US Patent Office experts and their seconded experts and all the claims have been established."

Meyer received at least eight patents in addition to US Patent 4,389,981 relating to hydrogen and oxygen gasses extracted from water for fuel. The granting of a US patent under Section 101 is dependent on a successful demonstration of the invention to a Patent Review Board.

U.S. Patent 5,149,407: Process and apparatus for the production of fuel gas and the enhanced release of thermal energy from such gas

U.S. Patent 4,936,961: Method for the production of a fuel gas

U.S. Patent 4,826,581: Controlled process for the production of thermal energy from gases and apparatus useful therefore

U.S. Patent 4,798,661: Gas generator voltage control circuit

U.S. Patent 4,613,779: Electrical pulse generator

U.S. Patent 4,613,304: Gas electrical hydrogen generator

U.S. Patent 4,465,455: Start-up/shut-down for a hydrogen gas burner

U.S. Patent 4,421,474: Hydrogen gas burner

U.S. Patent 4,389,981: Hydrogen gas injector system for internal combustion engine

"It Runs on Water" is a video with Stanley Meyer demonstrating the water fuel cell in a car. Meyer claimed that he could run a 1.6-liter Volkswagen Dune Buggy on water instead of gasoline.

The basic problem with Meyer's invention, as reliably reported by Eugene Mallove in an Infinity Magazine article (see <http://www.rexresearch.com/meyerhy/meyerhy.htm>), is that he had never consented to conclusive tests. Skeptics point out that electrolysis of water, as explained by chemistry textbooks, requires more energy to break the hydrogen-oxygen bond than is regained by burning the two gases. Nonetheless Meyer's supporters suggest it is worthwhile to try to successfully replicate his process.

Stanley Meyer died after eating at a restaurant on March 21, 1998. Coroner William R. Adrion's autopsy report states that "Decedent supposedly at lunch with N.A.T.O. officials at a Cracker Barrel diner. The group made an opening toast with cranberry juice, immediately after which, decedent ran outside followed by his brother, then vomited violently and told his brother that he had been poisoned."

At the time of Meyer's death this writer, Gary Vesperman, sent out an email explaining that there is a type of stroke in the base of the brain that matches his brother's description of how Meyer died. The victim immediately becomes highly aggravated for a fraction of a minute or so. After the brain soaks up too much blood, its oxygen flow is shut down and the victim then dies.

Meyer's unusual death and its suspicious timing and circumstances understandably cause offerings of conspiracy theories regarding the possible poisoning of his cranberry juice by the oil companies and the U.S. Government. It apparently has not been verified who were with Meyer in the restaurant and exactly what they were celebrating.

The discussion below of Stanley's legal hassles is from <http://www.waterfuelcell.org/moreinfo.html>. If true, it cites more than one instance of intentional tampering with judicial due process – doubtless to discredit his water-fueled car invention. Either Stanley Meyer's water fuel cell did not in fact achieve his performance claims, or the United States federal government and Ohio state government should instead have been supporting Stanley's research.

Fraud charges:

It failed to work during a required demonstration of the water-fueled car in a 1990 court case. An Ohio court found Stanley Meyer guilty of "gross and egregious fraud" in a case brought against him by disgruntled investors. The court decided that the centerpiece of the car, his water fuel cell, was a conventional electrolysis device, and he was ordered to repay the investors \$25,000.

However, in their 1 December 1996 issue, the London Sunday Times published an article entitled "End of Road for Car that Ran on Water" by Tony Edwards. It upheld the court case, stating that three "Expert Witnesses" were not impressed and decided that the WFC was simply using conventional electrolysis. It stated Stan Meyer was found guilty of "gross and egregious fraud" and was ordered to repay the investors their \$25,000. It implied that Michael Laughton, professor of electrical engineering at Queen Mary and Westfield University, London was due to examine the car, but was not allowed to see it.

However, not mentioned was that this occurred in 1990 and that the WFC Water Fuel injector tech-base was still under U.S. National Security Review as in accordance to U.S. Patent Law and not available for public viewing. Also not mentioned were the many WFC patents, verified laboratory and university testing that supports the basis of WFC technology nor was the WFC appeal filing to dismiss Judge Corzine's ruling due to judicial default and other relevant information.

On 18 October 1995, a pretrial deposition hearing to inspect the WFC Dealership demonstration units (Variable-plate Electrical Polarization Process (VIC) Fuel Cell and Rotary Pulse Voltage Frequency Generator Tubular-Array Fuel Cell) was held in the office of the plaintiff's attorney, Robert Judkins. Present were the plaintiffs, their attorneys, plaintiffs expert witness, Michael Leverich (Electronics Engineer), Stan Meyer, Dr. Russel Fowler, WFC witness and defense attorneys Judge Roger Hurley and James Detling, as well as a deposition recorder.

During the deposition, Attorney Judkins attempted to have the WFC dismantled prior to implementing proper test procedures, which Stan Meyer refused. Michael Leverich confirmed that his initial measurements of the WFC Fuel Cells showed that it operated exactly as the WFC documentation stated it should, as so recorded on WFC Deposition Video Tape.

However, he then added an unknown white substance (powder) for additional testing. Stan objected to this, since the WFC Fuel Cell uses plain tap water and does not require a chemical additive. The plaintiffs also admitted that, during their observances at WFC Dealership Seminars, tap water was always used without any chemicals added to the water. Despite Stan's objection, plaintiff measurements were taken of this chemicalized water-bath and recorded. This illegal act of tampering with WFC Evidence of Records was witnessed by WFC Cameraman, Dr. Russ Fowler, and all others who attended Plaintiffs Deposition To-Test.

In 1996, Stan Meyer gave oral testimony before the court demonstrating the WFC Fuel Cell "Mode of Operability" by using the Voltage Intensifier Circuit (VIC) to produce voltage of opposite polarity to separate and disassociate the water molecule into its component gases, hydrogen and oxygen. However, the court audio sound recording equipment seemed to malfunction and was switched off. Judge Corzine said proceedings should continue without it. This was a violation of judicial protocol, since the recording system is used to verify testimony given during the trial and as such becomes "Evidence of Records."

After his oral testimony, Stan expected Attorney/Judge Hurley to start bringing forth WFC witnesses and counter arguments. Instead, Attorney/Judge Hurley spoke up, stated he had to leave for a pre-planned vacation and said that there was no more testimony to be given and waived the right of the defendant to give a case summary of the WFC facts brought before the court. Stan Meyer immediately stated he would protest, and Judge Corzine ended the hearing.

Stan wrote a "Request to Retract" fax-letter to the Sunday Times on 2 December 1996. He attached WFC documentation on the filing with the Disciplinary Counsel. He further stated that Judge Corzine had no right to turn off the court audio sound recording equipment, nor to rule against U.S. Patents, or overrule Government and University lab reports in the public domain concerning the mode of operability of the WFC Technology. Furthermore, Stan pointed out that no US Federal "Cease and Desist" order has ever been issued against WFC since the WFC Technology has been fully legalized under US Patent Security Law 35 USC 101 and other US Federal regulatory Acts. His final statement was that "WFC is here to stay" in contradiction to the Sunday Times statement.

Stanley Meyer's twin brother Stephen Meyer has warned per his email below that the above is not wholly true. Attempts by Gary Vesperman to obtain Stephen's corrections have been unsuccessful. Stephen's web site www.hydrotechgroup.com still does not include any information which could clarify Stanley's apparent suppression troubles and suspicious death.

From: Stephen Meyer [mailto:appli-tech@msn.com]
Sent: Wednesday, March 14, 2007 12:18 AM
To: altenergy2007@gmail.com
Subject: RE: Fwd: Terry Sisson on Stanley Meyer; Xogen

Hi Guys, go to my web site www.hydrotechgroup.com

Oh! Gary Vesperman's write up is really bad and does not reflect true events about Stan and is completely out of context in many areas. It is my hope that this article is corrected before publishing. Stephen Meyer his twin...

Stephen Meyer
Appli-Tech@msn.com
Office Phone: 1.612.374.1609

Frank Roberts: Water Car

Frank Roberts is active on the Yahoo water car chat board. He was gone for a while. Then he showed up with this story that was emailed to the Yahoo water car chat board on October 4, 2005. His location is unknown. He is trying to rebuild what he had from memory, but is having a difficult time at it.

Subject: I'm Back

Hello to everyone in the water car group from Frank Roberts

To the older members of the group I say hello; to the newer ones I'm a member who had a working water car and was preparing to go cross country and see some of the members, etc. My last message was about a year and a half to two years ago, I'm not sure. At that time I reported to the group that my office was invaded by authorities and all my paper work was photographed and some taken. My van that I was working on for a carbureted vehicle was burned in the middle of the night, and my fuel injected Taurus was taken. I suffered a chemically induced stroke and am now in a nursing home. I have lost part of my long term and short term memory. My paralysis is pretty much gone, and I now have internet access in my room. I have a lot of catching up to do on the progress of the group. I no longer have my lab and all its resources but will try to contribute from experience and expertise. I look forward to hearing from the group. It's good to be back on line.

Best Wishes,
Frank Roberts

Andrew Leech (Reporter): Suspicious Deaths of Inventors in Australia

From: Andrew Leech
To: sterlingda@pureener gysystems. com
Sent: November 02, 2006
Subject: BJ Proton Cell

Hello, I'm Andrew Leech from Floppy Sponge Automation in Melbourne, Australia. I've been a keen experimenter in a number of energy areas for some time now, both privately and through FSA. I'm especially interested in the Joe Cell and could help in a setting up a reliable demonstration model of the Proton Cell variant as well as helping to spread and promote the technology... [Deleted]...

I personally believe if we can have development undertaken relatively quietly through supportive channels such as PES Network, and produce a number of engines running this way privately, then distribute them quietly over a large area (Colin at FSA has numerous contacts right across Australia, Malaysia and Taiwan), when it is announced publicly it will already be out there too widely to be hushed up. I've heard reliable confirmations of suspicious deaths on inventors in Australia, so don't want to take the threat lightly. If we can have a large group of replications all announced simultaneously we have a chance of getting around that threat... [Deleted]...

Regards,
Andrew Leech
Floppy Sponge Automation
12 Birch Ave Dandenong Nth,
Vic, Australia 3148
<http://www.floppyspongeonline.com>

Gerald Schaflander: Solar-Produced Hydrogen Turned into Liquid Hy-Fuel

During the 1970s Gerald Schaflander, with the Solar Electric Power Corporation of Culver City, California, and with financial help from some friends, built a pilot production facility in Menlo Park, California. Schaflander had developed gallium aluminum arsenide/gallium arsenide solar cells and was producing hydrogen with the cells' output, which was then chemically turned into a liquid fuel called Hy-Fuel. The fuel could be utilized in cars or trucks. It was not used as a liquid but as hydrogen gas, by cracking it and feeding the recovered hydrogen gas through a special carburetor.

Schaflander and his scientists had found from their own experiments that silicon will not work. It deteriorates in the desert heat and becomes only about 2 percent efficient. Having found silicon cells unsatisfactory, Schaflander's scientific team perfected gallium aluminum arsenide/gallium arsenide solar cells. They also found a way to produce such cells on a semi-automated basis, slashing costs. Some of the photovoltaic cells used to power NASA spacecraft cost as much as \$5 a watt to produce; Schaflander's automated process reduces the cost to 27 cents a watt.

The prototype of a commercial Hy-Fuel production facility on 1000 acres of leased land near Yuma, Arizona comprised of two lines of slanted solar panels that gather the sun's rays. Behind them were rounded, cylindrical "parabolic concentrators" that intensify the energy collected by the panels and focus it on photovoltaic cells. The cells produce electrical energy, and electrolysis then splits the hydrogen atoms from water. The hydrogen gas so produced is turned into a stabilized liquid similar to ammonia. The liquid Hy-Fuel is fully substitutable for fuel oil or for gasoline in automobiles, tractors and other vehicles. These are connected by wires and tubing to a small pumping station and rounded storage tanks.

This Yuma solar energy farm was the creation of Consumers Solar Electric Power Corporation of Culver City, California. On July 1, 1980 the firm had its first commercial tank load of 250 gallons of Hy-Fuel ready for delivery at only 50 cents a gallon, and was producing more Hy-Fuel. With an option on leasing another 10,000 acres and given financial support, the facility could be cranked up to full production on the entire 11,000-acre tract in six months. According to Stephen Wright, president of Consumers Solar and its scientific expert, with eight hours of continuous Arizona sunlight a day, such an energy farm would produce 3.8 million gallons of Hy-Fuel a day.

Hy-Fuel production could be increased considerably by substituting Soviet-developed high-efficiency crystal lattice solar photo-voltaic cells (see below).

A unique co-generation system would turn the waste heat produced by the process into low-pressure steam that could be used to drive turbines producing electric power for the utilities. Schaflander estimates that his company's energy farm could produce electricity at a capital cost of \$690 per kilowatt. The capital-cost figures for fossil-fueled and nuclear-powered plants are \$1,200 and \$1,400 per kilowatt, respectively. Note that these are 1980 figures.

Conversion of present engines to hydrogen fuel can be accomplished in a few hours. The process involves removing the gasoline tank and installing a new tank capable of holding the slightly heavier hydrogen hydride mixture. A "cracker" would be positioned in the front of the car next to the motor to convert the ammonia-like Hy-Fuel into a gas mainly composed of hydrogen. This gas would flow into a new carburetor to which a fuel regulator is attached. Certain other solenoid valves and vacuum and pressure switches would be wired into the car. The hydrogen-powered vehicle would then be ready to roll.

There is no question that Hy-Fuel works. Schaflander had converted eighteen Chevrolet engines to his revolutionary fuel and had driven them across the continent, getting about twenty miles to the gallon. Tests show that Hy-Fuel's emissions are far cleaner than gasoline, obviating the need for costly emission devices such as catalytic converters which poison roadsides with toxic platinum dust particles. Hy-Fuel is also more stable than gasoline – far less likely to explode in case of an accident.

All this was developed without a dime of federal tax money. In 1978 Schaflander challenged a U.S. House of Representatives Energy Committee to let him test his device on a selected fleet of U.S. Government cars. Although he asked for no up-front money and had promised, "If we can't deliver, we don't get paid," the U.S. Government turned him down.

Schaflander was harassed by oil company-inspired opposition, including telephoned death threats to his 79-year-old mother and quite "official" opposition from the U.S. Postal Service. His company was essentially driven out of business. The whole story is described by a long article that was published in the October 4, 1980 issue of *The Nation*. There is much detail on the suppression, but little data on the actual process used. (Source: "The Hydrogen Alternative: Somebody Doesn't Like Hy-Fuel" Fred J. Cook, *The Nation*, October 4, 1980, pp. 305-311)

John Andrews: Water-to-Gasoline Additive

In May 1974 John Andrews, a Portuguese chemist, demonstrated a water-to-gas additive before Navy officials which allowed ordinary water to be added to gasoline without decreasing the combustibility of the gas and would drive the cost of gasoline down to 2 cents per gallon. When Navy officials finally went to his lab to negotiate for the formula, they found Andrews missing and his lab ransacked.

Phil Stone: Engine Runs on Water

During the 1950's, Phil Stone, a retired Florida college physics professor, had a patent for a device to run an engine on water. The U.S. Government then unfairly classified his patent, and this prevented him from developing his device. The United States Patent Office has classified 5000 patents, an unknown number of which relate to energy. Their helplessly shackled inventors will be jailed for 20 years if they work on, develop, make, sell, write about, or even simply talk about their inventions.

Bill Williams: Joe Cell-Powered Truck

(Excerpted from http://pesn.com/2006/04/13/9600257_Bill_Williams_threatened/, written by Sterling Allen, Pure Energy System News)

Joe Cell Truck Builder Threatened, Destroys Plans --- After announcing that he had successfully built a truck that runs on Joe cell technology, drawing energy from water and orgone energy, Bill Williams said he was approached by two men who demanded that he stop his research, threatening him with dire consequences if he didn't. Others are keeping it alive.

USA -- A couple of weeks ago, Bill Williams told a discussion list that he successfully ran his truck on a device known as the Joe cell. The power was far greater than the regular combustion engine -- and the energy was free.

The Joe cell is said to draw on orgone energy. The fairly simple device uses electrically charged water as the "gate" or medium through which the aetheric energy is drawn from the surroundings and transferred to the automobile engine.

Bill had posted images and rough descriptions, and was in the process of disclosing in greater detail how he had accomplished this, when he was confronted last week by two unidentified individuals who told him to cease all of his alternative energy work or there would be dire consequences.

On April 11, 2006, Bill gave the following account of what happened just a few days after announcing his success.

"I was on my way home Thursday last week [April 6, 2006] and was about 3 miles from the ferry project. I stopped to check the post connection point on the Cell. I was standing in front of my truck, and this late model 2005 or 2006 Ford Explorer pulled up and parked diagonally in front of my truck.

"The driver got out of the rig and walked around in front of their rig and approached me. At about the same time, the passenger opened his door.

"The driver stated that they wanted me to stop working on all forms of alternative energy. He also stated that we know everything about me, my family, and all my projects past and present.

"At about that time the passenger reached and held up a file that was about 2 or so inches thick. He opened it up and showed me telephone transcripts, emails, messages from the groups that I had belonged to.

"They knew where my kids worked, the times they are at work; also my wife's working hours, my grandkids' school, etc. They knew everything.

"The driver said that if I did not stop working on this (he then opened up the left side of his jacket and showed his weapon that was holstered) that there would be other consequences.

"He also stated that he wanted me to post that I was no longer working in this field and to destroy all my work, i.e. cells, drawings, lab journals, everything!

"At that point he walked around and got into the rig. I shut the hood and got the hell out of there. They followed me for about 2 miles and then must have turned off somewhere."

After a few days of contemplation, Bill decided to abide by the demands of those who threatened him. He destroyed the cell and all data and documentation and disabled the website on which he had posted plans. Four days after that incident, Bill wrote the following message to the group:

"I thought I was strong but when illness to the family comes into play, I have failed. I am truly sorry. I will not be working in any form of alternative energy field anymore. [...]"

"I destroyed my device tonight along with my written data and lab notes as per specked out."

Thomas E. Bearden, Ph.D.: Motionless Electromagnetic Generator

In March 2002, Stephen L. Patrick, Thomas E. Bearden, James C. Hayes, Kenneth D. Moore, and James L. Kenny received U.S. Patent No. 6,362,718 for the Motionless Electromagnetic Generator (MEG), a scalar energy device that produces over-unity (AKA "Free Energy"). In conventional terms, the device has a Coefficient of Performance (COP) of 5.0.

Tom Bearden offers this brief description of how the Motionless Electromagnetic Generator works:

First the MEG uses a proven technique (the Aharonov-Bohm effect) which the nanocrystalline core furnishes freely. Recall again that memory characteristics of materials is one thing (from Prigogine) that allows direct and intentional violation of the second law of thermodynamics.

This free initiation of the Aharonov-Bohm effect in turn engineers the surrounding vacuum outside the core, by adding extra energy density to it in the form of a curl-free A-potential. Sharp perturbation (the rise time and decay time) of the input pulses that perturb the core-confined B-field, also perturb that section of the A-potential still in the core, so that a disturbance of dA/dt passes outside the core and on outward into the external altered vacuum with its extra energy.

There the equation $dA/dt = -E$ applies, and so in the external activated space real E-field energy pulses are formed which radiate back into the MEG core area due to the minus sign. This means they travel in opposite direction to the outward-traveling perturbation dA/dt .

Hence this shows the receipt by the MEG of excess electromagnetic energy freely transmitted back into it from the external altered space, which means that the MEG gets considerable excess E-field energy input from the surrounding vacuum. By adjusting perturbation rise times, etc., one can adjust the magnitude of the E-field energy pulses returned to the MEG from the external vacuum environment. Thus the MEG is an asymmetric Maxwellian system of the kind arbitrarily discarded by Lorentz in 1892, and still arbitrarily discarded by present EE departments, professors, and textbooks.

Comprised of strong magnets, coils, nanocrystalline cores, and a controller unit with the electronics, the MEG would be able to power an electric vehicle without battery recharging by the power grid.

For a detailed explanation (including clear drawings) of how the MEG works, see Dr. Bearden's paper "Engineering the Active Vacuum: On the Asymmetrical Aharonov-Bohm Effect and Magnetic Vector Potential A vs. Magnetic Field B." This paper is available at the link <http://www.cheniere.org/techpapers/On%20the%20Aharonov-Bohm%20Effect1.doc>.

In that paper, Dr. Bearden points out that electrical engineers – and even the usual physicist – are unaware of how an electrical circuit is actually "powered". For an explanation and a diagram showing (1) where the energy pouring from the generator terminals actually comes from and how, and (2) why the normal electromagnetic systems self-enforce $COP < 1.0$ by killing their own source of this free energy flow faster than they power their loads, see Figure 2, Operation of a Symmetrical Electrical Power System, in the foregoing paper.

Note that there are more than 20,000 papers in the hard literature on the Aharonov-Bohm effect used by the MEG, and that Aharonov-Bohm effect is quite well proven in physics, both theoretically and experimentally. But the effect does not even exist in the electrical engineering model! Since the MEG is deliberately designed to use that effect, the operation of the MEG can only be understood by one who understands the Aharonov-Bohm effect, its generalization to the Berry phase, and the further generalization to the geometric phase. Specifically, any electrical engineer – using only mainstream electrical engineering theory – can not and will not be able to understand the MEG's operation.

There are several sources of the special nanocrystalline cores which contain the "B" field needed to effectively operate the MEG. Dr. Bearden reports in <http://www.cheniere.org/correspondence/020504.htm> that the nanocrystalline cores originally were purchased as Metglas amorphous alloys from the former Division of Honeywell that made them. He believes that Honeywell actually got them from India. That Division of Honeywell was just about demolished by General Electric (GE) in its sudden attempted buyout of Honeywell (vetoed by the European community). GE suddenly moved it across country, wiping out half its staff and scientists, etc. Then GE withdrew. With the Division in shambles, Honeywell then sold it off to Hitachi. He doesn't know what's happened since then

(Sources: <http://jnaudin.free.fr/meg/megv21.htm>, http://peswiki.com/index.php/Site:LRP:Motionless_Electromagnetic_Generator, and http://peswiki.com/index.php/Site:LRP:The_Suppression_of_the_M.E.G._by_General_Electric. For additional information, order Dr. Bearden's books and videos from www.cheniere.org.)

Thomas E. Bearden, Ph.D. (Reporter): J.P. Morgan Emasculated Electrical Engineering Theory

Thomas E. Bearden, Ph.D., in an August 5, 2007 email to Gary Vesperman and three other energy researchers, offers an insight into what really happened more than a century ago when the foundations were laid for eventually providing electricity to billions of people. In the 1880s and 1890s Nikola Tesla (backed by Westinghouse, a decent man) destroyed the great dreams and preparations of John Pierpont Morgan and Thomas Edison for moving the world into DC electrical power, requiring a DC power plant about every two miles, for example. Instead, with the support of Westinghouse, Tesla gave the world the much more practical AC power systems, where the electric power is much more easily transmitted over transmission lines to distant destinations, without the serious losses as DC transmission entails.

This and Tesla's clearly enunciated intention to give the world clean free electromagnetic energy from the "active medium" itself, brought J. P. Morgan to regard Tesla as his mortal enemy, to be destroyed or curtailed at any cost. Then with the near-bankruptcy of Westinghouse, the only person Tesla could turn to for financing was J. P. Morgan himself. The university attended by Morgan in Germany was the heart of the Hegelian method, which uses the technique of funding and backing one's own enemies as well as one's supporters, to gain influence over – and eventually control of – both. So when Tesla approached Morgan for financing, Morgan readily agreed – but only after Tesla signed over a 51% controlling interest in his (Tesla's) patents.

Tesla did so, and that put control of Tesla, his patents, and his great new project directly under Morgan's control. Morgan then simply advanced Tesla only part of the money needed for his tower project, and when Tesla predictably ran out of funds, Morgan simply refused to give him any more. Very shortly this completely crushed Tesla, reducing him to effective bankruptcy, living in a hotel room, and existing on the patience and literally the charity of others. Tesla never recovered from this blow, but eventually died in that hotel room. Many of Tesla's inventions – such as radio – were stolen from him. After Tesla expired in 1943, Marconi's inventions – e.g. – were officially declared as take-offs of Tesla's inventions by the U.S. Supreme Court.

Isn't it significant that essentially none of our scientific history books credit Tesla for being the actual inventor of the radio, but instead give credit to the theft of Tesla's radio discoveries by Marconi? What does that say about the "official" ethics of the scientific community?

But Morgan was not only ruthless, but thorough. In the latter 1880's, etc., when Tesla was gung ho to give us free energy from the active medium, Morgan also anticipated the future of this "energy freely extracted from the active medium" problem that had suddenly risen in Tesla's work. At the time, there were less than three dozen "electrodynamacists" in the entire world. Maxwell had died in 1879, and those who despised quaternions (Heaviside, Hertz, Gibbs, etc.) immediately chopped Maxwell's 20 quaternion-like equations in 20 unknowns into a very much smaller vector subset containing only four equations. Maxwell's theory was never accepted during his own lifetime, but only begrudgingly and very slowly after (eight or nine years after Maxwell's death) Hertz performed speed-of-light measurements showing Maxwell was correct.

The real Maxwell theory has never been routinely taught in electrical engineering, which contains only a pale shadow of it. For the full Maxwellian theory, see James Clerk Maxwell, "A Dynamical Theory of the Electromagnetic Field," Royal Society Transactions, Vol. CLV, 1865, p 459. Read Dec. 8, 1864. Also in The Scientific Papers of James Clerk Maxwell, 2 vols. bound as one, edited by W. D. Niven, Dover, New York, 1952, Vol. 1, p. 526-597. Two errata are given on the unnumbered page prior to page 1 of Vol. 1. In this paper Maxwell presents his seminal theory of electromagnetism, containing 20 equations in 20 unknowns. His general equations of the electromagnetic field are given in Part III, General Equations of the Electromagnetic Field, p. 554-564. On p. 561, he lists his 20 variables. On p. 562, he summarizes the different subjects of the 20 equations, being three equations each for magnetic force, electric currents, electromotive force, electric elasticity, electric resistance, total currents; and one equation each for free electricity and continuity. Most electrical engineers have never even read Maxwell's theory, even though they were falsely informed that they had studied (and mastered) "Maxwell's theory."

Free download of that original Maxwell theory can be made directly from the ZPE website, at links

http://www.zpenergy.com/downloads/Maxwell_1864_1.pdf
http://www.zpenergy.com/downloads/Maxwell_1864_2.pdf
http://www.zpenergy.com/downloads/Maxwell_1864_3.pdf
http://www.zpenergy.com/downloads/Maxwell_1864_4.pdf
http://www.zpenergy.com/downloads/Maxwell_1864_5.pdf
http://www.zpenergy.com/downloads/Maxwell_1864_6.pdf
<http://www.zpenergy.com/downloads/Diagram.pdf>

Barrett (one of the co-founders of ultrawideband radar) comments on the curtailing of Maxwell's theory as follows:

"[T]he A field [for the potentials] was banished from playing the central role in Maxwell's theory and relegated to being a mathematical (but not physical) auxiliary. This banishment took place during the interpretation of Maxwell's theory... by Heaviside... and Hertz. The 'Maxwell theory' and 'Maxwell's equations' we know today are really the interpretation of Heaviside... Heaviside took the 20 equations of Maxwell and reduced them to the four now known as 'Maxwell's equations'. [Terence W. Barrett, "Electromagnetic Phenomena Not Explained by Maxwell's Equations," A. Lakhtakia, ed., Essays on the Formal Aspects of Electromagnetics Theory, World Scientific Publishing, River Edge, NJ, 1993, p. 11.]

Actually it was worse than that! Heaviside hated potentials (which today we know are primary), thought they were mathematical conveniences only, and that they should be "murdered from the theory". Quoting from B. J. Hunt:

"In a letter to Oliver Lodge in 1893, Heaviside referred to his own work and stated that it represented '....the real and true 'Maxwell' as Maxwell would have done it had he not been humbugged by his vector and scalar potentials.' [B. J. Hunt, *The Maxwellians*, Ph.D. dissertation, The Johns Hopkins University, Baltimore, MD, 1984, p 317].

Heaviside also thought (as did all others at the time) that a thin material fluid ether filled all space, so that nowhere in all the universe was there a point where mass was absent. For that reason, the electrodynamicists – including Heaviside – thought there were force fields E and H in space, when today we know such electromagnetic force fields exist only in charged matter (matter is a component of force, by the equation $F = d/dt(mv)$). Quoting Feynman:

"...in dealing with force the tacit assumption is always made that the force is equal to zero unless some physical body is present... One of the most important characteristics of force is that it has a material origin..." [Richard P. Feynman, Robert B. Leighton, and Matthew Sands, *The Feynman Lectures on Physics*, Addison-Wesley, Reading, MA, Vol. 1, 1964, p. 12-2].

For a commentary on even the unsatisfactory condition of the original Maxwell's theory, Cornille states it this way:

"Even today, Maxwell's equations are given as granted, their validity being justified by experiments. In fact, there is no demonstration of Maxwell's equations from first principles since the mechanical approach used by Maxwell has been abandoned in favor of a new non-mechanical entity: the electromagnetic field. Of course, Maxwell's equation[s] can be obtained from a variational principle but they are derived from an action appropriately chosen in order to recover them. ... Maxwell's equations raise a certain number of fundamental questions which have not been answered in a satisfactory manner to date." [Patrick Cornille, "Inhomogeneous waves and Maxwell's equations," Chapter 4 in *Essays on the formal Aspects of Electromagnetic Theory*, Ed. A. Lakhtakia, World Scientific, 1993, p. 138-139.].

But it made no big splash, and the Heaviside severely truncated equations were "chosen" as the basis equations for the new "electrical engineering" that was beginning to be set up in a few universities here and there. Morgan apparently had the "new" equations (for the new electrical engineering being born) checked via group symmetry (adopted in 1870, so therefore well known by the very few leading electromagnetic scientists of the world at the time) to see if the "new" science/equations contained any of those "systems taking excess free energy from the active medium" – in short, containing any of Maxwell's asymmetrical systems present in the full Maxwellian theory. In short, Morgan was determined not only to suppress Tesla, but also to suppress any future "young Tesla" who might be stimulated to see and develop "free energy from the active medium" Tesla systems. The review of Morgan's scientific advisors was not good; the "new" and truncated Heaviside equations were still not totally symmetrical, which meant some of those dirty old asymmetric Maxwellian systems were still there.

Morgan, of course, just directed that it be "fixed". And Lorentz was the fellow chosen or arranged to do the job; in 1892, Lorentz arbitrarily symmetrized the Heaviside equations – just to "make them easier to solve algebraically", so the story went. He thereby firmly excluded all asymmetrical Maxwellian systems from the standard electrical engineering model, from its very birthing.

Lorentz was a great scientist in his own right, but also was fond of appropriating and using other people's work and taking credit for it himself. For example, the whistle was finally blown on this aspect of Lorentz, by the great electrodynamicist J. D. Jackson. See J. D. Jackson and L. B. Okun, "Historical roots of gauge invariance," *Reviews of Modern Physics*, Vol. 73, July 2001, p. 663-680. Even the symmetrical regauging used by Lorentz (and credited to him generally) was first done by Lorentz (without the "t"), as Jackson and Okun show.

To see the original Lorentz "suppression" paper applying symmetrical regauging, see H. A. Lorentz, "La Théorie électromagnétique de Maxwell et son application aux corps mouvants," [The Electromagnetic Theory of Maxwell and its application to moving bodies], *Arch. Néerl. Sci.*, Vol. 25, 1892, p. 363-552. [Also in H. A. Lorentz, *Collected Papers*, The Hague : Martinus Nijhoff, vol. 2, pp. 168-238, esp. p. 168.] This is the work that Lorentz cites later (in 1895) for his proof of the symmetrical regauging theorems (the two equations of symmetrical regauging).

This is what arbitrarily eliminated (from standard electrical engineering) the use of “Tesla” asymmetrical Maxwellian systems that do receive excess electromagnetic energy freely from the active medium – and thus can function at a coefficient of performance (COP) > 1.0 precisely similar to a windmill-driven electrical power system or a solar panel powered electrical power system. A real system with real losses will always have efficiency (total useful energy or work output divided by the total energy input from all sources) of less than 100%. But if it asymmetrically receives (freely or nearly freely) excess energy from its active environment, then its coefficient of performance (total useful energy or work output divided by the total energy input by the operator only) can permissibly exceed 1.0. No laws of nonequilibrium thermodynamics are violated, as are no laws of physics.

Two persons – Oliver Heaviside and John Poynting – independently and simultaneously discovered the flow of electromagnetic energy through space in the 1880s and early 1890s; before then, the concept does not appear in physics. Poynting only considered a very tiny part of the “total electromagnetic energy flow pouring from the generator terminals and flowing through space outside and along the external conductors (of the external circuit)”. That tiny part is the small fraction of the energy flow – the linear part – that gets diverged into the conductors to “potentialize and power up the electrons” and the external circuit. Heaviside also discovered a giant curled electromagnetic energy flow component in addition to the diverged little component. The nondiverged curled electromagnetic energy flow component is more than a trillion times greater in energy magnitude than the feeble Poynting component.

Well, again it would simply not do (in Morgan’s relentless view) for our young future electrical engineers to know and be taught that the generator actually outputs more than a trillion times as much electromagnetic energy output as the mechanical energy input one furnishes to crank the shaft of the generator. That would mean it would just be a matter of time before some young budding genius would discover how to trick some of that giant curled Heaviside component into diverging into the conductors after all, thus producing Tesla “energy from the external active medium” systems after all.

So again, Morgan would have issued orders to “fix it!”

And so Lorentz was arranged once again to do the dirty work. In 1900 he stated that this giant curled Heaviside component “does nothing”, since it does not interact, and so it “has no physical significance”. And he arbitrarily just integrated the entire energy flow vector (containing both the diverged Poynting energy flow component and the usually nondiverged Heaviside giant curled energy flow component) around a closed surface assumed around any volume element of interest. Thereby Lorentz misinformed us that this nondiverged giant energy flow had “no physical significance” and taught us to just deliberately cancel it as a matter of course.

In his August 16, 2007 email to Gary Vesperman and Leslie Pastor, Thomas Bearden adds:

For additional rigorous mathematical demonstrations, see the following:

M. W. Evans et al., "Explanation of the Motionless Electromagnetic Generator with O(3) Electrodynamics," *Foundations of Physics Letters*, 14(1), Feb. 2001, p. 87-94. Quoting: “...the fundamental operational principle of the MEG is explained using a version of higher symmetry electrodynamics known as O(3) electrodynamics, which ... has been developed extensively in the literature. The theoretical explanation of the MEG with O(3) electrodynamics is straightforward: Magnetic energy is taken directly ex vacua and used to replenish the permanent magnets of the MEG device, which therefore produces a source of energy that, in theory, can be replenished indefinitely from the vacuum. Such a result is incomprehensible in U(1) Maxwell-Heaviside electrodynamics.”

M. W. Evans et al., "Explanation of the Motionless Electromagnetic Generator by Sachs's Theory of Electrodynamics," *Foundations of Physics Letters*, 14(4), 2001, p. 387-393.

M. W. Evans et al., "The Aharonov-Bohm Effect as the Basis of Electromagnetic Energy Inherent in the Vacuum," *Foundations of Physics Letters*, 15(6), Dec. 2002, p. 561-568.

T. E. Bearden, "Extracting and Using Electromagnetic Energy from the Active Vacuum," in M. W. Evans (ed.), *Modern Nonlinear Optics*, Second Edition, 3 vols., Wiley, 2001; Vol. 2, p. 639-698.

A quote of interest is: "This has led to one of the greatest ironies in history: All the hydrocarbons ever burned, all the steam turbines that ever turned the shaft of a generator, all the rivers ever dammed, all the nuclear fuel rods ever consumed, all the windmills and waterwheels, all the solar cells, and all the chemistry in all the batteries ever produced, have not directly delivered a single watt into the external circuit's load. All that incredible fuel consumption and energy extracted from the environment has only been used to continually restore the source dipole that our own closed current loop circuits are deliberately designed to destroy faster than the load is powered."

T. E. Bearden, "Energy from the Active Vacuum: The Motionless Electromagnetic Generator," in M. W. Evans (Ed.), *Modern Nonlinear Optics*, Second Edition, 3-vols., Wiley, 2001; Vol. 2, p. 699-776.

M. W. Evans, T. E. Bearden, and A. Labounsky, "The Most General Form of the Vector Potential in Electrodynamics," *Foundations of Physics Letters*, 15(3), June 2002, p. 245-261.

For a rigorous proof that removing Lorentz's 1892 arbitrary symmetrization of the Heaviside-Maxwell equations does indeed provide usable energy currents from the vacuum, see M. W. Evans et al., "Classical Electrodynamics without the Lorentz Condition: Extracting Energy from the Vacuum," *Physica Scripta*, Vol. 61, 2000, p. 513-517.

To see the horrible falsities (as pointed out by eminent scientists such as Nobelist Feynman) being taught in electrical engineering in all our universities, see my paper "Errors and Omissions in the CEM/EE Model," available at <http://www.cheniere.org/techpapers/CEM%20Errors%20-%20final%20paper%20complete%20w%20longer%20abstract4.doc>. This paper was favorably reviewed by the National Science Foundation; for the NSF letter see <http://www.cheniere.org/references/NSF%20letter%20Bearden.jpg>.

Here is a little exercise that is revealing to think about:

Take a common permanent magnet and sit it on the bench. Lay an electret across it so the E-field of the electret is at right angles to the H-field of the magnet. Then by the ordinary Poynting theory already accepted and contained in every basic electrical engineering textbook, that silly thing sits there and continuously pours out a steady Poynting stream of real electromagnetic energy flow S , given by $S = E \times H$.

The CEM/EE folks just shrug and walk away from that embarrassing problem. A typical comment is one by Buchwald:

"[Poynting's result] implies that a charged capacitor in a constant magnetic field which is not parallel to the electric field is the seat of energy flows even though all macroscopic phenomena are static." [Jed Z. Buchwald, *From Maxwell to Microphysics*, University of Chicago Press, Chicago and London, 1985, p. 44].

He states it, but does not pursue its implications at all.

Scientists such as Van Flandern do point out that a so-called "static" electromagnetic field is actually a nonequilibrium steady state system, comprised of internal parts in continuous and steady motion. Quoting Van Flandern:

"To retain causality, we must distinguish two distinct meanings of the term 'static'. One meaning is unchanging in the sense of no moving parts. The other meaning is sameness from moment to moment by continual replacement of all moving parts. We can visualize this difference by thinking of a waterfall. A frozen waterfall is static in the first sense, and a flowing waterfall is static in the second sense. Both are essentially the same at every moment, yet the latter has moving parts capable of transferring momentum, and is made of entities that propagate. ... So are ... fields for a rigid, stationary source frozen, or are they continually regenerated? Causality seems to require the latter." [Tom Van Flandern, "The speed of gravity – What the experiments say," *Physics Letters A*, Vol. 250, Dec. 21, 1998, p. 8-9].

So there is no problem at all in establishing as large a continual free electromagnetic energy flow as one wishes. Anywhere, anytime. Simply make a dipole, or crossed E and H dipoles, then leave it alone. As Nobelist Lee pointed out, when you have a broken symmetry then something virtual has become observable. In other words, any electromagnetic broken symmetry can and does absorb virtual energy from the vacuum, integrate it coherently into quantum sized particles (photons), and emit those real, observable photons at light speed in all directions. This process – the solution to the long-neglected “source charge problem” – is what produces the steady-state or “static” electromagnetic fields. Such fields are actually continuous, free flows of real, usable electromagnetic energy.

The entire “free energy from the vacuum” problem is simply this: Given incredible “free electromagnetic energy wind” available and automatically provided from every electromagnetic broken symmetry (dipolarity) in the universe, how does one build a proper asymmetric “windmill” to intercept and collect some of that real, free, continuous “electromagnetic energy wind energy” and then separately dissipate it in its loads to power them? All our electrical engineers think, design, and build only symmetrical windmills, which use half their freely collected electromagnetic energy to do nothing but destroy their own source dipolarity furnishing the free wind! The other half is used (in the forward emf region) to power the losses and loads of the external circuit.

So half the “freely collected” energy is normally used (in the EE’s symmetrical circuits and systems) to destroy the wind source itself, and the other half is used to power the external loads and losses. Well, to keep the wind flowing, we have to keep “restoring” the internal dipolarity (broken symmetry) of the generator as fast as it is being destroyed. That is what “cranking the shaft of the generator” actually accomplishes; it doesn’t send a single joule of energy directly out onto the external circuit or power line! Note that the rigorous definition of work is the change of form of energy. When we crank the generator shaft, we input mechanical energy, which once the generator rotates is changed (courtesy of Nikola Tesla!) into rotating magnetic field energy inside the generator itself. In turn, this rotating magnetic field energy is dissipated totally inside the generator, to force opposite charges apart and thus to produce that magic source dipolarity with its broken symmetry. The broken symmetry of this internal dipolarity then absorbs virtual state energy from the seething virtual state vacuum, and transforms it to real, observable photons (real, usable electromagnetic energy) which it continually pours out. It is this stream of real electromagnetic energy flow that pours from the terminals of the generator and along through space outside the external conductors.

A tiny portion of this giant energy flow (the Poynting component) is diverged into the conductors to “power up the electrons” and thus power the circuit. A huge curled giant Heaviside component remains, but (in any special relativistic situation) is not diverged, does not interact, and does nothing.

But the generator actually outputs more than a trillion times as much total electromagnetic energy flow (in both the feeble Poynting electromagnetic energy flow component and the accompanying giant Heaviside curled electromagnetic energy flow component) as the mechanical energy that we physically input to the shaft of the generator.

The knowledge of Heaviside’s giant usually-nondiverged energy flow component is what Morgan also had “scourged” from the theory by Lorentz in 1900, so that all the future electrical engineers would think that they only produce the diverged Poynting component of energy flow and nothing else.

Very good modern classical electrodynamicists continue to ignore any and all curled energy flow components accompanying the Poynting linear flow component. Quoting Jackson :

“...the Poynting vector is arbitrary to the extent that the curl of any vector field can be added to it. Such an added term can, however, have no physical consequences. Hence it is customary to make the specific choice ...” [J. D. Jackson, Classical Electrodynamics, Second Edition, Wiley, 1975, p. 237].

Let us comment: Jackson is quite correct so long as the situation remains special relativistic. In that case, vector analysis holds and the divergence of the curl is zero. The curled giant energy flow component thus does not diverge or interact with anything.

But if the situation is deliberately made general relativistic or deliberately involves a properly synchronized general relativistic operation, then Jackson’s statement is false. In that case, a bit of that giant curled energy flow component does diverge after all, and comes into the circuit to help power it. In optical physics, the negative resonance absorption of the medium (NRAM) phenomenon (released by the Russians in 1967) is just such a process, though that is completely unknown to our optical physicists. But in the optimized narrow frequency experiments using laser input energy, the COP is actually $COP = 18$ as experimentally measured every year in all leading optical physics groups worldwide.

But none of them are allowed to say “excess emission”, but are forced to use the deliberately mind-numbing phrase “negative absorption”. Anyway, we proposed using that NRAM process to build heat amplifiers in steam boilers, so that with closed positive feedback the steam boiler can be made self-powering. This would immediately and dramatically lower the consumption of coal, nuclear fuel rods, natural gas, etc. in most of our electrical power plants already built and deployed. For a crude little paper on it, see Thomas E. Bearden and Kenneth D. Moore, “Increasing the Coefficient of Performance of Electromagnetic Power Systems by Extracting and Using Excess EM Energy from the Heaviside Energy Flow Component”. PPA, filed and obtained in Oct. 2005. Now released into public domain and freely given away to the public domain. It is available at <http://www.cheniere.org/techpapers/PPA%20Increasing%20COP%20by%20addnl%20extractn%20from%20flow1a.DOC>.

As you can see, our electrical engineers are deliberately (and unknowingly) trained to only build symmetrical systems that destroy their free energy wind input faster than they use some of it to power the loads, and that do not do anything “general relativistic” so that a part of that now-unaccounted giant curled Heaviside electromagnetic energy component also gets diverged (and thereby converted into an extra Poynting energy component). In short, our own electrical engineers, professors, and departments self-enforce $COP < 1.0$ performance and are thereby directly responsible for the world energy crisis, giant pollution of the biosphere, and the deaths of hundreds of millions of impoverished peoples world wide!

The thing is this: Our scientific community should fund and permit the bright young theoreticians and bright young professors to tangle with the technical problem of how to go about building asymmetrical interception and powering systems, once they easily assemble a free electromagnetic energy wind source for furnishing the input energy freely from the vacuum. Let them first remove the diabolical Lorentz symmetrization from their present Heaviside equations, and then ponder how to then build a nice “asymmetric windmill” that will intercept and collect some of that freely flowing electromagnetic energy, and will separately use (dissipate) it to power the external loads without disturbing the “crossed dipoles and their broken symmetry”.

Comment by Gary Vesperman: Was John Pierpont Morgan really that sharp a bean-counter?!! In spite of his demonstrated ruthlessness and his exploitation of the genius Nikola Tesla, we would have to give him credit for his conjunction of acute business acumen with his not inconsequential understanding of physics. Morgan left a legacy of energy invention suppression that endures to this day.

Frank Richardson: Magnetic Electrical Generator and Bladeless Steam Turbine

As told to Gary Vesperman by Frank Richardson, during the 1970’s four Nevada Test Site (NTS) technicians helped Frank Richardson, an NTS electrician, invent a magnet-based electrical generator that required no input power and also a bladeless Tesla-type steam turbine.

Richardson’s “Electromagnetic Convertor with Stationary Variable-Reluctance Members” (US Patent No. 4,077,001) uses two pairs of electromagnets to warp a permanent magnet’s magnetic fields back and forth across output field coils to induce a DC output voltage. Dr. Thomas Bearden’s motionless electromagnetic generator (see above) is based on the same principle.

The bladeless steam turbine has a closed-loop cycle that Richardson claimed is far more efficient than the electric motor in terms of converting electrical energy into rotational energy for application to a vehicle’s drive wheels. The water is heated with radio frequencies like a microwave oven into steam that is then forced through two disks in sequence. The electricity for the water heater came from the generator.

The two disks are perforated in such a manner as to prevent cavitation (bubbles) even at high rotational velocity. Since steam offers a 1,000-to-1 expansion ratio compared with gasoline’s expansion ratio of approximately 300 to 1, the turbine is extremely powerful. An 18-inch diameter prototype’s output power was measured at approximately 1,000 horsepower.

A Volkswagen Beetle was outfitted with these inventions and driven around without energy input.

Some people tried to steal these two inventions. Two of the technicians died under suspicious circumstances, and Richardson had to go into hiding until his recent death. It is Gary Vesperman’s understanding that the black helicopter people might have had nothing to do with this situation; just greed.

Gary Vesperman (Reporter): Energy Inventors are Buzzed by Black Helicopters

A few years ago one summer, an energy inventor's house was buzzed twice by a black helicopter. He said they appeared to be an older Hughes model painted black and with no markings. He asked a friend who is an air traffic controller at the local airport. His friend reported no radar sightings. One of the buzzings was witnessed by dozens of people although the inventor himself wasn't home. (Gary Vesperman has since then come across an article in his zero point energy literature which claims that the radar-absorbing coating on black helicopters and also black Stealth fighters and B-2 Stealth bombers is depleted uranium.)

Also about that time the energy inventor and some other people narrowly escaped a flip and crash in a private plane which had a cut on a tire. The cut was then hidden by rolling the plane.

Las Vegas UFO buff Tym Schofield was driving around the desert one year when some black helicopters swooped low over his car and gave him a really good scare. He was on his way home after appearing on a radio talk show.

A female Las Vegas resident met a former black helicopter pilot at a 1995 Christmas party. The pilot had become so disgusted he quit. Subsequently, the driver of a car attempted to run over the ex-pilot and killed his wife instead. Gary Vesperman tried to locate the pilot so he could interview him but was unsuccessful.

Bob Dratch, inventor of the thorium powerpack (see below), reports back in the late 90's during one of the winters he had picked up his son from the bus-stop. He went past his old machine shop which he had in an old farm house and continued up the hill to his house. As Dratch crested the hill top he noticed hovering below the ridgeline out of sight of "radar" from the flatlands a black helicopter with something that looked like a high-powered "shotgun-like" antenna on the nose. The copter was totally silent, black, numberless and pointing this "thing" at his shop. After having dropped off his child at home he went back down to his shop and found all his computers were OFF line, and not booting any more. Had his equipment just gotten zapped with an electromagnetic pulse? Was he being snooped on long range? Who knows?

The town was about 10 miles due west of Golden Colorado, and the mountain they were nearest is called Mount Tom. They were between Mount Tom and Dratch's shop, very close to the hilltop closest to him (within about 500 feet), but about 8 miles SE of the large mountain (Mount Tom), just clearing the hill's ridge and below tree line. He would not have seen them at his shop as at that altitude they were below tree line, but hovering silently. When he crested the hill that was when he was above tree line for a moment, and saw them there. He no longer has his shop at the old location as a few years after that all the water dried up in the wells. He supposes that is just a coincidence.

The black choppers now and then make a point of buzzing him, and/or hovering. But Dratch hasn't had any ground attacks – just this aerial stuff. Generally they tend to appear when he runs tests...

(The two black helicopter stories below were excerpted with permission from Erik Masen's article SUPPRESSION FROM HIGHER UP Inventors Beware! The Deadly Campaign Against Free-energy Devices, *Electrifying Times*, Vol. 8 No. 3 and also in http://www.electrifyingtimes.com/erik_masen_suppression.html.)

At the International Tesla Society conference in 1993, a videotape of an advanced generator utilizing tachyon waves was presented without the inventor's permission. This generator not only produces excess energy, but also exhibits time-warping characteristics. The tape was shown on a Friday afternoon, 3,000 miles from the inventor's home.

The very next day, U.S. Government's Federal Bureau of Investigation (FBI) and Bureau of Alcohol, Tobacco and Firearms (ATE) agents knocked on the inventor's door wanting to see the device. He politely told them no.

The following day, a black helicopter hovered above his house taking pictures of the inside. (These black helicopters and even some satellites apparently now have the capability of photographing every item inside a building.)

On a recent morning talk show featuring the U-2 spy plane, it was revealed that the plane's audio receivers are so sensitive they can pick up ground-level conversations from an altitude of 70,000 feet.

(The black helicopter stories below were told to Gary Vesperman at the 1997 International Tesla Society Symposium in Colorado Springs, Colorado by health physicist John W. Moreland, Ph.D., 1251 Smith Thompson Road, Bethpage, TN 37022 (near Nashville); voice 615-888-3428. Moreland publishes and sells 34 engineering and physics textbooks – mostly old books that he thought ought to be republished and made available. He has accumulated several yards of files on unconventional energy devices.)

It is reportedly possible to approach within a half-mile of a base east of Nashville, Tennessee which houses at least 100 black unmarked helicopters, some black unmarked C-130 transport airplanes, and black unmarked jeeps.

A county commissioner, whose jurisdiction includes Nashville and who owns a farm, became upset with black helicopters flying over his farm at night scaring and scattering his animals. He complained to Congress, the Department of Transportation, Federal Aviation Agency, etc. without satisfaction.

Some years ago, an inventor in another city had his house buzzed a few times by black helicopters. One night during a particularly aggravating buzzing, the inventor shot down the black helicopter which killed both pilots and demolished his house. He was arrested and charged with murder. At a hearing, his lawyer held up a Washington Post newspaper headline “Federal Government Claims Black Helicopters Don’t Exist”. The charges were dropped because black helicopters don’t exist.

So afterwards when another inventor in early June one year at 2 a.m. had his one-story house buzzed by a black helicopter 3 feet above his roof, he went outside with a flashlight and a pistol. He aimed the light at the pilot, ran the light along the fuselage and after finding no identifying numbers, told the pilot he doesn’t exist. He then disabled the tail rotor with his pistol. (He didn’t want to injure the two pilots.) The helicopter took off fishtailing from side to side. Since then he hasn’t been visited by black helicopters.

Black humor? It could be supposed that these two shooting incidents prove that it must conveniently now be legal open season on black unmarked helicopters. Keep in mind though that their pilots are only employees of the U.S. Government (see <http://www.nogw.com/shadow.html>) who are being paid to spy on, harass and buzz targeted American citizens, particularly energy inventors who potentially are able to put large energy industries out of business. Some of these black helicopter pilots may even be wondering about why they are participating in suppression of new energy inventions.

Erik Masen, in his article “Suppression of Quantum Leap Inventors”, *Electrifying Times*, 2007, Vol. 10, No. 2, wrote that some say that black helicopters are part of the Bureau of Alcohol, Firearms, and Tobacco which operates under the U.S. Treasury Department, which in turn operates with the U.S. Federal Reserve, which is a private corporation, which operates with the World Bank, over which the U.S. Government apparently has no jurisdiction. Thus, the black helicopters can do as they please.

Gary Vesperman (Reporter): Shielding Over-Unity Power Converters

A typical radio wave that is radiated out of an antenna comprises of transverse waves of electromagnetic energy. These transverse radio waves oscillate perpendicularly to the axis along which they are traveling.

The zero point energy field is an immensely energetic medium, omnipresent throughout the universe, of random electromagnetic waves with frequencies ranging from near zero to frequencies so extremely high as to be undetectable.

An over-unity power converter generates more output power than the input power it needs to operate. Hence its ratio of output power to input power is greater than one. That is, it is operating at “over-unity”. Its leftover output power is thus available to do useful work for “free”; hence the popular term “free energy” machine.

Some types of over-unity power converters are designed to extract energy from the zero point energy field. What’s interesting is that longitudinal waves of electromagnetic energy are emitted during the energy extraction process. That is, these longitudinal electromagnetic waves oscillate along the axis of their travel, not perpendicular to the axis like transverse radio waves.

Detecting these longitudinal electromagnetic waves requires special sophisticated instruments. The U.S. Government maintains a network of such instruments in orbiting satellites to monitor the entire earth for these signals. (This same network is also employed to usefully detect, locate by triangulation, and report lightning bolts in real-time which helps to justify the network’s enormous expense.)

If a longitudinal electromagnetic signal is picked up, it is assumed that an inventor is experimenting with a working over-unity power converter or generator. The location of the device is triangulated, and the inventor is then “visited”, liquidated or whatever by energy invention suppression hit squads in order to safeguard markets for gasoline and metered centrally generated electricity.

Copper-lined Faraday cages, normally used for shielding radio waves, are not adequate for blocking these signals from over-unity converters of zero point energy. One experimenter has suggested using bismuth.

The all-seeing Big Brother effectiveness of the U.S. Government’s zero point energy extraction detecting and tracking network has been demonstrated by one zero point energy experimenter’s complaint:

“I have not been able to locate any type of material that will shield this type of energy. The best advice is to work underground and operate only for brief periods of time 10 to 15 minutes at random times. Also heavy cloud cover, wind, rain and other thunderstorms are good for masking your experiments.

I had black choppers and power company trucks crawling all over me within 15 minutes when I discovered an over-unity effect in my shop. I think they would have been at my door if I had not shut the unit off when I did. They changed every ground and insulator on all the power poles for miles around my location looking for the source of the energy they had detected.”

This writer, Gary Vesperman, pieced together the above from various sources. David G. Yurth questions its accuracy per his July 7, 2006 email below.

Gary: You may want to consider the following with respect to your descriptions of both radio waves and the ZPE field phenomena.

Radio waves are indeed waves of electromagnetic energy. In some cases they are transverse, and in some cases they oscillate perpendicular to the axis along which they are propagated. But in the case of the CTHA antenna, for example, which is really a magnetic resonance oscillating antenna device, the wave form can be either spherical or hemispherical. In some cases, as in the case of the devices we demonstrated several years ago, the wave form can be narrowed to as little as .1 degree second in a semi-hemispherical form.

In most cases, RF waves radiate in a straight line from the propagation point – that is why, for example, RF devices used during the day have a range that is limited to less than 22 miles [on flat topology], unless repeater towers are provided at key points along the horizon. However, with the CTHA device, particularly when it is used on the surface of large bodies of water, and more particularly when used on the surface of salt water, the hemispherical wave form coheres to the surface of the water and is attenuated at only about 10% the normal rate of RF signals propagated through the air. In addition, because of the nature of water itself, extra low frequency radio waves are the only RF waves that can be relied on to propagate a signal through any appreciable distance of water. However, with the CTHA, this is not true. These devices have been shown to send RF signals through the water at much higher [VHF and UHF] frequencies than any other known devices, with minimal attenuation and virtually no distortion. Why they operate in this way is not known to science in general and to the US Navy in particular.

My notion about this is that the CTHA configuration propagates non-local field effects as well as linear ones. Because the non-local effects are neither understood nor optimized in the current technologies, what we observe is the effect of a non-linear wave propagation device used in applications which are typically linear. The Y-Bias manuscript explains how this works and why it is important.

Finally, the zero point is probably not *an immensely energetic medium, omnipresent throughout the universe, of random electromagnetic waves with frequencies ranging from near zero to frequencies so extremely high as to be undetectable.*

Rather, as the Y-Bias research suggests, the zero point is the interface between the physical vacuum and the 4-D physical universe we live in. It is not something extrinsic to the physical world we observe but is utterly intrinsic at the finest scales of organization. This insight is the reason the Y-Bias information is so important. What it means, for example, is that neither Tom Bearden’s MEG nor Correa’s orgone generator is really operating at the zero point or anywhere near it. Rather, what they are doing is tapping the quantum pump that operates within the organizational structure of all matter and energy at the fourth scale of development to liberate an infinite supply of electrons via one biased voltage schema or another.

What the Heavyside equations and Whittaker's formulation make clear [quaternions] is that every variety of physical material exhibits a quantum oscillating frequency. Modern science has only just begun to understand the importance of this concept so the literature is not yet replete with references to the quantum frequencies of all the elements and their isotopes. Nevertheless, when the quantum frequency of any material can be excited by an outside force which causes it to operate in a narrowly defined local in terms of a harmonic resonance, the dynamic properties of self-organizing criticality kick in to produce exponentially more powerful internal oscillations than would normally occur within the sub-atomic structure of the material.

We know this because when carefully prepared isotopes of certain rare earth materials are intercalated within the crystalline lattice structure of conductive thin films, and then exposed to permanent magnetic fields, the atoms of the isotope produce prodigious amounts of electrical voltage and current continuously, without consuming either the atoms themselves nor the materials within which the atoms are held in stasis in the lattice itself.

We have a prototype engine which is in its third generation now that has been operating continuously for 76 days. The data recorder shows that the power output has remained steady day and night throughout the test period. The mass of the material has not changed one iota in that time and neither has the composition of the substrate, the crystalline material or the original atomic isotopes themselves.

Bearden solved the source charge problem partially when he demonstrated that mass is organized and deconstructed at the zero point with a quantum frequency that absorbs a virtual photon from the physical vacuum and then liberates a real photon when two virtual charge ensembles combine to form the organized datum which is characterized at the second scale of organization. This operation goes on continuously within the heart of every iota of material found everywhere in the universe – it is this fact, born out by the Y-Bias analysis, that gives the lie to the Big Bang Theory. All primary particles were not created at the instant of the Big Bang – instead, everything about the cosmos is being recreated at a quantum rate all the time, at every address in the cosmos, continuously, as part of the autopoietic nature of this physical dimension.

So when any inventor tells you he is generating transverse waves of non-local propagation when tapping the zero point, you can write that research off as fundamentally flawed because the phenomena you are referring to has nothing at all to do with the zero point. --- Dave

(This writer, Gary Vesperman, recently edited David G. Yurth's ground-breaking 153-page physics monograph "Y-Bias and Angularity[©]: The Dynamics of Self-Organizing Criticality from the Zero Point to Infinity". I also edited Yurth's 380-page "Seeing Past the Edge" which explores and ties together such advanced scientific topics as nuclear physics, mind-matter connection, holographic universe, and the torsion field.)

Ph.D. Electrical Engineer: Advanced Form of Plasma-Discharge Energy

An inventor and a Ph.D. electrical engineer from one of our prestigious universities had made a breakthrough on an advanced form of plasma-discharge energy. They hired a hall in a mid-sized town in the U.S. to show off their new discovery. It was an impressive demonstration.

One day, his neighbors told one of them they had seen a black helicopter hovering over his house for several hours while he was away at work. Evidently, it was photographing his technology in the basement. A black van, with windows that you couldn't see into, also staked out their lab.

After three weeks of surveillance, a S.W.A.T. team of six kicked down the lab door, and with axes, destroyed half a million dollar's worth of equipment in one-half hour. The thugs forced the inventors' faces down onto the concrete floor, and, demanding to see the nuclear source, beat the inventors' heads against the concrete until they nearly choked on their own blood. They had no search warrants, just "S.W.A.T. TEAM" printed on the backs of their brownish uniforms.

The inventors were told to cease all further development, and the apartments owned by one of the inventors were condemned. The tenants were ordered to leave, and the Ph.D. electrical engineer is still being harassed by the IRS to this day.

Gary Vesperman (Reporter): Six CIA Agents at 1996 Tesla Society Symposium

When this writer attended an International Tesla Society Symposium in Colorado Springs, Colorado in 1996, I was told that the inventor of a new type of carburetor that can triple the mileage of a car has had his social security number taken away. Also attending the convention were at least one U.S. Government's Central Intelligence Agency (CIA) agent, identified by someone standing in the registration line behind him who happened to see his identification card, and another five CIA agents.

One of the CIA agents threatened a co-inventor of an electrical generator utilizing two types of radioactive waste as he was walking up to the podium to give his speech. However, this story needs further verification.

Gary Vesperman (Reporter): US versus Japanese Support of Cold Fusion

The leading cold fusion community website is <http://www.lenr-canr.org/>. The site features a library of papers on Low-Energy Nuclear Reactions (LENR) – also known as cold fusion. Chemically Assisted Nuclear Reactions (CANR) is another term for this phenomenon. The site features a library of more than 500 original scientific papers in Acrobat format, reprinted with permission from the authors and publishers. The papers are linked to a bibliography of over 3,000 journal papers, news articles and books about LENR.

In Japan, inventors are treated as national heroes and are lavishly supported. The Japanese government's annual R & D budget in cold fusion had been \$100 million per year (since greatly reduced). Japan has issued over 100 low-energy nuclear reaction patents. In contrast the U.S. Patent Office has so far approved only one cold fusion patent application out of 300. (This statistic is possibly out-of-date.)

Stanley Pons and Martin Fleischman: Cold Fusion

Much misrepresentation and falsification of evidence happened after Stanley Pons and Martin Fleischman announced in March 1989 that they had achieved fusion by electrochemical means. Several influential US laboratories (California Institute of Technology, Massachusetts Institute of Technology (MIT), Yale/Brookhaven) reported negative results on cold fusion that were based on shoddy experimental work and a misunderstanding of the Pons-Fleischmann claims. They gave a hostile hot fusion establishment the excuse it needed to conclude that the claims made by Pons and Fleischmann were bogus. In November 1989, a U.S. Department of Energy panel concluded the same after a shallow mock investigation of only seven months. Eugene F. Mallove, Sc.D., was the Chief Science Writer at the MIT News Office at the time. He played a part in exposing the MIT report as mistaken, possibly fraudulent, and resigned in protest over it in 1991. ... It is ironic that each of these negative results were themselves the product of the kind of low-quality work of which Fleischmann and Pons were accused. The difference was that the reports said what the hot fusion community wanted to hear. This was the legacy of the 1989 ERAB report, but that legacy must now be reversed – and it will be, however long that takes.

Dr. Mallove later founded and edited/published Infinite Energy magazine until in May 16, 2005 he was robbed and bludgeoned to death by a pair of pathetic drug addicts. The 1999 Issue 24 of Infinite Energy, in its 57-page special report titled "MIT and Cold Fusion: A Special Report", extensively documented that MIT violated the trust of its donors, employees and the public in the integrity of its scientific research into cold fusion.

In addition to suppressing cold fusion, MIT has also suppressed its solid-state lithium-ion roll-to-roll battery patents which would increase the efficiency and performance and lower the cost of electric and hybrid vehicles. See Remy Chevalier's report below on NiMH and solid-state lithium-ion batteries.

Chevalier does ask "Is it because MIT is cashing checks from the Rockefeller Bros. and the Ford Foundation?" So he may be hinting that, possibly based on inside information, MIT's suppression of cold fusion and its battery patents is due to its secret protection of the oil/auto monopoly.

Most people, including physicists, continue to be unaware that low-energy nuclear reactions are real, and have been verified in hundreds of experiments throughout the 1990s. In February 2002, the Space and Naval Warfare Systems Center of the United State Navy in San Diego released a 310-page report titled "Thermal and Nuclear Aspects of the Pd/D₂O System" that discusses the overwhelming experimental evidence that the cold fusion effect indeed exists. Dr. Frank E. Gordon, the head of the center's Navigation and Applied Sciences Department, writes in the foreword:

That "cold fusion" continues to be ignored by the scientific establishment, and, to add insult to injury, is being used synonymously with "bad science", usually in such expressions as "the cold fusion debacle", constitutes one of the greatest scientific scandals in human history, and a human tragedy. While wars over oil are being fought, a potential source of energy that could solve humanity's energy problems for all eternity is being ignored by all but a small community of researchers. At the same time, the dead-end "hot fusion" program continues to receive billions of dollars in public funds. If there is a scandal associated with cold fusion, this is it. (Source: "The Suppression of Inconvenient Facts in Physics – The Cold Fusion Scandal - Rochus Börner, Ph.D., *Cold Fusion Times*, Vol 12 No 2, August 2005. See also <http://www.std.com/~mica/cft.html>. Excerpted from "The Suppression of Inconvenient Facts in Physics" <http://www.suppressedscience.net/physics.html>. This paper compiles instances of suppression of honest examination of flaws in some of the major theories held inviolable by Western science bureaucracies. In addition to the supposed impossibility of cold fusion and low-energy transmutation, mainstream Western physicists hotly defend, in spite of "inconvenient facts in physics", relativity theory, the constancy of the speed of light, absence of signals traveling faster than the speed of light, quantum theory, big bang cosmology, impossibility of anti-gravity, commercial hot fusion, and the second law of thermodynamics.)

Mitchell Swartz: U.S. Patent Office Blocks Cold Fusion Patents

Mitchell R. Swartz, MD, Sc.D, has four electrical engineering degrees from Massachusetts Institute of Technology. He is an engineer and physician who has been inventing for decades, and has received many patents. Two of his previous patent applications went to the Board of Patent Appeals and were subsequently issued.

Yet, even with that extensive experience, never before had Swartz seen such misbehavior, systematic prejudice, conspiracy and disingenuous statements as has been demonstrated by the U.S. Patent Office regarding several of his patent applications involving lattice-assisted nuclear reactions, and devices which measure conditions leading to such reactions (often referred to as "cold fusion").

Regarding cold fusion, it is a real science, and Swartz and his fellow researchers have conducted solid, meticulous research for almost two decades. He recently gave lectures to the Defense Threat Reduction Agency and the Naval Research Laboratory, both of which recognized the utility of his work in cold fusion. No one from either erudite group (more than a hundred scientists and engineers) gave even one iota of the disparagement which, in stark contrast, has been doled out from the Patent Office without foundation on a weekly or monthly basis continually for more than two decades. Along with the disparagement, the Patent Office has been disingenuous to the federal courts and the Board of Patent Appeals, and has demonstrated not only a conflict of interest but also salient improper behavior.

The egregious behavior of the Patent Office with respect to cold fusion patent applications has ignored the U.S. Constitution and Congress' directive to "encourage progress and to encourage ingenuity with patentable statutory subject matter to include anything under the sun that is made by man". Supporting said Congressional directive, attention is directed to the fact that issuing a patent would normally be mandated because these processes involve the loading of heavy hydrogen into palladium and its generation to form helium and heat. Such transformation has been declared patentable by the federal courts.

The Patent Office's use of a two-tiered system to chronically discriminate against cold fusion violates many federal laws. Out of more than 300 cold fusion patent applications, the Patent Office has issued only ONE patent – and that single patent is believed to be the Patent Office's accident/mistake.

To illustrate exactly how the Patent Office methodically destroys cold fusion patent applications (and probably many other energy patent applications), Swartz describes two patent applications of his which had nothing to do with the cold fusion process directly, but were in fact methods of improving technologies of measuring loading of hydrogen into metals and of measuring heat production (calorimetry). They both just happen to be useful to cold fusion. The mere hint of application to cold fusion at the Patent Office was enough to warrant (as they see it) harassment, discrimination, and obvious deviation from normal procedure.

The Patent Office concocted several false reasons to scuttle his applications. For example, the Patent Office falsely claimed that Swartz had purported that there was "excess heat" in the invention of a method for improving the measurement of loading of hydrogen into metal. However, those two words were never even mentioned in the patent application. Swartz pointed out to the Patent Office their error, who then studiously ignored his Affidavit – timely filed and supported with many other Declarations supporting him.

The Patent Office's Decision to deny the calorimetry patent application refers to "cold fusion" eighty-six (86) times by inaccurately substituting the words "cold fusion" for the words and phrases "heat production", "activity", "electric power drive", "thermally monitoring", "thermal output", "optimum drive condition", and even for "multiring calorimeter".

Showing systematically hostile, abusive behavior to Swartz and his patent applications, the Patent Office would frequently ignore and not even officially log exhibits and declarations. For example, the Patent Office denied the validity and workability of his two inventions in spite of substantial peer-reviewed documentation of careful measured, professionally witnessed experimental results of actually working prototypes. The Patent Office was able to back up such denials simply by not bothering to log pertinent documents.

To avoid responding to what was filed which is actually required by law and custom, the Patent Office brazenly relied upon reference to art irrelevant to the actual specifications and claims. Responding to the initial denial of his patent application for a vibrating electrode for measuring the loading of hydrogen into metals, Swartz appealed to the Board of Patent Appeal. In their decision to again deny his patent application, the Board's Decision incredibly included only two (2) sentences pertaining to the actual invention. The remainder of the Decision's 28 pages comprised of a stale, totally irrelevant carbon copy attack on cold fusion and Drs. Pons and Fleischmann. This has been one of the Patent Office's typical distraction processes.

The Patent Office has routinely made many false statements in federal documents. For example, they falsely stated once "there is no disclosure..." involving temperature, and again for voltage. Yet the applications do discuss temperature or voltage, and Swartz in his July 30, 2007 letter to Gary Vesperman cited the actual pages where these parameters were discussed more than once.

These two inventions are only two of more than a dozen patent applications Swartz submitted to the Patent Office where the response has been disingenuousness, obstruction, and failure by the Patent Office to abide by a uniform standard consistent with their own rules.

In summary, it is important to remember that this is not an issue of a difference of opinion; it is about a two-tiered system to enable chronic discrimination (suppression) against cold fusion and probably many other energy inventions. It is about an agency of the U.S. Government thumbing their noses at the U.S. Constitution, at the U.S. Congress, at American security, and at American citizens. It is about an agency "losing" checks, "losing" pleadings, "losing" Exhibits, and failing to answer Declarations and pleadings over seventeen years.

The Patent Office remains quite comfortable and shameless as it viciously ignores Article I, Section 8 of the U.S. Constitution, the explicit directives of the U.S. Congress which funds it, and even its own rules. It is egregious and odious that some in the Patent Office use systematic disingenuity to rob inventors, and more importantly America itself of these American-crafted energy-related inventions. The cover-up of cold fusion is complete, as the applications are now transferred overseas to hurt the United States of America.

(Source: In his July 30, 2007 letter to Gary Vesperman, Mitchell Swartz backs up his allegations with specific citations of law, reference to ~140 pounds of over 300 indisputable papers submitted as evidence, legal briefs, etc. Swartz also mailed to Vesperman the August 2005 issue of *Cold Fusion Times* and a copy of a 39-page Petition to the U.S. Supreme Court for a Writ of Certiorari appealing a negative decision by the Board of Patent Appeals and Interferences. Having never before seen a U.S. Supreme Court legal document, I found the Petition fascinating to skim through. For instance, I counted 62 references to previous cases. I used to work as a technical writer preparing computer manuals for 18 Silicon Valley companies. The materials Swartz mailed to me confirm the suspicion I have had for a long time that patents demand the ultimate in technical writing.)

Robert Bass: Low-Energy Nuclear Transmutation

From: Don Quixote II <donquixote@radix.net>
To: Sir Arthur C. Clarke <blenheim@sri.lanka.net>
Date: Saturday, November 25, 2000 8:07 AM
Subject: A WARNING? My micropellet proposal to Japanese government

Have 3 people been assassinated because of the Cincinnati Group's discovery of a low-energy nuclear transmutation process that can be used, e.g., for radioactive waste remediation?

The original 14 addressees are all editors or investigative reporters

From: Bass, Robert W (IDS)

To: Adil Shamoo ; Barbara DelloRusso ; Eugene F. Mallove ; George Miley ; Hal Fox ; Jean-Francois Cazorla ; Jed Rothwell ; Jim Wilson ; Mitchell Swartz ; Pat Bailey ; Patrick Bailey ; Charles B. Stevens ; Elijah C. Boyd ; Marjorie Hecht

Cc: 'Xing-Zhong Li'

Sent: Friday, November 24, 2000 6:50 PM

Subject: My micropellet proposal to Japanese government

PREFACE: It is readily documented that the CIA and the KGB and the Mossad, etc. all have "sprays" which can be sprayed upon someone and cause him to die of apparently natural causes. One famous case occurred (not long after Chris Tinsley's death) in which Mossad agents were caught red-handed spraying a Hamas activist in Jordan, and King Hussein told the Israeli Prime Minister that if they didn't send the antidote quick there would be hell to pay; but it wasn't the Mossad which sent the antidote to Jordan, it was the CIA! (They sent a doctor from the Mayo clinic [who had been previously accused of being a collaborator with the CIA] to revive the victim.) (The "Hamas activist" was apparently Hamas' Syria-based political chief, Khaled Mashaal. As Mashaal lay dying in a Jordanian hospital, King Hussein pressured Israel to provide the antidote in return for releasing the Mossad agents. Gary Vesperman)

So much for people who say that political assassinations by democratic governments are paranoid fantasies.

Hal Fox,

Dr. Li approached me semi-publicly after the American Nuclear Society (ANS) meeting, where he heard me talk about the CG's LENT process. He said that he hadn't wanted to spoil my presentation by saying anything negative, but he wanted ME to know that he himself did NOT believe the CG claims and that he could NOT confirm the claims based on his own experience and that yet he liked me and wanted me to know "the truth." (By the way, did you know that Dr. Li has 35 Ph.D.'s working for him full-time on cold fusion in China with Chinese government support?!!)

Dr. Li said that he had gone to your lab in Utah and watched you and Dr. Jin run the experiment with a "good" gamma ray detector. However, he claims that when the thorium begins to precipitate out, the solid angle of the detector remains unchanged, but the thorium is moving out of that fixed solid angle, so that the radioactivity SEEMS to be decreasing but it is a false alarm.

He said that he took the "before & after" fluids that you gave him back to China and had them tested but with negative results. (But Li did admit that the straight-line graph I showed could not be explained by his negative assumptions and was "affirmative evidence on the side of the CG.")

Don Holloman of CG says that the 7-man team of Francesco Celani et al in Italy tested the CG LENT-1 device so thoroughly that "data reduction" took 37 volunteer undergraduates "months" to complete. In their publication they claim that they achieved both complete "radiometric balance" AND complete "chemical balance" of the before-process and after-process results.

However, Celani's boss died in midlife of alleged "natural causes". And you know that Stan Gleeson of the Cincinnati Group seemed to be perfectly well when he suddenly died at age 48 of "a stroke." George Miley told me that when at ICCF-8 he asked Celani why he didn't follow through on this type of LENT work (which Chris Tinsley was starting in England [having emailed me about Stan's open-beaker LENT test] just before he dropped dead at age ~50 of "natural causes"), the reply of Celani was: "THREE PEOPLE have died, and I don't want to be the fourth!" George Miley thought that Celani was talking about radiation-sickness danger, but that is not what Celani has in mind! The proof that Celani is open to conspiracy theories is that he is on the masthead of the LaRouche magazine and *they* don't merely *suspect* conspiracy, they have been *jailed* by a U.S. Government conspiracy!

Lawrence Hecht shook my hand at the American Nuclear Society meeting after having just got out on parole after 5 years of a multi-decades sentence for "selling securities without a license" which was not [even] a crime in VA when he sold "political loans" to LaRouche supporters but [despite that] the Secretary of State of VA (who 2 days later was made a Judge as payoff for her cooperation) after studying the matter for 2 weeks decided that Political Loans are indeed 'securities.' (One of Hecht's colleagues is still in jail [illegally] with a 77-year sentence.)

The barbaric nature of a 77-year sentence for a technical infraction is self-evidently PROOF of evil at work: Pres. George Bush's stockbroker brother [Neil Bush of Silverado Bank in Colorado] was REALLY guilty of the same infraction, but he was merely *fined* \$1,000 and told to "be more careful" and "don't do it again"!

I feel that my own life has been threatened in writing, indirectly by the British government. Here's why: Nobel Laureate Brian Josephson agreed to show at the historic Cavendish Lab the Mallove cold fusion video which I had hand-carried to him. Dr. Josephson even published in Gene's Infinite Energy magazine a *letter* saying he was going to show the video publicly!

But when there was a conference there and many important scientists present, suddenly Josephson reneged! He told me in writing that he had first showed the video privately to a Very Important Person (I suspect Sir Brian Pippard, J's own teacher, after whom TWO buildings at Cambridge are named!); then he, Josephson, was "convinced" by said VIP that it is "for the best" that the public be "allowed to continue to believe" that the whole CF/LENR thing was a delusion!! I tried to get J to say why *he* had agreed. He replied (with copies of his email to me both to Gene and to Yeong Kim at Purdue) that it was for reasons of military security; "they" are afraid that terrorists or rogue nations will learn how to make vest-pocket H-bombs (This is why physicist Fred Zimmerman of the US State Dept. is helping Park with his campaign to outlaw cold fusion meetings.).

When I replied to J that my own theory of deuterium crystals could be used to make "fusion micro-pellets" or "micro-bombs" and that I had sent a copy of my proposal to the Japanese government before they terminated their NHE program, J replied to me that I had better "keep your bright ideas to yourself".

In case I pass away prematurely of "natural causes" I am going to copy the preceding paragraph and send a copy to Gene Mallove and include below a copy of my "microbomb" proposal to the Japanese government. My MSD "bright idea" which J says I should keep to myself has been spread all over the world by Internet since late 1997. So it's too late to suppress the idea by suppressing me.

Best personal regards,
Bob

Dr. Bass is an unusually innovative physicist. Hot fusion requires millions of volts or the equivalent. Hal Fox's cold fusion apparatus requires almost 5,000 volts. Bass's process only takes 17.5 volts to ignite!

Bob Dratch: Thorium Powerpack

Bob Dratch's thorium powerpack would generate electricity at approximately one-tenth of the cost of current methods of producing electricity. Thorium is sufficiently abundant that the entire planet can be powered for millennia. After ten years of continuous operation, a trace amount of U-233 is produced. U-233 recovery to re-purify the thorium is easily accomplished. Thorium thus lasts a long time when recycled and consequently is a very efficient energy source. After extraction from ore, thorium does not require energy-intensive enrichment as is the case with uranium.

A thorium-powered reactor is inherently safe. It doesn't run the risk of "meltdown" or explosion nor can even a dirty bomb be created. Its nuclear reaction simply stops when its neutron exciter is turned off.

The simplest and smallest "table top-sized" neutron exciter design is something close to the size of a 4-D cell flashlight, and starts at about 500-kilovolt neutron output. In fact this smallest most cost-effective system can run off 4 D cells for its power.

A thorium powerpack's neutron excitor does not use radioactive flux components as conventionally done for portable systems. Instead it relies on Dratch's invention of a novel method of resonant phonon pair cleavage using specifically designed nuclear lattice holo-forms (holographic waveforms) to induce neutron imbalance in a host atom where the host atom then attempts to establish "balance" through the liberation of neutrons. Dratch demonstrated the first model of this novel design back in 1966.

Commercial thorium powerpacks can be developed with 50 or 100 kilowatts of output for home use, and up to 1 megawatt for industrial use. They actually are "power amplifiers" with power outputs of 60 times over input power. Maintenance would be minimal.

Predictably, Dratch complains of harassment and even death threats for nearly three decades. He and his family do not enjoy any peace or security, and the police and district attorneys are allowing the threats to continue. That is what really stinks. It seems like there is more than meets the eye behind the scenes going on.

The same death threats and suppression are applying to every piece of technology Dratch has been working on, not just the thorium system. The thorium system has the most impact he believes to the cartels. Dratch had one small section on cold-fusion, which he had published before Pons et al did theirs, and again it used properly shaped sonic fields to do the separation. The scanning system was the basis again for obtaining the proper waveform patterns.

Dratch supposes his problems appeared after he demonstrated his inventions at the Global Sciences Conference and during his workshops since the late 1980's. He has some ideas about who the perpetrators are on the international scene, but nothing really firm. It does tie into Russia and the Middle East. At one point during an early workshop there was a Chinese scientist attending, who worked for the Chinese government and identified himself as such.

To develop his driving patterns for the neutron generation function Dratch uses his scanning system which seemed to have been the initial crux of where the recent bout of suppression started (that was pioneered in 1985, developed by 1988, and in full use by 1990).

Dratch unfortunately has a few more stories about being harassed and death threatened to him and his family by stalkers trying to get proprietary technologies. One stalker has been arrested and taken off his property. The stalkers got away without being brought to justice. The courts instead wanted to cite Dratch in contempt for dare showing that the stalkers were harassing and threatening him. Since that time back in 1992 the same stalking has gone on; there has been email and phone harassment; and the DA's office and police don't do a thing.

Dratch writes about his technologies on his website <http://www.bob-dratch.org>. Among the topics Dratch covers are energy stuff, anti-gravity stuff and consciousness altering stuff.

The earliest suppression was when Dratch's patent application was stolen out of the patent examiners' room and handed off to cronies to develop and exploit. Dratch was the one who designed the equations and concept of the Global Positioning System (GPS) – that was back in the very early 1970's. As best as Dratch can determine the Department of Defense was who the information he submitted at the Patent Office was directed to. That loss and damages is insurmountable to him. He has proof that his equations which were submitted at that time during filing are the same equations used to this day for the GPS equation. Tracing the evolution of GPS will reveal all the parties involved if one can get past the suppression and cover-ups. It then went to a private professional working for the U.S. Government for their own version of the "patent" and assigned it back to the government. In the early 1970's Dratch was offered \$150K by them to sell out to them. He refused saying this is worth billions. Little did he know it was worth trillions.

In the mid-1980's Dratch designed a bio-sensory system that seemed quite capable of sampling fields and generating data signatures making up that object scanned. He continued to evolve the technology. It took on many forms. In about early 2001, he was contacted by the U.S. Air Force to modify that system to locate underground unexploded ordinance. The USAF got at his expense about \$180K worth of consulting and demonstrations doing a bench test showing that his technology would work. They promised a series of further steps leading to contracts. They then disappeared after they apparently felt they had enough "proof" that the concept works. Dratch subsequently was told that they had handed over the research he did to a professor in Denver who to this day still hasn't solved the missing pieces that they weren't able to figure out.

After having given a demonstration of the sensory technology in the early 1990's Dratch was stalked, harassed, and death threats were made to him and his family to the tune of "Give them the technology or else". At one point two of the stalkers came on his property armed with knives and were trying to either kill him or his family, to carry out their threat. The sheriff came and hauled them off. When the trial came up, the judge let them WALK out free with no penalty; just a slap saying don't bother Mr. Dratch again. The judge threatened Dratch with contempt of court for having even brought this to his attention. That was in 1992. Since then Dratch has been regularly harassed and continually threatened. The police still refuse to go after the stalker and threatener. They are using extortion now as the current level of threat. Dratch has been to the DA's office of two states, and been in contact with numbers of police officers to no avail. The threats and harassment continues to this day including making complaints to the phone company who do nothing to stop such when they use the telephones.

Over the last two years Dratch has been working to develop a very unique and powerful handheld and truck-mounted sensor capable of discovering "Saddam's weapons of mass destruction" as well as many other chemical and biological weapons systems. Providing assistance, a former military officer has tried to retrieve documents which were available to any contractor. But Dratch and the officer were prohibited as they aren't part of their crony system of preferred contractors. They needed specific signatures which the U.S. Government has on hand to calibrate their system to what it had to look for (the chemical agents). Having the signature isn't the formula, it is a roadmap that says contamination or a toxic situation is present. So troops and civilians are prevented from having Dratch's technology in a low-cost form.

After having spoken enough about the innovation, one of the crony groups has published that they have a working sensor based on the technology that Dratch had divulged to the former military officer, and that they are going to charge big bucks for that innovation. So that is suppression again of getting technologies out in a way where Dratch can carry out more work.

IPMS: Thorium-227 Electricity Generator

The I.N. Frantsevich Institute for Problems of Materials Science (IPMS), Kiev, Ukraine, from 1951 through 1991 secretly employed 6600 of the most brilliant theoretical physicists in the entire Soviet Union to work for nearly 50 years with complete freedom. They were able to develop whole new sciences, technologies and materials unknown in the West.

Their models of non-linear quantum mechanics, plasma physics, atomic engineering, nuclear physics and related mathematical and theoretical constructs, which made their development possible, are so unique that they challenge the validity of the most fundamental assumptions embodied in the Copenhagen Interpretation model currently held in general acceptance in the West.

For example, Western-developed particle/wave quantum mechanics is described by Einstein's $E = MC^2$. The Soviet nonlinear model of quantum mechanics is described by the formula $E = M_{KV}$ [Energy = Mass @ rest as a function of a mathematical constant].

Einstein's theory of relativity assumes that the speed of light is constant. However, measurements have shown that the speed of light has slowed down 7 per cent over the past two centuries. (See http://worldnetdaily.com/news/article.asp?ARTICLE_ID=39733.) Einstein's famous equation is therefore not based on the real world of peer-reviewed experimental results. Consequently the more correct Soviet model has enabled numerous technical advances not even dreamed of by Western science.

Among several energy inventions developed by the IPMS are free-standing thorium-227 isotope electric power generating plants. They can be small enough to power a single home and large enough to power whole communities. They also can operate for up to 18 years without ever requiring refueling or maintenance.

Arrangements to commercialize these useful energy inventions by joint ventures of the IPMS and more than a dozen private sector companies were repeatedly sabotaged by the U.S. Government's Defense Intelligence Agency and others. (Source: David G. Yurth, *The Anthropos Files: Tales of Quantum Physics from Another World – 2nd Edition*, 2007)

Howard Rory Johnson: Magnatron – Light-Activated Cold Fusion Magnetic Motor

During the late 1970's Howard Rory Johnson, a brilliant inventor in Elgin, Illinois, combined light-activated cold fusion with a new type of magnetic motor into a "Magnatron". His prototype Magnatron produced 525 horsepower but only weighed 475 pounds. It could propel a large truck or bus 100,000 miles on about 17 ounces of deuterium and 1.5 ounces of gallium before being recharged. This was years before either Pons and Fleischman or Dr. James Patterson entered the scene with their cold-fusion technology.

Johnson discovered the light-activated cold fusion portion of the Magnatron by accident when as he was developing a new type of electronic circuit using deuterium oxide and gallium, he noticed the two materials were producing energy on their own. He could not figure out what was triggering the energy production for some time until he finally discovered it was light.

The Magnatron's flow of deuterium (an isotope of hydrogen) is controlled by magnetic tunnels. At the point where the deuterium strikes the gallium (a heavy metal electron donor), a beam of light from a diffraction prism forces their fusion. That controlled reaction results in the fusion of two atoms forming a new atom. In the process, electricity is released, and that is what powers the magnetic motor. The Magnatron is sealed, however, so 'light' is provided from photon energy produced from coils tied directly to the motor. It is more or less a pulse-generated system.

A photon is a football-shaped particle of electromagnetic wave energy. Its energy content is a product of its frequency f and Planck's constant h . When an electron in orbit around the nucleus of an atom drops to a lower, less energetic orbit, a photon containing the energy equivalent to the electron's energy drop is emitted. This explains why light and other forms of electromagnetic energy such as gamma rays and radar are sometimes observed as particles and other times as waves. The heated filament of a light bulb is an example of photon production.

There is no way to explain, using contemporary electrical theory, how his relatively small motor could produce such tremendous horsepower. Utilizing his own new electrical-magnetic energy theory, involving a process he called "attract-attract", Johnson exploited the magnetic field. He used the top and bottom rotors in his motor. First, the top rotor attracted, released; then the bottom rotor attracted, released. The action of attraction, alternating between upper and lower magnets, used the windings to complete the attract field.

Robert Nelson's compilation of articles about the Magnatron provides much more technical detail on the Magnatron than the foregoing. (See <http://www.rexresearch.com/magnatron/magnatron.htm>.)

Johnson constructed his prototype Magnatron's 525-horsepower magnetic motor without any of the hardware that is presently used in present state-of-the-art electric motors. Conventional motors use the accepted principle of attract-repel, an energy form that doesn't utilize the magnetic field to its greatest advantage. For comparison, a typical 500-horsepower electric motor has wires exiting it that are the size of a garden hose.

The sealed self-contained Magnatron has no wires. Thus, other than the Magnatron's infrequent refueling with small amounts of deuterium and gallium, the stand-alone Magnatron uses no input power. The Magnatron's entire output power is conveyed by its magnetic motor's rotating shaft.

Fuel for the Magnatron is plentiful: deuterium is derived from water, and gallium is extracted from abundant aluminum bauxite. Commercially available pure gallium is still scarce and expensive. It may well be possible, however, to cheaply transmute another less expensive element into gallium. See Gary Vesperman's list of over two dozen methods of neutralizing radioactive waste in <http://iiic.de/docs/GVComparison.htm> which includes possible transmutation methods.

The Magnatron uses no fossil fuel in its operation, and it emits no pollution. The magnetic motor's RPM is 8,000 with a gear ratio of 2:1. Lubrication for the sealed motor is synthetic motor oil which does not need changing and does not need a filter, because foreign materials such as carbon and varnish are not introduced into the system, as they are in the internal combustion piston engine.

This writer, Gary Vesperman, attended the 3rd International Symposium on New Energy in Denver, CO (April 25-28, 1996). I remember being impressed by Gerald Orłowski's lecture "Magnatron, Fusion Magnetic Motor", during which he provided substantial technical information on the Magnatron.

Orłowski reported that, "Some inside information revealed that OPEC had been keeping track of all competitive technology", and Johnson was #1 on their hit list! Johnson was about to manufacture the motors through a nationwide dealership. Some motors still exist, but the owner wants several million dollars for them."

This writer Gary Vesperman knows of very few inventions of new energy sources which are reasonably large stand-alone energy producers. Besides the Magnatron, they include Oleg Gritskevitch's hydromagnetic dynamo, and Electron Power Systems' micro-fusion reactor, which employs stable high-density plasma electron spiral toroids. Almost all inventions of new energy sources are, or claimed to be, relatively small over-unity power converters that convert input power to greater amounts of output power. Bob Dratch's thorium powerpack is an exception (see above).

At the September 14, 2005 public meeting in Green Valley Ranch casino regarding the proposed Regional Fixed Guideway traversing Las Vegas, Nevada, this writer Gary Vesperman submitted comments suggesting possible power sources for the train, including descriptions of the hydromagnetic dynamo and the micro-fusion reactor (<http://www.rtcsonthernnevada.com/rfg/documents/September2005PublicMeetingMinutes.pdf>, pp. 19-77).

No wonder the Magnatron's inventor, Rory Johnson, was rumored to have been "Number One" on Organization of Petroleum Exporting Countries (OPEC)'s hit list.

The following is an excerpt, slightly edited, from Orlowski's lecture transcript where he tells about his unwitting personal involvement with the U.S. Government's suppression of the Magnatron:

"After I saw the Magnatron motor, my life changed. I was no longer a happy camper working by myself in a wonderful, fully equipped research machine shop for the Greyhound/Armour Corporation in Arizona. While on a business trip, I saw this motor running in the Magnetron, Inc.'s showroom located in Egin, Illinois.

"During my 15 years of electric motor repair, among the hundreds of motors I repaired, I rewound a 500 HP electric motor. That motor had wires exiting it that were the size of a garden hose. The Johnson motor being shown had NO wires. Surely this motor was unreal, a con-job to get money for dealerships. Yes, there he was, Rory Johnson standing next to his sealed self-contained electric motor.

"Upon returning to the Greyhound Towers and telling them what I had seen, they instructed me to call Mr. Johnson. Greyhound wanted Johnson to put forth a plan to install a motor in one of their buses for testing purposes.

"I called Johnson. He was delighted that a Greyhound employee had seen the motor running, and replied that the testing idea was acceptable. He would set a time frame for just when a bus should be delivered to him.

"Two years went by, with no business proposal from Johnson. Then, his former business partner, Mike Marzicola, called to say Johnson had passed away. He wanted me to work with him to get one of the motors running. I flew to Orange County, CA, saw the motor, took pictures, and put forth a plan to Greyhound. Subject to a contract with Marzicola, one of the old worn motors would be brought to the research shop. I would then very carefully reconnect the generator wires that Johnson had cut off prior to moving from Elgin, IL to California.

"Discussions with Marzicola brought out that the U.S. Government (given the authority by the Congress of 1952) had issued a GRAB order to take Johnson's motors. Rumor has it, the DOE is run by US oil companies and OPEC, and they want no competition, period. Because of this grab order, Johnson had cut the generator wires. He had then put his 'total shop', with motors and all, on several U-Haul trucks and left Illinois in the middle of the night. He went to California to re-establish his business. But before he could get a motor running, he passed away.

"Surely, Greyhound would agree to let me re-start one of Johnson's motors. The wonderful proposal put forth to Greyhound was rejected by mail. Very agitated, I went to the top office at Greyhound demanding an explanation. I was met at the door with the comment, "We know why you are here." Knowing the potential savings to the bus company, surely they could have only one reason for rejecting the proposal. They must have believed I was not qualified to start up the motor.

"Greyhound's top legal advisor stated he was present when the Greyhound board met and discussed my written proposal. He stated the following, "At NO time was the thought put forth that you would not succeed. In fact, we discussed all of the hardware designed and constructed by you, and started the conversation from what happens when Greyhound has a running motor. We contacted a State representative who felt this motor should not be allowed to be used in 4,000+ buses. The loss in tax dollars for fuel alone would be a very huge sum." He then asked me to leave, stating he was sorry that he had to tell me the reason the plan was rejected.

"Telling Marzicola of the rejection, I offered to personally put in a few thousand dollars toward the parts to get one motor running. In return, I would be assigned the dealership for the Phoenix metropolitan area. We signed legal papers in exchange for the money agreed on, and went to work. (I still have the signed dealership.)

“The first thing I noticed was that someone had been working on repairing the motors. Three motors already had new commutator assemblies installed. Each assembly consisted of 3 commutator assemblies on one insulated tube with a metal case to secure it to the shaft.

“One motor still had the old worn commutator assembly, as it had not yet been repaired.”

Orlowski goes on to describe his reconstruction efforts and includes interesting technical details about the Magnatron’s structure and theory.

Johnson did not know that OPEC tracks all potential competition to its oil business and that he was reportedly number one on OPEC’s hit list. His first mistake was publicizing, in many magazines, his plans to manufacture and distribute his revolutionary motor.

Erik Masen has spoken with a few people who even signed up for distributorships. Erik Masen had included Johnson and his Magnatron in his energy invention suppression anthology (see http://www.electrifyingtimes.com/erik_masen_suppression.html).

In 1979, Johnson placed his engine in a Buick Electra and was preparing to drive it around the country to sign up more distributorships when the US Department of Energy and the State of Illinois teamed up to prohibit his company Magnatron, Inc., from producing and selling Magnatrons. They first placed a gag order on all the people in the company by using the Secrecy Act of 1952. Secondly, the State of Illinois immediately requested the company to provide information about all of their employees, distributors, stockholders, investors, suppliers, etc. They asked questions that blatantly deny anyone’s constitutional rights to privacy. The pressure from the State of Illinois became so overwhelming that Johnson decided to move his entire business to California in the middle of the night.

After a year of hearing nothing but silence from Johnson, Greyhound agents tried to contact him – only to be notified that he had passed away unexpectedly. This is a particularly troubling part of the story, since he had been in his early fifties and in robust health. Later, Greyhound learned that shortly before he died, Johnson had inexplicably moved out of his laboratory in the middle of the night and taken all of his motors and technology to California.

Bob Bass, in his report copied above on low-energy nuclear transmutation, claims that the CIA, the KGB and the Mossad, etc. all have "sprays" which can be sprayed upon someone and cause him or her to die of apparently natural causes. One speculation is that Johnson’s death – apparently due to heart failure – had been artificially induced by such a spray.

In a January 20, 2007 email to Gary Vesperman, Terry Sisson reports:

“Hi Gary,

“I visited Magnatron, Inc., in July 1979. I wish I would have taken a photo. Placards were placed over every inch of the large windows in the front of the building listing all of the questions the State of Illinois requested his company to provide. He wrote, “When has the government ever had the right to ask this of any company.” I peeked in the front window and saw one of his motors mounted on an engine stand. Nobody appeared to be there so I walked around to the rear of the building. I found the rear garage door open and could see the Buick Electra inside. I was about to approach nearer when a man emerged. We talked, but he quickly informed me that due to a US gag order he was unable to talk about anything. I managed to get his phone number and called him from time to time for years following. He was an assistant of Rory’s and he kept the information very close to the vest. He did tell me that it was real and it worked, yet not how it worked.

“About 1984, I began to call all the Johnsons in the phone book in Elgin. I finally got a hold of Rory’s son. He too said that it was real, but I got nowhere. Around 1992, I met Jerry Orlowski, and he told me his experience as the employee of Greyhound who was sent to investigate the technology, since he wound electric motors for several years. Jerry was very upset about the whole incident, particularly Greyhound’s Board of Directors refusal to utilize the technology after he found the technology to be authentic. Jerry even witnessed the government’s seizure of the motors in California. --- Terry Sisson.”

Energy invention suppression-pertinent quotable comments from Johnson:

“There have been very few startling things that have come from a large organization. You don’t get anything practical out of a government-sponsored laboratory such as Fermi and Argonne.”

Johnson believes watching a budget as required by government-funded programs stifles creativity and the ability to take a chance.

The US Department of Energy (DOE) is termed a rip-off by Johnson. "Right now our government is not looking for energy in any form. A tremendous amount of money is spent (on DOE) every year and so far I haven't seen anything out on the road or helping heat your home or helping reduce the cost of your utilities or anything else." (For example, the DOE's glamorous multi-billion-dollar hot fusion research program seems to be fundamentally a public relations ploy which allows the DOE's numerous highly paid bureaucrats to have lots of fun making themselves look useful without posing any serious competition to the oil and power industries for at least decades, and may always be for decades. Gary Vesperman)

Howard R. Johnson: Permanent Magnet Motor

Howard R. Johnson has developed a device resembling an electric motor which produces work without electrical input, using only permanent magnets for motive force. The basic principle of his magnetic motor is that its magnets are arranged in such a manner that its magnetic flux is always unbalanced, thus producing a continuous rotational drive. For patent descriptions, detailed theories and diagrams, see <http://rexresearch.com/johnson/1johnson.htm>. Two links to additional information can be found in <http://www.web-space.tv/free-energy/>. More information apparently is available from the "Permanent Magnet Research Institute", P.O. Box 199, Blacksburg, Virginia 24063.

Johnson spent six years fighting the patent office to accept the reality of his magnetic motor. In April 24, 1979 Johnson finally got a US patent – 4,151,431 – for a Permanent Magnet Motor that starts itself and would deliver 5 kilowatts from permanent magnets. Jet Propulsion Labs built a prototype 5-kilowatt generator.

In his January 20, 2007 email to the New Energy Congress, Ken Rauen reported:

Howard Johnson got his patent because he DEMONSTRATED one in the courtroom. The judge ordered the USPTO to give him a patent. I saw a copy of the court document while in Gene Mallove's employment. Unfortunately, the whereabouts of that document is unknown, as Gene was not a good file keeper, and he is not around any more.

What was demonstrated was a roller skate on a linear track, fitted with magnets, and a line of magnets over the tracks. The track was slightly sloped up, so gravity could not be attributed for the motion. Since it flew off the track end and was not jerked back, it had to have net energy imparted to it.

Ken Rauen

That demonstration looks similar to the prototype of Stewart Harris' theory of magnetic instability (see below).

Johnson's other two patents are No. 4,877,983 for Magnetic Force Generating Method and Apparatus, and No. 5,402,021 for a Magnetic Propulsion System. In all Johnson is connected with more than 30 patents in the fields of chemistry and physics.

The following suppression account is an edited consolidation of information from an exchange of emails between Gary Vesperman and Al Witherspoon, a long-time associate of Howard Johnson. June 2006 Al had read on the Internet Vesperman's third version of this compilation (now in its fourth version) of energy invention suppression cases and had then emailed Vesperman. Al is a businessman and the inventor, in one week, of a crucial part of the Hubble Space Telescope that had stymied other engineers for months.

To refresh memories for Al's story, Al and Howard had some pleasant visits August through October 2006. Howard is now 92 years old but still healthy with a keen memory.

Al's involvement with Howard's project was not from a technical standpoint but rather from the standpoint of technology suppression. Al had never taken the time to write this up. He thinks that it's about time. Al has been holding back his suppression story for nearly thirty years.

Howard Johnson actually began his work on this motor in the 1930's. When he first started the project and conceived the idea on paper, the materials needed for the construction of the motor had not yet come into existence. However, he told Al that he knew that someday they would become available, and then he would be able to construct it.

The suppression of the motor is occurring by the general methods in addition to Howard's own suppression due to his warranted mistrust of fellow scientists. Things have come up missing and promises not kept.

When Howard first introduced the development of his permanent magnet motor there was a nearly immediate world symposium organized and held at Virginia Polytechnic Institute and State University. A number of scientists came from all over the world to attend this event. There was quite a buzz in the air about this new technology prior and existing through some finite time during the event. Al met and conversed with a number of them. A couple of them were actually quite friendly. The rest were seething with egomania and the disinterest of speaking to whom they assumed was a local hillbilly.

It was not a conference. It was merely a one-sided presentation of the technology and there was no entertainment of questions. The rules of the event were such that questions were to be saved for the end of the presentation. At the end of this presentation, the speakers quickly vanished at the moment of the last word. A couple of questions were addressed, but the respective replies were only "I don't know" or "I cannot say at the present time".

The primary focus seemed to be entirely that of debunking the notion of such a device. There was absolutely no positive attitude in the air with the exception of a few attendees who expressed the hope for the further investigation and development of the technology. Most attendees were nearly laughing with skepticism. One who Al spoke with was emphatic with his opinion that the device was viable.

Al recorded the event on audio, but there seems to be no record of it now. Al does not know what Howard did with it. When Al visited him summer of 2006 he could not remember the specifics of the tape or where it might be located at the present time.

Also at the symposium there were a couple of people making an apparently 'approved' video tape of the presentation. There were no other apparent attempts to videotape the event.

Al was the last of the attendees to exit the event. He watched what was done with the video tape.

A man took the video tape downstairs and then discretely gave it to another man. This 'other' man then went to his car and drove away. Al followed him until he arrived at Inland Motors Division of Kollmorgan Corporation in Radford, VA where precision drive motors and systems are manufactured. He got out of his car and went into the building.

Al asked the guard if he knew this man and he said that he was not an employee but was a U.S. Government inspector from Washington, DC. From this point on there is no more information about the identity or the purpose of his actions.

Some months later Al confronted the directors of the symposium. Their words to him were such that they had apparently reconsidered their position of belief concerning the technology. A little later Al found that these directors were under the direct employ of Kollmorgan and also by virtue of the fact that they stood to receive sizeable renewal grants for their respective departments.

Do you suppose that it was Kollmorgan who wanted the technology to be suppressed? After all, they stood to gain by creating disinterest such that they could quietly and anonymously pursue it for their own use without the threat of competition.

A couple of weeks later the house across the street from Howard's house which had housed a few of the working class became occupied by two agents from the National Security Agency. Al acquired the nature of their identity by unusual means. Besides this, they stuck out like a sore thumb, dressed similarly to Mormon missionaries but older in stature. They stayed there for about one year. Periodically Al went by there to see what they were up to but only saw them outside once.

They likely saw Al at Howard's place on numerous occasions but never spoke to Al and reportedly spoke to Howard only once. The nature of the conversation that Howard had with them supposedly had nothing to do with technology but was apparently just everyday common chit chat.

Al wondered what they did all day. He got to thinking that they probably sat around doing what all government officials do, smoking dope without exhaling while watching cartoons without exhaling. Please overlook Al's slight humor.

Then one day they were simply GONE. Al asked the owner of the property who they were. He said that they were Electrolux vacuum cleaner salesmen. Al almost busted out laughing. Al's great uncle was one, and Al has seen several at his front door, but never those that dressed like these guys.

During their stay Al received a rather strange phone call one day in April 1979. A man simply asked for Al, and Al simply said hello, thinking that it was likely one of his customers or a telemarketer.

He quickly identified himself in such a way that Al could not understand his name. When Al asked who was calling he simply replied by asking Al if Al was acquainted with Howard and how long. He was very nice and thus Al answered him due to Al's probable youthful naivety. He then simply said "Thank you" and hung up. Caller ID or the *69 features were not available yet at that time.

On three occasions after this between 1980 and 1983 Al's house was broken into in a nondestructive and undetectable manner, meaning that the method of entry was not discernable as being unauthorized. However it was very apparent that someone had been rummaging through the house in ALL the rooms including the garage and basement. No valuables were ever taken. At the time there was some jewelry, other precious stones, silver, gold and a letter from Robert E. Lee in relatively plain view which at that time were valued well over \$100,000. These were likewise never touched. Since then these items have been removed to a safety deposit box.

Whoever broke in never found any devices or related documentation. However, Howard's house, as far as Al knows, was never invaded until early 2006. Al and Howard have no idea who did this, but there were no prints to be found. They only took documentation which had nothing to do with the technical aspects of the motor or its design. The documents were related to contractual agreements concerning the disclosure of the technology.

In 1985 Howard reported to Al that he had struck a deal with General Electric. For fifteen million dollars the company had purchased an exclusive (but not 'sole') license to make, manufacture, market and utilize the motor. By 1986 General Electric had built a very, very large working model the size of a house. It is not being used and is kept hidden in a building under armed guard somewhere in the United States. (However, it doesn't quite make sense that the company would build such a very expensive large motor when a much smaller, cheaper motor should be adequate for experimental studies. Gary Vesperman)

Al never asked Howard what he did with the proceeds. A reliable source did tell Al that the agreement with General Electric was such that they give the \$15 million to a certain charity.

Since that time there has been no other publicly known activity with the motor by General Electric. Al suspects that the company is using it to get paid by the oil industry to keep it under wraps – industrial/technological extortion or protecting the world, or possibly both. However, this notion is merely a notion and surely speculative.

Al's guess is that General Electric could simply and easily make a substantial amount of money by keeping things quiet while at the same time using it as a card to play when the time is right. Al knows exactly how they could do such.

Howard and Al have found that American and Japanese magnet manufacturers are mysteriously very reluctant to provide the needed magnets. In the report below on "Yasunori Takahashi: Magnetic Wankel Motor" John Moreland explained that the secret to the enormous strength of the Takahashi magnets, at 25,000 gauss the most powerful magnets ever developed, is that they contain uranium. The U.S. Government forbids importing radioactive materials.

Throughout the past twenty-eight years approximately, there have been some reported attempts to construct the motor. Al has NEVER seen one in the possession of any individual outside of the Permanent Magnet Research Institute.

Finally: Howard, by claim and Al's personal opinion, has sufficiently disseminated the technology to the point such that the motor can be replicated. Replication of the motor has apparently achieved little known success. There are reasons for this lack of success.

There seems to be little doubt that this device or similar devices have been built. They are relatively easy to build and do not require any sort of special magnet type in order to be functional. Actually, ordinary magnets are better from the standpoint of the homebrew versions. Very powerful magnets are difficult to keep seated in place. Also, experimenting with super-strong rare-earth magnets without special equipment and training can easily cause injury.

The notions that are reflected in comments made by others as to the theory of operation are not correct by any means. The energy required to charge the magnets have nothing to do with the energy delivered by the motor. Many would say that this is most interesting and important.

Al has found, in the process of examining various cases, that few individuals if any, have the correct blueprints. Also, the blueprints are not a whole lot of help unless a person has a clear understanding of certain principles of magnetism. Though this motor can be successfully constructed with "off-the-shelf" components and not to mention being done so in a crude fashion, the apparently ability of most is not sufficient to attain a working model of the rotary motor.

Al has seen theoretical speculation concerning certain magnetic principles by "respected" members of the HJ Motor Group that further suppress the successful application of the technology. Though likely not intentional it is nevertheless the result of careless thinking and poor technological vocabulary. Such practices propagate inaccuracy and inability to produce any viable results and end up merely creating a vicious circle resulting in lost art and the downward spiral of success.

Al discussed this matter with Howard during one of their visits. They were able to arrive at some conclusion perhaps, but that of which will not presently be disclosed. Al needs to think about it a little more.

As far as participation by other individuals:

To date, there has been no person that has kept their word concerning certain aspects of disclosure. There have been no individuals that have kept up other agreements directly related to the use and dissemination of the technology. Some individuals have replicated Howard's research in various ways, including the distribution for gain, in such a manner as to claim it as being of their own origination. This may include the distribution of nonfunctional blueprints. As far as Al knows, Howard has only and repeatedly been the victim of greed and egotistical lust.

To date, not one single person has ever commented on Al's advice for making the motor work. This show of apparent ignorance eludes Al's belief.

At this point in time Al does not believe that Howard is highly inclined to divulge any more information to the general public or prospective co-participants. The royalties due on his recent book have not been paid either. This situation will change with the publication of his new book containing advanced theory. Those who have any sense, in my opinion, will be well advised to read it.

And as for Al himself: He is presently looking for a few good men. To date Al has only been in contact with one or two individuals who have shown even a spark of integrity. At the present time, there are only two individuals actively involved with the Permanent Magnet Research Institute.

Howard's parting and publishable comment from their meeting of October 10th was simply as follows and quite closely matches his exact words: "If you can't believe what you see, then there is little else that I can do for you."

Al thinks that it's not always the government that suppresses technology. Sometimes it's the individual who bites off his or her own nose to spite his or her face. That is, the government does not need to directly suppress the technology because the citizens are doing a splendid job all by themselves.

However, it should be noted that it is plausible that negative elements hide behind the veil of our good society WHO serve the purpose of being suppressing agents.

It is not necessarily our government which doles out the suppression. They often get blamed for a lot of things which are merely the bad direction of a small individual or group within.

Maybe the distribution of incorrect information is being done by the implant of a suppressing agent(s)?

Virginia Polytechnic Institute and State University does not help Howard though he lectured there for a while. Most of the technologists there are quite jealous of Howard and for whatever reasons seem to be a major contributing factor to the suppression of the technology. The college is where the first world symposium took place. Al was sent there to eavesdrop and record the presentation which was largely an attempt to discredit his work. Al spoke with some of the scientists who attended the symposium. Most were quite skeptical, both about the technology and the true intentions of the lecturers. Some even left in laughter. There were a few who expressed that they sincerely hoped that the technology would come to perform, regardless of any negative opinions.

However, this apparent suppression may have been done with Howard's ultimate blessing since such a discrediting would likely draw attention away from his work yet get the ball rolling for world curiosity and open some minds. Making money at this sort of thing was a hopeful wish for Howard since he is by no means a wealthy man. Aside from this he just wanted to help the world. He reminded Al, however, that not all good things are good for mankind and that the introduction of such technology to the world would indeed be disruptive. After considering his comments over a period of nearly thirty years, Al has come to realize that Howard's concerns may warrant some serious consideration.

Al intends to see Howard again sometime to find out by some gentle fashion if this early suppression indeed was his intention, or if it simply occurred inadvertently. Also Al plans to find out whatever else he can since time is short and Howard, being 92 years old, may not be here for very much longer.

As mentioned above, this account of Al's suppression story is a consolidation of emails exchanged between this writer, Gary Vesperman, and Al Witherspoon up until mid-October 2006. However, I have emailed Al a few more questions. But since then I haven't been able to contact Al by phone and email.

For instance, it is not clear to me whether the two National Security Agency agents had rented a house across the street from Al's house or Howard's house. How were they able to still acquire needed magnets which they weren't allowed to buy? Exactly what did happen at Oak Ridge and Howard's involvement in the development of the atom bomb? What were the real reason and circumstances relating to the Science and Mechanics article? What happened in 1941 at the U.S. Patent Office 37 years before Howard actually commenced construction? What are the details regarding the construction of the generator at Jet Propulsion Labs? What's this about snowflakes and honeybees?

Stewart Harris: Theory of Magnetic Instability

The theory of magnetic instability is a magnetic principle which appears to be the embryo of a valid free energy device. It was invented by Stewart Harris. He applied for a patent in 1978, and it was rejected. Dr. Marion Bowman from Washington, DC traveled out to Mr. Harris' home in Las Vegas, Nevada to witness the operation of the device. He was impressed and returned to Washington enthusiastic about its applications.

Shortly after the demonstration, all copies of the patent application and other information subsequently disappeared from the US Patent Office in Washington, DC. In addition, Mr. Harris' home was broken into and his original drawings, papers, applications, and correspondence were stolen. For some unknown reason, they left behind the prototype. Coincidentally, Mr. Harris lives just a few blocks from the office of Film Funding, Inc., where this writer, Gary Vesperman, used to work in Las Vegas.

For some time I had Harris' prototype on my desk which I delighted in demonstrating to visitors. A horizontal three-inch-long roller cylinder of about five stacked 1-inch diameter disk-shaped magnets rolls UPHILL, without energy input, between two similar four-inch-long cylinders of about ten stacked 1-inch disk magnets placed in parallel with each other and taped onto a cardboard ramp (try 30 degrees up from the horizontal).

Radio Shack sells disk magnets, but they are a little too strong. The horizontal cylinder rolls uphill a little too fast. Try weak disk magnets instead, or strong magnets that are made weaker by thermal or mechanical shock.

I had noticed while playing with Harris' device that the roller cylinder would hang up at the top of the incline. But if the cylinder was immediately picked up and placed back at the bottom of the incline within 60 seconds, it would accumulate enough additional rotational angular momentum of unknown origin to fall over the top of the incline.

At the International Symposium on New Energy that was held in the Denver Hilton South, Denver, CO (25 – 28 April 1996), I asked Dr. Harold Aspden if his “Aspden effect” is the same as the roller cylinder’s temporary accumulation of additional rotational angular momentum. He said it is not. However, Aspden and I decided that it appears to be such an interesting etheric energy phenomenon it should be investigated further.

This is what would make a fine project for a grade school science class: Try magnetic disks of various sizes and strength. For each particular size/strength, carefully record various time delays between the time the rolling cylinder is taken off the top of the incline and placed at the bottom of incline. There might be some type of “half-life” whereby the roller cylinder’s residual additional rotational angular momentum decays with time until the roller cylinder hangs up again at the top of the ramp.

Lester J. Hendershot: Hendershot Magnetic Motor

During the late 1920's Lester J. Hendershot, while working on a new type of aviation compass, stumbled across a method of generating energy. The "Hendershot magnetic motor" made headlines and attracted such big name investors as Charles Lindberg. Hendershot, while attempting to establish a true magnetic north compass, found that by cutting the same line of magnetic force north and south, he had an indicator of the true north and that by cutting the magnetic field east and west, he could develop a rotary motion. He wove together a number of flat coils of wire and placed stainless steel rings, sticks of carbon and permanent magnets in various positions as an experiment. Based on this principle, after two years of trial and error, he built a magnetic motor that would self-rotate, to his surprise, at a constant speed of 1800 rpm while producing 45 horsepower.

Hendershot changed directions and decided to build a generator on the same principle, after deducing that a magnetically-powered motor was not as practical as a magnetically-powered generator. Hendershot had discovered that the Earth’s rotating magnetic field could be used to provide power to motors and generators, much like Nikola Tesla’s discovery that the Earth was a huge capacitor, capable of providing significant amounts of electrical power. Simplified, Hendershot believed that if one were to cut the lines of force of the Earth’s magnetic field, one could harness this to provide direct power to generators and motors. Nikola Tesla attempted to do just that, when he built his “magnifying transformer” at Shoreham, Long Island, NY.

To read the first hand accounts of Hendershot’s historical encounters, see the following research links:

<http://www.time.com/time/magazine/article/0,9171,880984,00.html>
<https://secure.netsolhost.com/nuenergy.org/alt/RadonFuel.htm>
<http://www.clubusenet.com/thread/262719.html>
<http://www.borderlands.com/freeenergy.htm>
http://www-tech.mit.edu/archives/VOL_048/TECH_V048_S0041_P004.pdf
<http://www.clarabow.net/articles/ourreaderswrite.html>
<http://www.freepatentsonline.com/20070007844.html>
<http://www.rexresearch.com/feg/feg1.htm#hendershot>

Hendershot ran into political difficulties in promoting his device, attempted to take his business to Mexico, and finally faded into obscurity having taken a "couldn't refuse" payoff to never work on his device again. (Source: <http://www.srsi.org/sr2/Heat/fed.htm>)

In 1961 Dr. Ed Skilling, from Columbia University, successfully replicated and tested a Hendershot free energy device, out of which he got 300 watts. Skilling had been associated with Hendershot and learned of the device through him. The generator was self-resonant at 500 kHz.

James Watson: 8-Kilowatt Battery-Popper Motor

Thomas E. Bearden, Ph.D., has provided a significant 'account', dated 1999, regarding James Watson located at <http://www.cheniery.org/misc/battery%20poppers.htm>, copied as follows with some editing:

James Watson successfully replicated Bedini's battery energizer (with direct advice from Bedini). Watson made improvements and modifications, and eventually was able to build one and adjust it as he wished. He demonstrated an 8-kilowatt battery-popper motor at the first International Tesla conference in Colorado Springs in 1984.

Later Watson was moving toward development and marketing.

Then Watson and his entire family disappeared. Neither Bedini nor I could locate him. Neither could his financial backer, the late R. J. Reynolds III. This was a researcher and friend whom I was in contact with several times a week. Then bingo! Nothing further.

He [Jim Watson] abruptly and completely broke off all communication with everyone. A squirrely message was left on his answering machine for a few days, saying he had moved (but not in Jim's voice). Then it too was removed. And that was that.

Eerily, it seems that if you call the police in the town where Jim Watson lived, they will tell you he still lives there on the same street in the same house. At least that's what they told a friend of mine who checked a few months ago, which is years after Jim and his family originally disappeared. And that check may be the oddest thing of all. The police implied on the phone that Jim and his family never disappeared. Everything fine. A-OK. And that's a bald-faced lie. He and his family did disappear. No one could find them, regardless of how they tried. His financial backer couldn't even find him.

The clear implication is, stay away from that one. Somebody "from the dark side" may have made Jim the "offer he could not refuse". One may never know what really happened, whether or not Jim ever surfaces again — or has already surfaced again and is living there very, very quietly. But Jim's entire over-unity motor effort ended abruptly, even though highly successful. And even though the motor was almost ready to be put into production.

Watson has not been seen at an energy conference since that sudden mysterious disappearance. No one has had a phone call from him. I have not found anyone I trust who has seen him again.

You have not seen a Watson over-unity power system go to market. You almost certainly never will.

Yet Watson's device was perfected to the point where he could make the things like pretzels, adjust them readily, and they worked every time. They could have been put into mass production very easily. Obviously that made him a grave threat to the energy cartels around the world.

At rare intervals, the energy cartel does suppress an invention and an inventor by making the inventor "an offer he cannot refuse", in Mafia terms. Presently the going price when that offer is made is \$10 million. You take your \$10 million, quit all research, quit your contacts, and you live. But you live very quietly, although you live very well financially.

The engineers who measured Watson's 8-kilowatt machine there in Colorado Springs are still alive. And they know what they measured.

There's one other little thing. At that same International Tesla Conference in Colorado Springs, the folks who were in charge (for the energy barons) of suppressing all successful over-unity devices in the Western world were also there when Watson demonstrated his 8-kilowatt device. There is a certain effect which happens in a battery sometimes for a large over-unity battery popper unit like that, if the device is "for real". Time-reversal operations and wave transductions can occur, resulting in time-excitation charging inside the battery materials, in a negative time charge sense (remember, the over-unity operation is a negentropic operation). After a machine of that type and with that particular internal effects has been used to furnish energy for quite a while, you can make a definitive test on it. Simply hook it to a normal battery charger for that size battery, and start to charge it. You then may find to your surprise that the power will just seem to "disappear" in that battery, without charging the needle one iota, for 16 to 48 hours or longer, and in a rare case for two weeks.

The reason is that wave transduction occurs of your charging spatial energy into time-energy, and so you have to furnish rather enormous energy to get a little bit of that negative-time charge reversed. After you fill that seemingly "bottomless pit", then suddenly the negative time-charge will have been eliminated, and at that point the battery will start to charge up in quite normal fashion.

It is significant that Watson's battery was stolen right out of the machine. Whoever did it, almost certainly knew how to test it to find out if Watson's generator was actually a true over-unity device. If so, then they tested it and found that indeed it was genuine.

And there was only one group there who would have known that little tidbit.

Hitachi Magnetics Corporation: Magnet Motor

Engineers at Hitachi Magnetics Corporation have come right out and claimed that a motor run by magnets is feasible and logical, but the politics of the matter make it impossible for them to pursue developing a magnet motor or any device that would compete with the energy cartels.

Among the obstacles to free energy are the big banks who own or finance the energy industries. Peter Lindemann, D. Sc., offers an analysis of these obstacles in <http://www.wanttoknow.info/newenergysources> or <http://www.spiritofmaat.com/archive/feb2/lindemnn.htm>. Lindemann suggests that the four forces suppressing new energy devices are the world's wealthiest families and their banking institutions, national governments striving to preserve national security, deluded inventors and con men, and the unspiritually motivated behavior of all the rest of us.

Floyd Sweet: Vacuum Triode Amplifier

Floyd Sweet had invented an advanced, solid-state, magnetic power converter called the "vacuum triode amplifier". If it could somehow be made stable over a long duration, it potentially offers an exceptionally high ratio of output power to input power in the range of one million. The somewhat unconventional physics of the device is explained in <http://rexresearch.com/sweet/1nothing.htm>. The site also describes efforts to suppress Sweet's research and development efforts:

Two people from Australia, who claimed they wanted to help Floyd, stole his notebook and promptly asked John Bedini for help in replicating the VTA based on the notebook contents. John recognized the notebook as belonging to Floyd and promptly asked them to leave. However, the notebook was never recovered.

Sweet received many death threats over the phone and some threats face to face. A well-dressed gentleman in an expensive suit, tie, hat, and hundred-dollar shoes approached Sweet on the sidewalk of the street where he lived and introduced himself as Cecil Brown. Brown showed Sweet a photograph of Sweet inside his apartment. Brown then told Sweet that he represented a conglomerate that did not want Sweet's device to appear in the world at this time. Brown further stated that sometimes unfortunate things happen to people who do not comply with the wishes of others. Brown then retrieved the picture and departed.

Gary Vesperman's file titled "Bearden web site on electrical energy" includes these three excerpts written by Tom Bearden:

"A particularly good higher group symmetry electrodynamics, in this author's opinion, is the $O(3)$ electrodynamics founded by Evans and Vigier and further expounded by Evans {[xxxviii]}. Evans has shown that $O(3)$ electrodynamics is a part of the Sachs unified field theory electrodynamics {[xxxix]}.

Thus $O(3)$ electrodynamics can be used not only for modeling "normal" electrodynamic but also for modeling "exotic" unified field theory. Further, it can be used for engineering, so it permits the development of a drastically extended electromagnetic technology which can eventually engineer many new phenomena {[xl]}, including anti-gravitational effects {[xli]}. At least one highly successful antigravity experiment was performed by Sweet, in an experiment designed by the present author {[xlii]}. The weight of an object was steadily reduced by 90%, on the laboratory bench."

"Sweet was fired at from about 300 yards by a would-be assassin, using a silenced rifle. Being old, he stumbled and fell on the steps just as the assassin pulled the trigger. The bullet snapped right by his ear, where his head had just been. Thereafter, Sweet was always deeply paranoid about taking the unit outside his own apartment or continuing to develop it. I personally worked with Sweet for some years." (End of Bearden's report) Dr. Bearden provides more details on Sweet's interesting device in http://peswiki.com/index.php/Site:LRP:Tom_Bearden_Remembers_Walter_Rosenthal_%26_Floyd_Sweet.

John Bedini: 'School Girl' Motor and Battery Energizer

John Bedini, Idaho, designed the 'school girl' motor and battery energizer. Some years ago, three thugs came to his home and beat him severely. For a time he went underground and retracted all information on his devices. See <http://www.icehouse.net/john34/bedinibearden.html>.

Two Inventors: Model T Ford Generator with Magnets Added

About ten years ago, two very clever backyard inventors took a magnetic, electricity-generating flywheel off a Model T Ford, attached stationary magnets in a spiral arrangement to the outside, and developed a self-generating motor-generator, using the pulsed varying distance magnetic spiral principle. This generator continually produced 1600 watts of power with no other input. They demonstrated their generator at UCLA – confounding the professors, students and other observers.

Evidently some heavy-handed U.S. Government/corporate types were in the audience, however, because the inventors never made it home from their demonstration. They were found dead along the highway. Their trailer, containing the generator, had disappeared.

Apparently the Japanese now have the technology, which they are calling the "Magnetic Wankel" motor. (Excerpted with permission from Erik Masen's article "SUPPRESSION FROM HIGHER UP Inventors Beware! The Deadly Campaign Against Free-Energy Devices", *Electrifying Times*, Vol. 8 No. 3, and also in http://www.electrifyingtimes.com/erik_masen_suppression.html.)

Yasunori Takahashi: Magnetic Wankel Motor

Yasunori Takahashi, the famous Japanese inventor who developed the Beta video cassette recorder, has retrofitted his newly developed, super-powerful "YT" magnets into his 15-horsepower Magnetic Wankel motor scooter, claiming he can obtain 15 horsepower from a few amperes of electricity. If the U.S. Government allows the Japanese to export these scooters to America, we will see a further trade deficit in Japan's favor.

Rumor has it, however, that the U.S. Government refused entry to the Magnetic Wankel motor (in Mazda vehicles) several years ago, just as it blocked Honda's super-high-mileage, gas-powered cars at about the same time. Such protectionism may be "good for business" (at least for the oil companies and domestic auto manufacturers), but it hurts others and punishes the environment. (Excerpted with permission from Erik Masen's article "SUPPRESSION FROM HIGHER UP Inventors Beware! The Deadly Campaign Against Free-energy Devices", *Electrifying Times*, Vol. 8 No. 3 and also in http://www.electrifyingtimes.com/erik_masen_suppression.html.)

At the 1997 International Tesla Society Symposium in Colorado Springs, Colorado, John W. Moreland, Ph.D., a health physicist, lectured on his experiments with radiovoltaic electrical generators. (Compare with photovoltaic generators such as solar panels.)

Paul Brown lectured separately on similar work based on converting cosmic rays to electricity. Brown had been working mainly to recreate T. Henry Moray's generator.

Brown and Moreland found a strange quirk of ether physics involved with their over-unity electricity generating devices. It had been assumed by many, including Gary Vesperman as the basis for his advanced self-powered electric vehicle concept, that part of the output can be picked off and fed back directly to the input. The longest Moreland has been able to get his generator to run is three weeks. Then the generator dissipates like a cat getting tired of chasing its tail.

Brown and Moreland were still experimenting with voltage splitting, etc. Moreland said they may eventually have to take a generator's input and output out of the same time domain. For example, simply connect separate batteries to a generator's input and output.

After talking with Moreland this writer, Gary Vesperman, got to thinking that for the self-powered electric vehicle, we could have a computer monitor battery charge levels and from time to time switch around between several sets of batteries. Simultaneously at all times, one battery set is being used for the motor, another set for the generator input, a third discharged set connected to the generator's output, plus possibly some spare batteries.

When chatting with Moreland about electric vehicles, I mentioned the Takahashi over-unity motor mystery. June 1997 Hal Fox had sent me a copy of a 10-minute video showing Takahashi demonstrating his prototype over-unity magnetic motor, also known as a Self-Generating Motor (Magnetic Wankel) with a drive belt turning an alternator. The motor is shown connected to a battery for starting the motor, and the battery is then shown disconnected. Two headlights, connected to the alternator's output terminals, remained illuminated after the battery was disconnected.

A motorbike using the Takahashi over-unity motor was sent in 1996 (?) from Japan to England and then to Mark Goldes in Sebastapol, California for testing. Goldes found that the motorbike had limited range, and the magnets were unremarkable. Nobody could understand why a man of Takahashi's stature and wealth would try to pull a scam.

Moreland explained that the secret to the enormous strength of the Takahashi magnets, at 25,000 gauss the most powerful magnets ever developed, is that they contain uranium. The U.S. Government forbids importing radioactive materials. For some reason, the radioactivity of the Takahashi magnets is being kept secret from the U.S. Patent Office until the Takahashi motor patents have been granted. So Takahashi had to substitute ordinary magnets for his super magnets in his motorbike motor.

Thomas E. Bearden, Ph.D., understands that Takahashi's magnetic Wankel motor has been suppressed by the Japanese Yakuza mob. (Source: http://peswiki.com/index.php/Site:LRP:Suppression:_Alternative_Energy_Systems:_%E2%80%9CNovelt_y_of_Fact%E2%80%9D_Freely_Derived_Sources)

This writer, Gary Vesperman, didn't follow Moreland's explanation during his Symposium lecture how certain radioactive materials can enhance the magnetic field strength of a magnetic material. I had planned to write him for a reference that I could study. Unfortunately I lost touch with Moreland afterwards – mainly because his web site www.aztecpub.com never was active.

Teruo Kawai: Motive Power Generating Device

The key statement of Teruo Kawai's US Patent 5,436,518 for his "Motive Power Generating Device" is as follows: "Electric power of 19.55 watts was applied to the electromagnets at 17 volts and 1.15 amperes. ... an output of 62.16 watt was obtained." Dividing the output power by the input power yields a coefficient of performance of 3.19.

Thomas E. Bearden, Ph.D., explained the Kawai device's operation, placed his explanation on the Internet, and Kawai and party came to Huntsville, Alabama to see him and his associates. At Kawai's urging, they negotiated an agreement with him that they would manufacture and market his systems worldwide; he already had build a closed-loop, self-powering system in Japan. Kawai would fund the entire project.

Their agreement was verbally reached on a Thursday afternoon, late. That night a jet arrived posthaste from Los Angeles, with a Yakuza on board. The next morning Kawai and his party were in fear and trembling, and the Yakuza was in total control. Kawai no longer controlled his own company, his invention, or his own fate. Needless to say, the Yakuza coldly cancelled the agreement, point blank. This happened in front of Bearden and four associates. So there are five witnesses. The Yakuza and party quickly packed up the two Kawai engines that were in the possession of Dr. Bearden and his associates, and departed. No Kawai engine will ever be permitted on the world market. Several other Japanese COP>1.0 electrical power systems have also been suppressed by the Yakuza. Many such incidents — including murder — have occurred over the last decades, right here in the United States. Others will happen. (Source: <http://www.spiritofmaat.com/archive/mar2/bearden.htm>)

Dr. Bearden, inventor of the Motionless Electromagnetic Generator (see above), himself has been the subject of suppression efforts, including death threats. (Source: http://peswiki.com/index.php/Site:LRP:Suppression:_Alternative_Energy_Systems:_%E2%80%9CNovelt_y_of_Fact%E2%80%9D_Freely_Derived_Sources)

Johan Grander: Magnetic Motor

Johan Grander of Austria developed a revolutionary magnetic motor, but was turned down by the Austrian patent office with the excuse: "Inventions which are detrimental to products in existence may not be granted a patent." (Erik Masen, "Suppression of Quantum Leap Inventors", *Electrifying Times*, 2007, Vol. 10, No. 2)

IPMS-Kiev and Arzamas-16: Super Magnets

The evolution of the Soviet view of the material world was reflected in the formulation of a new model of nonlinear quantum mechanics as an implicit function of consciousness. For instance, water is more than just H₂O. Experiments prove water can be affected in measurable ways by subtle influences such as music or whether a person's thoughts are hate-filled or life-enhancing. A more correct understanding of materials has thus enabled super magnets to be developed.

In conjunction with research jointly conducted at the highly secretive laboratories at Arzamas-16 in Khazakstan, IPMS-Kiev has developed a family of magnets with energy characteristics equal to or exceeding those of the best conventional iron-boron-neodymium types, but with the all-important feature that they operate with equal or greater efficiency at extremely high temperatures, up to 250 degrees centigrade. These magnets are so powerful that they have been successfully used to conduct extensive research in a perpetual zero gravity environment. All these experiments have been performed without the use of cryogenics.

Joint ventures of the IPMS with more than a dozen private sector companies to develop inventions were repeatedly sabotaged by the U.S. Government's Defense Intelligence Agency and others. (Source: David G. Yurth, *The Anthropos Files: Tales of Quantum Physics from Another World – 2nd Edition*, 2007)

General Motors Corporation: EV-1 Electric Car

Rodger M. Ward was a two-time winner of the Indianapolis 500, National Stock Car Champion, and multiple winner of the USAC Racing Championship. In 1993 Ward registered with the State of Nevada a Small Corporate Offering Registration (SCOR) for his American Electric Car Company, Inc., whereby 200,000 shares of common stock were offered for sale at \$5 per share. This writer, Gary Vesperman, wrote most of the SCOR's disclosure document/business plan.

Ward's company had developed a new type of automatic transmission that will reduce the power required to propel the car and will allow a longer driving range between charges. His company also had developed a very efficient vacuum system to energize equipment such as power steering, power brakes, door locks, and windshield wipers that would ordinarily require electricity from the batteries used to power the electric motor. In addition, his company had added an extra lead-acid battery to supply power to such accessories as the radio, heater, air conditioner, headlights, and taillights. Thus the power drain of the accessories is isolated from the power used for the electric motor.

Most interestingly, Ward's company had the right of first access, via Las Vegas-based Ashurst Technology Corporation, to a new type of battery invented by the I.N. Frantsevich Institute of Problems of Materials Science, Kiev, Ukraine. Most types of batteries rely on electrochemical reactions. The Ukrainian crystal lattice battery stores the charges in crystalline layers of a sheet-like material similar in appearance to mica. Due to nonlinear quantum mechanic effects, the electrical characteristic of each crystalline layer is that of a capacitor as thin as less than one molecule.

Since capacitance is inversely proportional to thickness of the separation between the layers, the practical consequence of the crystal lattice battery is to electrically function in a manner similar to that of a giant capacitor.

The positive contrasts of the crystal lattice battery with the lead-acid battery are so striking as to justifiably portend a potential revolutionary advance for the electric car industry.

Ward's company initially planned to use twelve 86-pound lead-acid batteries weighing a total of approximately 1000 pounds. These lead-acid batteries were to be replaced with ten 20-pound crystal lattice batteries which would weigh a total of only about 200 pounds and thereby noticeably enhance driving performance.

Lead-acid batteries provide up to approximately 120 miles on a four to five-hour recharge. The crystal lattice batteries could provide up to 400 miles on a one-hour recharge. The crystal lattice batteries can supply constant voltage for up to 94% discharge. Since there is no heat nor waste product buildup as with electrochemical batteries, the crystal lattice batteries can easily last many hundreds of extremely rapid charge/discharge cycles.

The crystal lattice batteries operate well in the temperature range of -40 to +60 degrees centigrade. A side benefit of the crystal lattice batteries is that they are made only of materials which are environmentally friendly, plentiful, and inexpensive.

While the IPMS did provide test samples about the size of a large flashlight battery, they were not able to deliver on their promised 20-pound crystal lattice batteries. The U.S. Government's Defense Intelligence Agency had sabotaged the Ashurst Technology/IPMS joint venture. So the American Electric Car Company, Inc., lamentably failed to bring to market Ward's potentially revolutionary electric car.

Rodger Ward and Gary Vesperman became good friends. (BTW, he drove in city traffic, cutting in and out, etc., like the famous race car driver that he is, not like a normal driver!) Ward explained why the major automobile manufacturers as well as the oil companies suppress electric cars. Only 60% of their total profit is made when a car is sold. The dealers and manufacturers make the other 40% of their profit selling and replacing high-priced parts such as mufflers, fuel pumps, etc. Electric cars are too simple, durable and easily maintained. See his biography at http://www.motortrend.com/features/auto_news/112_news040707_ward/.

The significant profit advantage of gasoline cars over electric cars may be why as portrayed by the movie "Who Killed the Electric Car?", General Motors Corporation didn't fully support and eventually scrapped its EV-1 Electric Car. To be fair, GM claims that it refused to sell its EV-1 Electric Car because it would be unable to ensure the safety and life of the vehicle after parts makers stopped supplying components. GM also claims that the EV-1 had difficulty running uphill and didn't offer air conditioning. GM does claim that its upcoming Volt electric/gasoline car will be more advantageous than the EV-1. Because the Volt will still have a gasoline engine, the Volt should be complicated enough for GM to retain profit margins when maintenance labor and replacement parts are sold.

The complicated gasoline-powered car is fundamentally unreliable and unnecessarily expensive to fuel and maintain. It has required heroic engineering efforts to partly overcome its inherent impracticality.

Within about a year after writing the disclosure document for Ward's company's SCOR, this writer also wrote Nevada SCOR's for Natural Environmental Solutions, Inc., (NESI) and Aimrite Systems International, Inc. NESI had acquired the rights to Frank Richardson's magnet-based electrical generator that required no input power and also a bladeless Tesla-type steam turbine (see above). Aimrite Systems had patented computer-controlled hydraulic shock absorbers and a computer-controlled air ride suspension system. I have ridden a test bus equipped with an Aimrite suspension. Nice ride.

I introduced Rodger Ward to prolific Las Vegas inventor Alvin Snaper. Snaper has 600 patents, processes, and innovations such as the type font ball in the IBM Selectric typewriter and Tang the orange juice drink. Ward became enthusiastic with Snaper's demonstration of a prototype of Snaper's invention of a compressed air-driven air conditioner/heater. It relies on the principle of a vortex tube. Air whirled in a vortex tube separates with the cold air molecules collecting in one portion of the tube, and the warm air molecules collecting in another portion of the tube. The cold air is expelled from one end of the tube, and the warm air is expelled from the other end. It can be switched between providing 90% cold air and 10% warm air, or 10% cold air and 90% warm air. The metal tube is about a foot long and a half-inch in diameter with a two-inch long compressed air intake tube perpendicularly attached about three inches from one end. The intake compressed air requirement specifications are 7 CFM at 40 PSI. The volume of air expelled is twice that of a refrigerant-type automobile air conditioner while requiring only one-fourth the horsepower. Also, no warm-up period is required as with conventional air conditioners or heaters. Its efficiency is nearly 30%.

Alvin Snaper also had invented a low-temperature nondestructive process for increasing the durability of vehicle parts and tools with diamond or titanium nitride. A few years later, Snaper invented a high-performance nickel-iron battery very suitable for electric vehicles.

The Ukraine's IPMS had also invented a basalt/carbon fiber foam which is extremely strong yet lighter than fiberglass. A test vehicle made with basalt/carbon fiber foam parts was reportedly the only vehicle ever tested that can cut through a cast-iron London taxicab in a collision. (See below: "IPMS: High-Temperature Gas Plasma Detonator".)

Just for fun, I then combined these technologies into an "advanced self-powered electric vehicle concept". A current version with more details and additional technologies is available in the category "Speculative Advanced Electric Vehicle Concept" (<http://www.iiic.de/docs/GVShortSummaries1-46a.htm>). In addition, at a public meeting (14 September 2005) held in Green Valley Ranch Casino, Henderson, Nevada, regarding the proposed Regional Fixed Guideway traversing Las Vegas, Nevada, I submitted suggestions for possible power sources for the train, most of which also seem suitable for self-powered sources for vehicles (see <http://www.rtcsonthernnevada.com/rfg/documents/September2005PublicMeetingMinutes.pdf>), pp. 19-77).

The Pulsed Abnormal Glow Discharge (PAGD) reactor uses high-density charge clusters to produce useful positive AC-to-DC electrical power conversion gains such as 483%. It's an over-sized glass vacuum tube which is constructed and electrically driven within a narrow range of DC voltage so that it operates with negative resistance.

Dr. Paulo and Alexandra Correa, "New Energy Electric Power – Now! Pulsed Abnormal Glow Discharge Technology," Infinite Energy: Cold Fusion and New Energy Technology Volume 2, No. 7, March/April 1996, p. 18. Gary Vesperman's compilation of "Advanced Technologies for Foreign Resort Project" in <http://www.icestuff.com/~energy21/advantech.htm> includes a chapter on the PAGD reactor.

US Patent 5,416,391 for Electromechanical Transduction of Plasma Pulses. US Patent 5,449,989 for Energy Conversion System. US Patent 5,502,354 for Direct Current Energized Pulse Generator Utilizing Autogenous Cyclical Pulsed Abnormal Glow Discharges. Paulo N. and Alexandra N. Correa, Ontario.

The Correas have demonstrated 1-kilowatt outputs and have run motors under load with these PAGD reactors. GM was interested in the PAGD reactor, as the company's electrical engineers loved it. Upper management killed it, and told the Correas, "The electric car is window dressing."

IPMS: Energy Storage/Battery Devices

During the summer of 1984, airborne intelligence surveillance teams of the United States Air Force, operating out of specially configured and equipped Boeing 707 airframes (called AWAC's) electronically detected (and then shortly thereafter photographed) bursts of coherent light of enormous power originating in the vicinity of Dushambe, Turkministan. The bursts of light, a brilliant blue-green color, lasted just a few seconds and were shifted almost to the ultraviolet end of the light spectrum. The "laser" beams were directed upwards out of the atmosphere towards American military communications satellites.

At precisely the same time the AWAC's detected and photographed the laser bursts (they were referred to in that jargon by American military analysts but later proved to be something almost entirely different), several of the satellites essential to America's global military command and control communications systems became inexplicably inoperable.

The Defense Intelligence Agency, under the direction of the National Security Council and assisted by the National Security Agency, escalated its surveillance of the remote site in the Ural Mountains from which the bursts first originated. For several months, during a concerted campaign of uninterrupted observation by AWAC's and American spy satellites, no additional bursts were observed or reported. Then, without warning, in the middle of the night nearly seven months later, AWAC's crews operating just outside the territorial airspace of Afghanistan detected similar laser bursts of lower intensity during a period of intensive localized ground warfare.

The Afghanistan bursts were apparently aimed at targets under attack by Soviet infantry units. The laser bursts continued in a sustained, localized but obviously mobile attack pattern, as frequently as four or five times per hour, until nearly sunset of the next day. Photographic evidence gathered at the time by the AWAC's crew, and later corroborated by photographs taken at the actual site of the fire fight and forwarded to the U.S. for analysis, showed that the targets of the laser bursts were ammunition and fuel supply depots located in the remote desert. Several of the ammunition and fuel caches had apparently been destroyed during the attack, as demonstrated by the evidence of explosions, fire, smoke and residual infrared heat patterns detected, photographed and electronically recorded on-board the AWAC's.

All this information was transmitted (via encrypted communications bursts, routed through the military Global Command Control satellite system) to the National Security Agency (NSA), located at Fort Meade, Maryland. Analysts there recognized that they were looking at evidence of a weapons system which had never been observed before. They did not know what had produced the laser bursts. But they did know that the technology which made such a thing possible was not available to the countries participating in the NATO Convention. They were terrified at the implications of such a development.

Within hours, the information was packaged into classified documents and conveyed to the Joint Chiefs of Staff. The Joint Chiefs examined the information while they were being briefed by the AWAC's crews which had witnessed and recorded the events. After the briefing, the crews were dismantled, and their various members stationed far away from one another, with orders never to discuss the events they had witnessed. Officially, the laser bursts never had occurred.

Secretary of Defense Frank Carlucci took delivery of the packet at his residence in Falls Church, Virginia, three days later, at a private, secret meeting held in the middle of the night. No one has yet adequately explained why the Joint Chiefs waited three full days to brief the Secretary. Early the next morning, he was driven in a specially prepared bulletproof limousine to the White House. He personally delivered the information to the new President of the United States, Ronald Reagan. The content of the Secretary's report had an immediate, measurable impact.

It was this series of events which principally precipitated the Strategic Defense Initiative, a program of military defense and reprisal based on America's state-of-the-art satellite-borne laser-optical and particle accelerator technologies. The S.D.I. system was intended to provide the U.S. with a meaningful deterrent to further aggressive use of the technology developed by the Soviet Military.

There was only one problem with this system, aside from the fact that its astronomical costs almost bankrupted the American economy: it did not work. S.D.I. was designed to respond to a kind of technology which was not achievable in the West, and which could not be explained by any of the models, materials, technologies or sciences known in the West.

In 1985, the top-secret military version of the space shuttle, code named Atlantis, embarked on a special orbital mission. One of its mission assignments was to retrieve, examine or photograph the military spy satellites which had been disabled by the laser bursts recorded in 1979-84. The results of this investigation have not been declassified or released in any but the most censored version to the public. What we do know for certain, as a matter of publicly available non-classified information, however, is that each of the disabled satellites appeared to have had at least one, and in some cases as many as four or five precisely measured holes, approximately the size of an American silver dollar, melted completely through them from the outside.

The photographs taken of the satellites show evidence of intense heat, charring and carbonized residue evenly distributed around the perimeter of each hole. The evidence is clear and unmistakable – the satellites were disabled by a coherent beam of some sort, characterized by such intense energy that it was possible to melt consistently measured holes through the exterior and interior components of American military satellites, after having passed through the atmosphere of the planet and into space for as many as 325 miles. Such a thing has scarcely been dreamed of by the American military, much less put into any but the most nominally effective operational form.

After more than ten years of political, economic and technological wrangling, and after the expenditure of more than one hundred twenty billion dollars in largely ineffectual research and development efforts, it is inescapably clear that no amount of money or political pressure, no amount of geo-political posturing or economic sanctions was going to compel the disclosure or replication of the technologies which produced the results photographed over the Carpathian Mountains and the Afghanistan deserts. The Soviets had developed a weapons system which was so revolutionary that it could not be explained, replicated or defended against.

The Reagan Administration's lack of specificity about the nature of the implied threat to which S.D.I. was supposed to respond subjected the Administration, the Defense Department and the R&D proponents of the most prominent American aerospace corporations to an endless barrage of charges by the Press and the Congress. They were characterized as being disingenuous and accused of being unreasonably secretive during successive appropriations battles in the Congress.

The truth of matter is that the Administration and the Pentagon were not being disingenuous at all. They simply could not admit to the American public that they were attempting to develop an effective response to a weapons system which they did not understand and could not replicate.

There are a number of issues intrinsic to this set of circumstances, along with several dozen others which, though less well known or economically dramatic, are no less important from a technological standpoint. It is certain that the implication of these technologies has not been lost on those multi-national corporations whose entire capital structure may be threatened by the new sciences, technologies and materials which have been developed in secret laboratories, hidden in caverns excavated beneath the Carpathian Mountains, in the former Soviet Union.

Over the past decade the West has enjoyed occasional gratuitous glimpses into the heart of Soviet science. Attempts to disclose or discuss these developments in the press have been ruthlessly suppressed by powerful special interests vested in both the public and private sectors.

The science which underlies the series of events recounted here remains at the outer limits of the most advanced technology of which the West is capable. The questions posed by the military and corporate analysts about this laser beam weapons system are far-reaching in their scope and implications. Some of them are illustrative:

1) **New Model of Quantum Mechanics:** The sciences and models of quantum mechanics which produced such stunning recent developments in the West as the laser and maser make quite clear how much energy is required to create a beam of coherent light powerful enough to penetrate the atmosphere, retain its coherence in spite of atmospheric diffraction (and other effects described in quantum mechanics as “thermal blooming”), and melt a two-inch hole clear through a satellite made of the most sophisticated alloys ever produced in the West. Except for limited short-distance demonstrations conducted with industrial grade lasers used in cutting operations, there is no known combination of materials or technologies extant in the West to make such a thing possible.

2) **New Materials:** The materials necessary to create an electrical charge large enough to power a device capable of producing such a beam certainly do exist. In quantum mechanics the term large enough does not make sense, but we can agree for the purposes of this discussion on the effect of it as represented by such commonly accepted constructs as frequency, voltage, current and ionic flow rates [as distinguished by the phenomenon of resistance].

Hydroelectric plants and large, fixed-base nuclear power plants are capable of producing enough energy to theoretically power such a device. But the energy bursts in both the Carpathians and the Afghan desert were generated by sources which moved from one location to another. In order to do that, several additional considerations must be addressed:

a. **Portability:** The power source would have to be transportable or be capable of storing sufficient energy to repeatedly power such a device. Western technology cannot produce either a portable power production unit or energy storage system capable of the performance requirements everyone agrees must be met to make the weapons system work, either in the laboratory or in the field. System portability was the most puzzling feature of the NSA/DIA report.

When carefully analyzed, the computer-enhanced enlargements of the photographs taken by the spy satellites and AWAC’s crews failed to provide evidence of any tracks which could be attributed to wheeled or tracked vehicles operating in the precise locations and at the same time as the laser bursts which were observed. The implications of this set of circumstances was almost too much to believe – the devices were apparently either hand held or transportable and rechargeable in such a way as to allow them to be transported by one or more foot soldiers, without vehicular support.

b. **Enormous Power Requirement:** The materials and technologies used to construct a device capable of generating a beam of such enormous power and magnitude would have to be sufficiently advanced to enable the components to be transported without damage over significant distances in unpaved areas of very rough terrain. Such strategies, engineering techniques, construction technologies or materials do not exist in the Western inventory.

c. **The continuous repetition** of the laser bursts suggests that the devices can be operated repeatedly at short intervals of 12-15 minutes. This means they can be triggered with significantly higher frequency and intensity than anything which can be produced in the West, even for laboratory use. Industrial strength lasers used to cut metals require careful setup, accommodate only limited use in short bursts, require extensive cooling and must be continually recalibrated. These limitations obviously did not apply to the devices being operated in the Afghan desert. Analysts at AMTL agreed that the units would either have to be recharged via an external, independent device or somehow be capable of self-recharging in the field.

Such a thing is almost unthinkable by current Western military standards. Not only can we still not replicate the technology in any meaningful form, but the Soviets had refined the technology to a point which allowed it to be carried on the shoulders of ordinary foot soldiers and recharged in the field without motorized support.

Unbelievable! How was such a thing possible? According to some of the highly qualified scientists who scrutinized the photographs, it is not possible. The “Not Invented Here” syndrome is alive and well in the American engineering community. Some of them still insist that the pictures were either fabricated or demonstrate something completely different than this narrative suggests.

3) **Energy Recharge-Batteries:** How did such high-intensity laser beam generators get recharged in the middle of the Afghan desert, in the absence of powered support vehicles or fixed-based power plants? There are a number of possible alternatives. They could have been powered by some sort of advanced battery technology. It’s possible, but if the battery technology used in the West is used as a model to support such a thesis, it would take a bank of the most sophisticated batteries ever designed by NASA, arrayed in series and parallel configurations larger than five full-sized Soviet T-60 tiger tanks to power such a device.

This theoretical battery bank, operating at 100% efficiency (which is not practically or theoretically possible; the best batteries manufactured in the West operate at less than 60% discharge efficiency), could conceivably produce enough direct current voltage (in a zero resistance super conductive circuit, which is not possible, either) to perhaps produce one burst of light equal in intensity to 20% of the power required to burn a 2-inch hole through a satellite moving at 20,000 miles per hour at a distance of 325 miles. Soviet ground forces were generating bursts of this magnitude every 12-15 minutes for more than 10 hours with nothing but ground troops. During eight hours of this exchange, it was totally dark. Something pretty remarkable must have been going on to make such a thing possible.

4) Energy Recharge – Solar Cells: Another alternative would have been to have whatever energy storage devices were being used to power the “laser cannons” recharged by sunlight. The state-of-the-art in photo-voltaic cells produced in the West simply would not support such an undertaking. The very best solar cells ever produced in the West have been produced by the Japanese.

These cells operate at a maximum of 19% efficiency - that is, they convert as much as 19% of the ambient visible sunlight shining on a clear, cloudless day into ion flow, which then becomes low voltage direct electrical current flowing through a circuit. The Japanese panels require months per section to manufacture and literally cost more than their weight in gold to manufacture. They are very heavy and are so sensitive to vibration and calibration that once installed, they cannot be moved at all.

Photo-voltaic cells capable of providing enough electricity to recharge a theoretically infinite energy well would have to operate at efficiencies of 50-80% to recharge batteries of infinite electrical capacity with enough power to trigger such a device. Such cells would have to be very light weight and able to withstand extremes of heat, cold, vibration, dust, wind and other conditions encountered in a hostile battlefield environment. Nothing like that exists in the Western technological arsenal.

5) Dielectric Materials – Transformers and Capacitors: Another consideration must be reconciled before this issue can be theoretically put to rest. In order to produce a burst of coherent light of sufficient intensity to have the effect which was observed and recorded by the surveillance teams, the voltage and amperage required to support such a device would have to be staggeringly high. In order to operate at all, the voltage supplied to the system must be released all at once, not in a continuous stream but in a single coherent burst so intense that any materials known in the West would either evaporate or melt. Not only would the best dielectric materials known to Western Science melt because of the heat produced by such enormous energy bursts, but before a bolt of energy of this magnitude could even be released to such a device, it would have to be accumulated and stored somehow.

A similar set of requirements of a less dramatic type is present in all the electronic devices manufactured and marketed in the West. This includes the entire range of electronic devices such as VCR's, computers, televisions and sound components, telecommunications, information storage, transmission and retrieval systems of every kind. We could not live as we do without them. The components which convert, store and release ion flow into the circuitry of these devices are known as transistors, transformers and capacitors.

This discussion delves into a slightly technical area here, so non-scientific types will need to either become familiar with the fundamentals of electricity to understand what is meant or simply give it a possibility that what is developed in the next section is a true representation of the way such things actually operate. The discussion deals with such commonly used and seldom understood concepts as voltage, current, frequencies and resistance.

(a) Transformers convert voltage at one level of current (amperage) to either higher or lower voltage levels. When the voltage is increased, the amperage or current is proportionately decreased. A low voltage produced at a high current level can be transformed into a much higher voltage at a proportionately lower level of current or “power.”

(b) Capacitors: The decrease in amperage which accompanies a transformation of low voltage to higher voltage is often compensated for by a device known as a capacitor. In the most simplistic terms, capacitors “store” electrical energy until the amount of voltage and current reach a certain minimal threshold. When that point is reached, the entire store of energy is released all at once in a single burst.

The tantalum materials used in the West to manufacture such devices conform to certain standard rules which are commonly accepted by electrical engineers. These rules have only recently been stretched by new technologies and materials developed in the West. For the purposes of this discussion, though, it is safe to say that electrical engineers have long relied on these rules because they have always produced the same results when applied in the same way. Here's an example.

It is standard engineering fare which dictates that a transformer capable of accommodating one volt at one ampere of current across a grid of one ohm of resistance will be one cubic meter in dimension. If followed to its logical conclusion, this standard rule of electrical engineering would require that a transformer capable of supporting a laser burst device of the kind operated by the Soviet ground forces in the Afghan desert would have to be approximately the size of a building built on a base 100 feet to a side, nearly 150 feet high.

Surely such a device could not have been hidden from the AWAC's eye in the sky which can clearly photograph the letters on a license plate from 60,000 feet altitude, nor could it have been moved on the shoulders of ground troops without wheeled vehicular support. The fact that there was absolutely no trace of such a huge, massive transformer device (or any other kind of structure or vehicle which could be construed to serve that purpose) means that something else must have been used instead. Military analysts had absolutely no idea what it could have been.

Such a burst system cannot operate without a capacitor of some sort. A capacitive device capable of storing the amount of energy required to power a single burst from a laser cannon, made of the most advanced dielectric material known in the West, would have to have been equally massive and, further, would have to have been cooled by some sort of strategy which would have been instantly and unmistakably detected by the infrared cameras and spectroscopic scanners used aboard the AWAC's and the spy satellites which investigated the scene.

The practical requirements of such a system are best demonstrated by the massive equipment required to operate and cool the Super Conductor Super Collider linear particle accelerators recently designed by the United States and Japan. No evidence of any such capacitive device was recorded in either the Carpathian Mountains or the Afghanistan desert. How can we explain it?

Without going into any detail about how the technologies were developed, suffice it for now to say that the Soviet ground forces in Afghanistan were equipped with a prototype of a hand-held plasma beam accelerator, the likes of which had only been roughly imagined by American military analysts. The device relied on some innovative strategies. Among these were:

Energy Storage Devices: The power source for the Soviet light cannons was comprised of a back-pack array of specially designed energy storage devices. The closest thing we have in our vocabulary to compare to them is described by the term "battery." In the limited sense that these devices store electrical energy, they are batteries. Any other similarity to the batteries we are accustomed to in the West ends there. The literal translation of the Russian name for them is energy accumulators.

The batteries relied on in the West are based on the chemical properties of components which, when combined in certain configurations and proportions, interact chemically with one another. The result of this chemical interaction is that it creates both heat and a stream of liberated ions – electricity. In dry cell batteries, the process of chemical interaction is one way – once they have been expended, they are simply disposed of. It is estimated that more than 12 billion expended dry cell and lead-acid batteries are dumped into America's landfills every year.

Other batteries are designed and constructed so that the chemical reactions which liberate electrical current are reversible in some degree. These rechargeable cells are characterized by the lead-acid batteries which are used in automobiles and in commercial and industrial applications. Various strategies have been developed to make batteries relying on chemical reactions maximally effective, but the theoretical limits of effectiveness of such devices have surely been reached.

A consortium of aerospace companies working with NASA recently announced the development of an advanced sodium-hydride-based rechargeable cell which is the most efficient battery yet invented in the West. Unfortunately, it operates at an ambient temperature of 2000 degrees centigrade and, if allowed to reach temperatures outside a very narrow safe operating zone, will explode with the force of a small thermo-nuclear device of approximately ten-kiloton yield. It is not safe, but it is the best Western science has come up with.

The energy storage device developed by the I.N. Frantsevich Institute for Problems of Materials Science (IPMS), Kiev, Ukraine, works on a completely different principle. Its construction is the result of a completely unique nonlinear quantum mechanical model which makes it possible to create crystalline lattices of absolutely pure carbon (and other materials) in sheets of infinitely variable dimension which are exactly one molecule thick. The crystal formation techniques and the whole body of new science which allows for their creation in the first place are completely unknown to Western science.

The mono-molecular sheets deposited by this technique are wrapped back and forth on top of each other, more than one million times per millimeter, and are separated from each other by a distance of less than one atomic diameter. At this level of construction, the material becomes subject to the rules of quantum mechanics which are almost entirely probabilistic. That means a whole atom of carbon (or almost anything else except an electron or photon) will not fit in the space which separates the lattice sheets.

When viewed under an electron microscope, the sheets produce a pattern which looks for all the world like an endless field of four-sided pyramids, connected base to base, on a single plane, with the tips of the pyramids protruding endlessly, uniformly upwards. When wrapped back and forth on top of each other, these sheets of pure carbon crystal, made of carbon molecules shaped like trillions of identical tiny pyramids, all arrayed endlessly in identical formation, are positioned so that the tips of the pyramids on the bottom sheet are matched with the tips of the pyramids on the top sheets. What remains between the pyramid tips are open “spaces” or energy wells.

The quantum physics which describes the characteristics of the energy wells created between the layers of crystalline lattice is largely unknown to Western physicists. The Soviet model predicts with a high degree of probability that the quanta of energy referred to in the West as electrons (and, in some cases, photons), the stuff of which electricity is made, will, when introduced to the lattice structure, search, find and fit into the energy wells with military precision.

During the recharging or loading phase, the energy storage devices made of the crystalline lattice material channel one electron at a time into each well created by four carbon pyramids on the bottom layer and four carbon pyramids on the top layer. Because the rules of quantum mechanics which operate in this tiny environment demand it, each electron or quanta of energy has a certain polarity, spin and “color” (and other mathematically defined characteristics) which must be accommodated if it is to find, fit and stay in an energy well. Interestingly enough, when a current is applied across the lattice-work structure, the electrons behave precisely as nonlinear quantum mechanics predicts they will. They flow much like a fluid into the lattice field, then separate into individual energy quanta and spin into the last energy well in each layer, automatically adjusting their individual spin, polarity and color to match their characteristics to fit the requirements of each well, until the lattice is full.

Because no chemical reactions are involved in the process of marching electrons into or out of the energy well fields, there is no resistance in the circuit. In the absence of resistance, the electrons fill the wells at light speed, never missing a space, automatically adjusting polarity, spin and other characteristics, and creating no heat. The amount of time required to “charge” such a cell is less than 5% of the time required to recharge a conventional chemical battery of similar voltage and current.

The validity of $E = MC^2$ is called into question by the way these devices function. When the battery is fully charged, it actually demonstrates more mass than when the energy storage device is empty or discharged. The laws of quantum mechanics relied on in the West state categorically that this is not possible. It is the answer to the question, “How much does a beam of light weigh?”

According to the Soviet model, this is precisely as it should be. When this phenomenon was first demonstrated to scientists in the West who were testing the energy storage devices at INEEL in Idaho, they were thunderstruck. The quanta of energy, or electrons as we refer to them, which are poured into the crystalline lattice demonstrate characteristics of mass even though they are bundles of pure energy sitting in stasis, literally at rest. The characteristic of mass is verifiable – you can measure it by weighing the energy storage devices before and after they are charged. When they are charged, they demonstrate appreciably more mass than when they are fully discharged.

If this is confusing to you, to suggest that pure energy can be shown to demonstrate verifiable mass while at rest (in stasis), perhaps you can begin to appreciate how fundamentally different the physics of all this is when viewed in the terms of Einstein’s classic equation $E = MC^2$.

The existence of this technology clearly is proof positive that not only does energy demonstrate the characteristics of mass, but it does so in a state of non-motion or stasis, sitting idly in an energy well. A state of stasis is a very far cry from the terminal theoretical velocity required by the constant in Einstein’s equation, equivalent to the square of the speed of light.

The scientific implications of this phenomenon are truly staggering. At very least, the verification of mass as a property of energy quanta at rest suggests that Einstein’s theory of relativity may be altogether incorrect as a means of describing the dynamics underlying the real nature of the material world and its relationship to energy.

The existence of this technology suggests, at very least, that energy and mass are equivalent characteristics of all things which are manifest in the material world. It is this fundamental contextual difference which distinguishes the Soviet model of quantum mechanics from the Western model. "The proof of the pudding," they say, "is in the eating."

Theoretical physicists may argue endlessly about the validity of the assumptions relied on by the IPMS scientists to develop their unique sciences, technologies and materials. But they cannot argue about the existence of the materials which have arisen from that context. They are as real as they can be. And they are unlike anything ever seen or contemplated in the West.

In the same way energy quanta stored in the energy wells of crystalline lattice materials demonstrate complete mathematical satisfaction with staying there indefinitely, when allowed to flow out in the form of an outgoing wave of electrical discharge, these quanta (electrons or photons, as you prefer) march right back out without resistance at light speed through a closed circuit to another use.

When these energy storage devices are discharged, they demonstrate other attributes which are not known in Western science, and which, because of the very nature of the chemical reactions we are accustomed to, are not theoretically possible according to conventional wisdom. Conventional chemical batteries, when fully charged, produce electric current at a useable voltage for perhaps 30-40% of the total discharge cycle. After that, either the voltage or amperage (or both) drop to low enough levels that the devices being powered by them cannot recognize or use the electrical current which remains available. At that point, the batteries either have to be recharged or replaced.

The crystal lattice batteries have been demonstrated to produce precisely the same current and voltage levels throughout 98% of their discharge cycle. They produce no heat during discharge, regardless of the rate at which they are discharged. This is absolutely contrary to our experience with batteries, transformers or capacitors. Until the crystalline lattice materials were specifically engineered to register an electronically detectable blip at 95-96% discharge, it was impossible even for the scientists who developed them to distinguish a partially discharged battery from a fully charged one.

There is another characteristic which is intrinsic to energy storage devices which comes into play here. It is a characteristic of materials which is described as energy density. For non-scientific readers, this concept can simply be construed to mean the amount of measurable electrical current which can be produced by any device or material when its mass is converted into electrical energy. The concept is expressed in mathematical formulas as the number of watts and hours of consumable energy which can be converted from each kilogram of material. It is expressed as watt-hours per kilogram.

Here is an example we can all understand. Consider gasoline. When converted into electrical power at 100% efficiency, gasoline has been theoretically shown to have an energy density of between 550 and 600 watt-hours per kilogram of mass. In easy terms, that means that if one kilogram of gasoline were converted into pure electricity at 100% efficiency (with no loss due to heat, resistance, waste, etc.), the reservoir of energy would power a 100-watt light bulb for 5.5 to 6 hours.

Most of the high-end conventional automobile batteries of the lead-acid variety operate at an energy density rate of between 20-25 watt-hours per kilogram. The best NASA sodium-hydride batteries operate at 48-50 watt hours per kilogram. The energy accumulator devices which have been tested at the Idaho National Electronic Laboratories have demonstrated energy densities of between 850 and 1050 watt-hours per kilogram.

What does this mean in practical terms? It means, for one thing, that for the first time in the history of science an energy storage device has been created with an energy density which is greater than gasoline or any other refined fossil fuel. It means that devices which rely on these energy storage technologies can theoretically be designed to store and deliver clean electrical power at higher rates of efficiency than any fossil fuel ever discovered.

The global implications of this technology are irresistible. It means, among other things, that the technology exists, right now, to eliminate the need to build another nuclear power plant or dam another river to produce hydroelectric power. It means we can no longer justify burning another ounce of petroleum, another piece of coal, another cubic centimeter of natural (or unnatural gas) or another tree to produce heat, electricity or power for any purpose, including transportation.

When coupled with the plasma beam devices being tested by the Soviet infantry units in Afghanistan, these energy storage devices operated at such unbelievably high rates of discharge efficiency that they made it possible to repeatedly induce huge electrical discharges in a highly mobile configuration.

The same technologies which were used to produce the energy storage devices have been adapted to create transformers and capacitors with previously unimaginable performance characteristics. Instead of adhering to the conventional western model of "One Volt at One Amp across a resistance of One Ohm equals One Cubic Meter," the Soviets have produced a capacitor which measures more than 1200 farads at 10,000 amperes in a package the size of a tuna sandwich.

When tested by the Technology Materials Testing Laboratory of the Defense Department at the Pentagon and at the I.N.E.E.L. in Idaho, totally new testing equipment had to be designed, engineered and constructed just to test the devices. The scientists at those laboratories had never tested anything like these materials before.

Instead of having to house transformer and capacitor devices in a series of trailers towed by diesel tractors or huge fixed-base facilities, the operating apparatus which supplied transformed power and high intensity capacitive bursts to the light cannons weighed less than ten pounds and could easily be transported in a backpack by a foot soldier.

One final question remains unanswered. "How did the energy storage devices, once dissipated or discharged, become recharged in the field, especially in the dark of night?"

The back-pack plasma beam device detected by the AWAC's during limited combat use in the Afghanistan desert was powered by energy storage devices constructed of crystalline lattice materials. After each laser burst, the energy storage devices were recharged every 12-15 minutes (nearly 45 minutes in the dark of night – the residual ambient heat of the desert is a very efficient source of infrared energy) by sunlight, collected and converted to electricity by four-foot square panels of "solar cell" material arrayed on a pole like a flag, each weighing less than ten ounces.

The electrical energy stored in the back-pack energy accumulators was transformed into enormously high voltages and released at almost unbelievably high current levels when the super-capacitors were sufficiently charged. The beam of "light" detected by the AWAC's crews was a field of plasma, flowing at the speed of light and demonstrating characteristics of mass (and, therefore, kinetic energy). The phenomenon represented by these bolts of lightning are not comprehensible according to the model of quantum mechanics and plasma physics currently being used in the West.

Battery packs utilizing these energy accumulator materials have been designed, produced and tested which provide more than 14 hours of continuously transmitted power on a single charge to conventional hand-held cellular telephone devices. Similar improvements in conventional battery/energy storage capacity have been developed and are being tested for such devices as video camcorders, laptop and portable computers and other similar consumer, commercial, industrial and military applications.

IPMS research in the field of layered crystals has thus led to the creation of capacitors with a very high level of capacitance (measured in farads). This technology is based on a revolutionary production technique which forms polarized surfaces of one molecule thickness, separated by less than one atomic diameter of space, held together by weak Van der Waals energy forces. The special properties created by these layered crystalline structures provide previously unimaginable internal surface areas. Super capacitors are constructed of layered materials numbering more than one million dipole sheets for each millimeter of crystal thickness.

These devices provide a virtually limitless number of charge-discharge cycles at astonishingly rapid charge and discharge rates. The potential impact of such devices on all electronic equipment currently being produced is incalculable, since virtually all electronic devices rely extensively on the West's state-of-the-art tantalum capacitance technologies.

At present, IPMS has on hand (among others) a super-capacitor roughly the size and dimension of a sandwich which develops more than 1,200 farads at 10,000 amperes. It also boasts production of a battery whose active mass energy density exceeds 850 watt-hours per kilogram. For the non-scientist (and all the rest of us as well) this means that a "battery" has been produced which, for the first time in history, produces more power per unit of mass than any fossil fuel ever devised.

Prototype testing of larger-scaled devices designed specifically for providing power to electric vehicles is currently underway. Prototypes are expected to be capable of sustained highway speeds of up to 70 miles per hour with a range of 525 miles on a single charge. The power plant for this application has been recently improved by the inclusion of a proprietary solid-state ceramic electric motor which weighs 7.2 kilograms and produces 100 horsepower on 12-volt direct current. For comparison, an electric vehicle employing a 100-horsepower electric motor performs the same as with a 500-horsepower gasoline engine.

If these performance attainments can be sustained in broad-based applications, electrically powered vehicles could be produced which would meet or exceed virtually all performance characteristics currently available in equipment relying on internal combustion, petroleum-based engines. Gasoline/diesel-powered transportation devices can be replaced by cleaner, more efficient and significantly less expensive alternatives.

The world market for current energy storage applications which will be superseded by these energy storage technologies is estimated to be in excess of \$24 billion per year (1991), exclusive of electric vehicle considerations.

Joint ventures of the IPMS with more than a dozen private sector companies to develop useful energy inventions have been repeatedly sabotaged by the U.S. Government's Defense Intelligence Agency and others. (Source: David G. Yurth, *The Anthropos Files: Tales of Quantum Physics from Another World* – 2nd Edition, 2007)

IPMS: High-Temperature Gas Plasma Detonator

Since its establishment in 1951, the I. N. Frantsevich Institute for Problems of Materials Science (IPMS), Kiev, Ukraine, has been secretly developing, testing and producing more than 130 new materials in 30 general materials categories. IPMS scientists have developed a whole new science based on their unique model of plasma physics. With their invention of a high-temperature gas plasma detonator, strategic metals and other commonly used materials can literally be sprayed onto the surface of other, previously incompatible materials. These gas plasma detonation spray technologies make it possible to create permanent molecular bonds between materials which could never be married together before.

Chromium materials of an entirely new type have been developed to provide high-purity cathodes and targets. Moldable, flexible chromium (a type of material never before available) can now literally be sprayed to conform to widely varying shapes for linings (i.e., to reduce internal pipe corrosion), provide nuclear rod protection, and highly effective space hardening. These techniques have been perfected and used in practical field applications for more than 35 years.

The unique nature of these technologies may not be readily apparent to those not intimately familiar with the commercial and industrial uses of such materials. In more ordinary applications, however, the importance of being able to provide solid targets, stand-alone ingots of ultra-pure chromium, scandium, magnesium and other exotic materials, cannot be overstated. Today, the state-of-the-art in the West only allows chromium, for example, to be transported and used while in solution with other highly toxic liquids. Western scientists do not have the ability to produce free-standing ingots of any of these materials. The manufacturing models which rely on Western science make it clear that it is not theoretically possible for such materials to be produced in a free-standing form.

Similar materials coupled with the technologies of high-temperature gas plasma detonation have been developed for coating internal combustion engine parts to extend life cycle. They have been applied to enhance the performance characteristics of memory elements for computers and to support an extraordinary variety of totally new electronic circuitry. This technology has been successfully used to produce computer circuit boards whose operating components are intrinsic to the circuitry, thereby eliminating the utility or need for soldering or pin housings. The use of scandium, a very rare and exotic element available only in the Carpathian Mountains of Ukraine, make much of this possible in ways not anticipated by Western science.

IPMS-Kiev scientists have developed a series of diamond and cubic boron nitride powders which are smaller and more uniform than any other manufactured today. Also available in this family of materials are very fine (sometimes mono-molecular) ultra-high purity powders and liquids of refractory metals including chromium, vanadium, tungsten, scandium and molybdenum. These powders can literally be sprayed as a plasma field to form continuous, seamless, flexible molecular bonds with host surfaces without electrolytic processes. These materials demonstrate clearly superior performance in tool hardening, cutting edge equipment and polishing.

IPMS-Chernovitsky scientists have developed an entire family of previously unknown technologies based on woven fibers made entirely of 100% pure basalt fibers (lava rock). This totally new technology allows for the production of flexible, weave-able threads. These fibers are fundamentally resistant to heat, demonstrating a softening point in excess of 800 degrees centigrade. Fibers of this material have been produced in diameters of less than 3 microns (millionths of a meter), more than 10 times smaller than a human hair.

Allied Signal Corporation in the United States has attempted unsuccessfully for more than twenty-five years to produce a single fiber of a similar type material. Today, the Ukraine has the capacity to produce these raw fibers at the astronomical rate of 100 tons per month.

These materials are currently being produced in applications involving brake shoes and clutch plates with extraordinary performance characteristics. These materials sustain only about 15% of the wear currently attributed to asbestos-based materials used in identical applications, with the added advantage that they are environmentally friendly (non-toxic and non-polluting). In current applications, parts fabricated of basalt fibers actually operate at higher efficiencies as surface temperatures are increased, up to operating temperatures exceeding 800 degrees Centigrade.

Basalt fiber materials have also been shown to demonstrate superior insulating capabilities over commercially available materials in applications involving both temperature and sound. They have been used in applications related to mine roofing, trays of water cooling systems and as both gas and fluid filters. A four-inch deep pile of 5-micron filaments has been shown to demonstrate heat insulating properties in excess of R-65, which is nearly four times the efficiency of glass fiber equivalents, at one-half the weight.

Further, basalt fibers have been woven together with threads of tungsten, chromium and other strategic metals to produce cloth materials with previously unheard of characteristics. Woven metallic threads and fabrics of this type have never before been produced anywhere in the world.

This writer, Gary Vesperman, has included in his "Advanced Self-Powered Electric Vehicle Concept" (see <http://iiic.de/docs/GVShortSummaries1-46a.htm>) a monocoque (unibody) basalt/carbon fiber foam body/frame. The IPMS-manufactured basalt/carbon fiber foam is extremely strong yet lighter than fiberglass. A test vehicle made with basalt/carbon fiber foam parts was reportedly the only vehicle ever tested that can cut through a cast-iron London taxicab in a collision.

To utilize this technology to create an automobile enclosure, three technologies are needed:

1. The basalt fiber technology can only be found at the IPMS. There may still exist some spools of the stuff in or around Kiev. The principal value of the material is that it has a softening temperature of 805 degrees centigrade.
2. The Russians use powdered metallurgy to alloy their strategic metals – the ideal mix of metal powders would be aluminum and magnesium. Since both can be found in finely particulated powders and when mixed together in the right ratios, these two metals form a material which is utterly resistive to corrosion and which has excellent tensile strength.
3. The powdered metals are mixed in a chamber like dry cake mix and then applied using a third technology – in IPMS documents, this technology is referred to as a "High-Temperature Gas Plasma Detonator". The metal powder is poured into a ceramic container, which funnels it into a specially designed high-temperature containment vessel which is also surrounded by super magnets (see IPMS-Kiev and Arzamas-16: Super Magnets elsewhere in this energy invention suppression compilation), arranged in a very precise order to create a compressive effect. When the powdered metal is brought into the chamber, high voltage, high pressure and extreme magnetic fields reduce the metal powder to a plasma, which is then expelled through a nozzle and onto a target – in this case, the woven basalt fiber which creates the shape of the vehicle.

When the metallic plasma collides with the basalt fiber material, it has a temperature of about 1600 degrees centigrade. This causes the basalt fibers to soften and partially melt – but the cooling gradient for this material is so steep that it cools almost immediately below 800 degrees centigrade, at which point the fibers reconstitute. This creates a basalt fiber-reinforced metal-alloyed shell which is extremely strong, very light weight and can be polished to a high sheen.

This is the technology the Russians have used for 35 years to create fuel cells for their huge rocket boosters – and it is the reason their boosters are so light, have no gaskets or seams and can be reused over and over again. It is primarily because of their extensive use of these integrated technologies that the Soviet space program has been able to consistently deliver larger payloads into orbit than any other nation since the space race began in 1957.

Joint ventures of the IPMS with more than a dozen private sector companies to develop useful inventions have been repeatedly sabotaged by the U.S. Government's Defense Intelligence Agency and others. (Source: David G. Yurth, *The Anthropos Files: Tales of Quantum Physics from Another World* – 2nd Edition, 2007)

Remy Chevalier (Reporter): NiMH Batteries; Solid-State Lithium-Ion Batteries

The best Nickel Metal Hydride (NiMH) batteries are no longer on the market. Why? Because either Cobasys has no intention of ever mass producing powerful NiMH automotive packs, or they just don't know how, even though they own the patent. The cells they displayed at the last EDTA conference were bulky at best, and certainly a million years away from the level of engineering exactitude Japanese automakers expect from their suppliers.

Essentially Matsushita took some of the information from their original, but mediocre patents and developed a functional NiMH battery that gave a range of 160 miles to the General Motors EV-1 and 110 miles to the Toyota RAV4 EV. This Panasonic M95 was also getting 1-2000 deep cycles and 100,000-150,000 miles on a battery pack. Something the oil companies and Detroit automakers don't want on the market, despite the Fortune 500's good mood for natural capitalism.

So now that the best NiMH battery technology for EV's has been removed from commercial circulation, Toyota, Honda and Ford are stuck using inferior NiMH battery technology in their hybrids. Toyota has indicated it will take up to 4 years for the next generation lithium-ion (Li-ion) battery chemistry to be as reliable and affordable. Till then, it's touch and go as Toyota can't crank out enough hybrids off the assembly line to meet demand, especially in deliveries to corporate fleets, taxicabs and limousine services.

State-of-the art lithium-ion chemistry is in limbo at some California-based company who has managed to secure the exclusive production rights to the only Li-ion technology that really counts, roll-to-roll solid-state battery production. That's right; no more liquid chemistry... no leakage, no over heating, no explosion, extreme light weight, easy mass production! Just like printing mylar off a printing press! Just like laminating plastic photovoltaic sheets!

Instead more conventional liquid Li-ion chemistry is being pushed feverishly. Toyota is buying out major Li-ion startups in Asia. Other Li-ion battery companies like Valence, Electrovaya, Kokam, LG Chem have attractive polymer Li-ion batteries, but they are still all based on the older liquid chemistry model, and therefore more expensive and more complicated to produce.

The chemical genius who came up with the Li-ion solid-state polymer roll-to-roll protocol is a professor at MIT who does not own his own technology. MIT owns the technology, and it is the MIT licensing office which gets to decide what companies do or do not get awarded these licensing rights. This revolutionary technology has been in limbo since 1995!

Is it because MIT is cashing checks from the Rockefeller Bros. and the Ford Foundation? Is it pure incompetence? Is it a repeat of the cold fusion debacle Gene Mallove wrote about in his book "Fire from Ice"? It's hard to tell as everyone involved is terrified to talk about it openly, which is why I am not mentioning any names. Frequent visitors to the Electrifying Times website know exactly who I am talking about!

My suspicion is that certain forces within the military, and now Homeland Security, do not want solid-state roll-to-roll Li-ion batteries from entering the civilian marketplace, the same way you can't buy Green, a special duct tape developed for Groton Electric Boat workers to strap metal parts, so strong it instantly bonds to the skin, requiring surgery if accidentally touched.

What a poor boy to do who wants to save the planet if the powers-that-be won't give him the affordable batteries he needs to make a 0 to 60 in under 3 seconds EV with a 200-mile range on a single charge? That's the question we should all be asking ourselves instead of lamenting about who killed the electric car!

The batteries are there, being manufactured for military applications all over Connecticut! If you want plug-in hybrids and 100% pure EVs so you don't ever use a drop of gasoline again, with equal to if not better performance than any liquid fuel engines, then ask yourself why MIT, since 1994, has done very little to get their solid-state Li-ion roll-to-roll battery patents into production. Don't follow the money; follow the trail of misappropriated and shelved patents.

Congress needs to put back into question the entire review process of patent law, and its consequences on environmental health, by imposing strict fines to whoever is caught buying patents for the sole purpose of keeping its protocol out of commercial circulation. (Excerpted from "Who Killed Better Batteries?" by Remy Chevalier, *Electrifying Times*, spring-summer 2006, Vol. 10, No. 1, www.electrifyingtimes.com.)

(Erik Masen adds more details in his "Suppression of Quantum Leap Inventors" *Electrifying Times*, 2007, Vol. 10, No. 2)

Chevron-Texaco bought into a Detroit company, Stanford Ovshinsky's Energy Conversion Devices (ECD), and changed their name to Cobasys. ECD held the original patents on nickel metal hydride battery technology, but never successfully marketed a turnkey NiMH battery for major markets. They did sell a considerable amount of NiMH batteries to GM for the EV1. Panasonic came along and refined this NiMH battery technology into an indestructible battery of higher energy density and longer life. That enabled the Toyota RAV4 EV (electric vehicle) to get 80-120 miles out of a battery cycle, and get over 100,000 miles of battery life out of this improved NiMH battery. ECD-Cobasys filed a lawsuit of patent infringement against Panasonic and won. This action essentially shutdown the import and use of the Panasonic M95 NiMH battery that was so successful in making EV's practical for the GM EV1, Ford Ranger Electric PU, and the Toyota RAV4 EV. As a result the proven very popular M95 90-ampere-hour NiMH is not for sale in the United States. ECD-Cobasys also put heavy licensing fees and restrictions on the NiMH battery used in the Toyota's present hybrid fleet.

Paul M. Lewis: Airmobile

In 1936, Paul M. Lewis designed a three-wheeled car that looked a lot like the present Volkswagen bug. He called it the "Airmobile", and his original model is still on display at Harrah's auto Museum in Reno, NV.

Though Lewis had not known what Dr. Ferdinand Porsche was doing in Germany, the Lewis Airmobile was amazingly similar to the popular VW beetle.

Both vehicles were low cost, simplistic in design, used horizontal opposed four-cylinder air-cooled engines, transaxles, independent suspension systems and unitized body construction.

When World War II came along, it sent VW soaring in Germany, but killed the Airmobile. Porsche fit into the German establishment, but Lewis was a "crackpot" inventor and a pain in the neck to the economic status quo.

The VW beetle's popularity proves that Lewis' original idea was valid and worthy, despite the laughter from Detroit.

The Airmobile was driven out of business in the late 1930s by the Securities and Exchange Commission and the U.S. Postal Department, who have been called bureaucratic flunkies for the oil-auto monopoly.

"I was harassed for two years, and they refused to let me sell stock in my company on the pretense they were investigating possible wrongdoing," Lewis said. "After I was beaten down, they sent representatives to tell me they found nothing wrong, and I could sell stock. A man can't make a dead horse walk."

After losing the Airmobile, despite driving it through 26 states for more than 45,000 miles without a repair, Lewis went from Denver to Los Angeles, where he continued inventing.

Joel McClain and Norman Wooten: Magnetic Resonance Amplifier

On December 12, 1994, Joel McClain and Norman Wooten, two Dallas inventors, discovered that a magnetic resonance amplifier could be capable of over-unity gain energy conversion. The electrical output of their prototype was five times the electrical input. They made a point of publicizing their invention as widely as possible via the Internet right away so as to forestall possible suppression. Since then, they have authored articles on the magnetic resonance amplifier in *Electrifying Times*, *Extraordinary Science*, and *New Energy News*.

A personal friend of Newt Gingrich became very interested and arranged for the Physics Department at Georgia Institute of Technology to experiment with it. They were able to increase the gain so that the output is 18 times the input. Since they could not explain this according to conventional physics, they refused to publish their results for fear of losing the respect and esteem of their peers.

Gingrich had been following the MRA with keen interest so when his friend told him of the problem with Georgia Tech, Gingrich arranged for the federal funding of Georgia Tech programs to be cut off. The President of Georgia Tech who had been in the dark on all this began getting phone calls from enraged Georgia Tech professors. Then the Physics Department published their findings.

At the International Tesla Society Symposium in Colorado Springs (July 20-23), McClain and Wootan gave a lecture on their magnetic resonance amplifier. The oscilloscope waveforms of output vs. input they showed were very odd. They sort of loop around themselves.

A few days after the conference, Wootan's two-year-old boy had been abducted, Wootan was running for his life in Canada, and McClain was in hiding.

The magnetic resonance amplifier's claimed over-unity power conversion efficiency was later shown to be a measurement error. However, a past issue of *Electrifying Times* claims that Scott McKie has invented a solid-state over-unity electrical energy converter with an input of 15 volts, .438 amperes (7.25 watts) and an output of 34 volts, 127 amperes (4318 watts). McKie's converter apparently is a more advanced version of the magnetic resonance amplifier.

Al Wordsworth: Electrical Generator and Advanced Carburetor

The details are sketchy and second-hand, but inventor Al Wordsworth had to contend with harassment of both his advanced carburetor and electrical generator. His generator had an input of 3 amps at 12 volts and an output of 32 amps at 6 to 8 volts. He died some years ago. It is believed his generator design is lost.

John Richardson: 90+ MPG Carburetor; Atomic Isotope Generator

John Richardson invented a "carburetor improvement/adjustment mechanism" which enabled autos to achieve 90 to 100 miles per gallon of gasoline. Richardson also invented an "atomic isotope generator", about the size of a washing machine, which could electrify a 5,000 sq. ft. house or building for over 100 years at a minimal up-front cost. Vicious threats from big business to his life and his family persuaded Richardson to hide the prototypes and to stop further work. (Source: <http://center-for-natural-health.com/articles/richardson.html>)

Fish/Kendig: Variable Venturi Carburetor

In the late 1950's the Fish/Kendig Variable Venturi carburetors got some very interesting mileage figures. John Robert Fish had invented a carburetor that double the gas mileage of Detroit's standard carburetors. When Detroit snubbed his invention, Fish tried selling his invention through the mails to do-it-yourself mechanics. The Fish carburetor even got into production on a small scale.

He was growing successful when Post Office Department agents swooped down on him for "investigation of fraud". Several years later he was exonerated of any charges. But until then the mails to and from his business had been stopped during the lengthy "investigation". He was wiped out financially.

In the early 1970's a young college student (name unknown) entered his Mercury "gas hog" in the California Air Pollution car race and won hands down. He was using the Kendig Variable Venturi carburetor that a small company (name unknown) had manufactured in Los Angeles for racing cars.

Within a week the student was told to remove the carburetor since it wasn't approved by California's Air Resources Board (CARB). His car had reduced pollution and doubled the gas mileage (for that model). This may have been suppression conducted by the Air Resources Board. The movie "Who Killed the Electric Car?" accuses CARB as one of the "gang of killers" of GM's EV-1 electric car.

Dick Belland: 100 MPG Carburetor that Runs on Gasoline Fumes

In 1979 Dick Belland and his brothers and a nephew were experimenting with an automobile carburetor which ran on gasoline fumes. They stopped when Belland received telephone threats to be fitted with a pair of cement boots. For story see <http://www.byronwine.com/files/Dodge%20truck.pdf>.

Ron Brandt: 90 MPG Carburetor

Ron Brandt is the inventor of the perm-mag motor. He is now of retirement age. He has personally told this writer, Gary Vesperman, that he is scared of working on over-unity free energy machines.

When Brandt was a young man, he invented a 90-mpg carburetor. He was paid a visit by a man from Standard Oil, another man, and two men wearing U.S. Government Marshal uniforms. They told him that if he ever made another carburetor, they would kill him, his wife, and two young children. Brandt was quickly persuaded that his life wasn't worth a "damn" carburetor. He happened to think to memorize the badge numbers of the two US Marshals and so had an attorney in Washington, DC check with the US Marshal's office. They had no record of the two badge numbers.

Welton Myers: Myers' Efficient Carburetor

Welton Myers, Director of Technology for Pure Energy Systems, does not have a resume, as he has always been self-employed.

I, Sterling D. Allan, received the following information from him via phone interview today.

Though Welton attended Cornell University, with a major in Agricultural Engineering, that is not of significance to him. It didn't take many years before he came to the realization that the mainstream science he learned there is full of errors (techniques deplete soil of nutrients). He completed there in approximately 1954.

From 1954 through 1960, Welton farmed (mainly corn) and raised 50 dairy cows. Towards the end of that time he also dabbled in logging and mining.

From 1960 through 1975, he laid the foundations for what today is known as Habitat for Humanity. He set up non-profit programs in New York and California, taking groups of ten families who helped each other build homes, and learned skills in the process, which they could later use in a trade.

He helped build and renovate over 1000 homes during this time. Better Rochester Living is the name of the first program in New York, and Self Help Enterprises (SHE) was the name of his first program in California.

In 1975, he began building homes for profit when his funding dried up for the non-for-profit program he was doing. He built around 25 homes in the \$100k range.

Then in 1978 he had a serious accident that put him out of commission for physical labor until 1984. He was rear-ended by a car going 120 mph. "This was one of my most creative periods" he said, ironically, because it was also during this time that he had a very difficult time remembering the simplest things.

That was when he did the carburetor project in which he transformed a car to get three times the mileage. The organization he founded along with Bill Cope, "Knowledge is Power," held weekly seminars at Robert Wesley College, where people came to learn how to convert their cars to get three times the gas mileage.

That project came to a halt when his car was sabotaged, the pressure release valve being clamped down tight, causing his car to explode while he was driving it. The next day, as the car sat on blocks in his drive way, a trailer pulled up, and some men who told Welton's wife they were hauling the car for Welton (not true), towed the car away; and Welton never saw it again.

The blueprints are held by an associate today, but Welton does not recommend the design because of the high pressures involved (3000 – 6000 PSI), which could be dangerous if the car is in an accident.

It was also during that time (1983) that he built a magnetic motor along with Bill Cope and an inventor who said he had been involved with Tesla. The day after they announced that they were ready to open the technology to a public offering, the laboratory was raided, their equipment smashed, and their inventor was threatened at gunpoint to leave the country, which he did. That inventor had also been involved with John Searl and witnessed his flying saucer technology.

Welton later located the inventor in California, but he had Alzheimer's disease by then and couldn't remember anything.

Also during this time, for employment on the side to help cover expenses, Welton worked in a laundry designing the mechanical end of an automated system.

In 1984, Welton returned to working with COOP housing, starting with ten "slow" individuals who were not able to hold down jobs, and making a construction crew of them. At the end of two years, they built 7 homes for 7 of them. The other three were not able to get funding together for a mortgage. With some of this crew, he then went on to build more expensive homes, building 10 homes at a time, for example, in a new subdivision. Many of the homes were in the \$400 - \$500 range. They also installed around 100 solar panel systems during this time.

Then early in the 1990's he began to get involved in the patriot scene, helping people understand some of the inherent problems with today's tax structure, and helping them protect their assets. He was involved in Cleon Skousen's seminars with the National Center for Constitutional Studies. He learned how to create corporate shells with strong layers of protection.

Also during this time he began traversing the country meeting inventors and reviewing their inventions, to help facilitate their progress toward the market.

I met Welton about two years ago, and it was actually his phone conversation with me that spurred me to begin a "free energy" listing on my greater things website, which has grown into what it is today. We have been close friends and business associates (www.perentech.com) during that whole time.

I know Welton to be one of the brightest minds around. You would never know he's past 70 to speak with him on the phone. He remembers details of conversations and technologies better than I do, at nearly half his age. I look at him as one of the "grandfathers" of the Free Energy movement. --- Sterling D. Allan.

George Wiseman: Fuel Savers

George Wiseman is the President and Chief Executive Officer of Eagle-Research in Oroville, Washington (see www.eagle-research.com). George's research organization verifies, develops and distributes practical energy-saving methods and devices. Because he sells fuel-saving plans and devices, he of course is a target of suppression efforts that he describes in an email (copied below with deletions) that is displayed in <http://www.zpenergy.com/modules.php?name=News&file=article&sid=316>.

Date: Fri, 18 Apr 2003
From: George Wiseman
Subject: Re: Re: Suppression

>> I realize that 90 percent of the 'physicists' in these groups are simply here to block progress, to
>> maintain the status quo of disinfo and cointel -- preserve the monopoly of western deception and
>> newspeak -- to regurgitate the same NOTHING they have been programming us with for ten decades.
>
>Do you mean the same "NOTHING" that has made possible all of the following technology that
> conspiracy addicts like you take for granted?

Whoa there... The problems and perceptions here are extreme, yet both valid in context.

I don't want to spark a big discussion, for which I do not have time nor interest. But I just couldn't resist putting in my 2 cents because I see innocence and ignorance being displayed.

There have obviously been major advances in some fields, like electronics and medical science. Much worthwhile has been accomplished. But I submit that it has either been in spite of suppression or in areas where suppression doesn't exist.

For example; computers wouldn't have been implemented to the public, bringing down their cost and fueling greater research if lone inventors hadn't developed both home computers and operating systems that would have put IBM out of business. IBM was caught unprepared and did what they could to reestablish control of the new market.

Medical science is so dominated by 'vested interest' that they are trying to even label vitamins as 'drugs'. Cures for diseases are often ignored and even actively suppressed in favor of techniques that just treat symptoms and incidentally make much more money.

In other fields we are still using technology virtually unchanged (with only cosmetic changes) for over 100 years, like internal combustion. This is a field in which I have some expertise and where I have personally experienced suppression of several different kinds. I have given a few of the details in my newsletters: <http://www.eagle-research.com/newsletter/newsletter.html>.

The electrical power grid, radio, robotics, and the basis of much of the medical diagnostic was invented and implemented by Nikola Tesla around the beginning of last century.

I can prove beyond a reasonable doubt that 'Vested Interest' does suppress technology that would cause their 'investments' to produce less income. Depending on the particular technology, such as fossil-fuel consumption, vested interest could even be governments.

I have personally attended a meeting between industry and a trade school where the topic was what and how to train the students. I can verify that industry as 'vested interest' wants the students to ONLY fix what exists. They are taught what to think, not how to think. These meetings take place on a regular basis because schools need the 'donations' from industry and they want their students to be 'employable'.

I'm sorry to say that my experience is that this 'what to think' effect is spread throughout the education system, including professions such as 'physicist'. Some are open-minded enough to actually look at hair-brained 'alternative energy' ideas and try to educate when they see an idea that won't work. Most of those that discover an idea that will work simply disappear. I haunt old bookstores because I find them gold mines of information that has been eliminated from current teaching.

I have never had a legitimate customer complaint, yet my business has been investigated several times by various U.S. Government and 'public protection' agencies, because I sell 'fuel-saving' technology. I have had my own telephone company tell me that my telephone was tapped. I have had the post office 'lose' over \$50,000 worth of customer orders. These harassments are only a few of the barrage of suppression techniques that I live with everyday.

I could go on and on, easily getting labeled as a "conspiracy addict". Since I am an inventor in these technologies and have felt the suppression in many ways, I believe I have the right, and perhaps obligation, to tell people who live in comfortable niches that the suppression they are not directly feeling, is in fact affecting their lives.

We all could be living very much higher standards of living if only technologies that already exist were not suppressed. In the course of my 'alternative energy' research, I recently developed a 'spin-off' technique, using technology invented in the 1800's, to inherently eliminate the 'phantom load' and 'inductive losses' experienced by most transformer applications. In a lot of cases, particularly in small appliances, this would cut power consumption by over 50%. This single technique would save billions of watts. I can't even imagine how much power it would have saved if it had been implemented from the beginning of using AC electricity.

Anyone who thinks that suppression doesn't exist has simply not looked at the facts. For example; spending only a day in the patent office, I found that in the last 25 years there have been over 3500 fuel saver patents – not one of which is on the market. This is not because fuel savers don't work, because I prove everyday that there are fuel savers that do work. It is because the suppression mechanism is in place and 'self-propagated' by people who have no idea that they are part of the process. They are only propagating what they were taught to believe.

I don't dwell on it, but suppression is very much a reality in my life. It is why I structure my business as I do. I am a self-employed inventor and have been since 1984. I do not patent. I distribute full facts on my developments directly to the public. I do not sell 'devices' that trigger the major suppression responses.

That's my 2 cents. I felt obligated to say it. It may not be fair, but I will not respond to discussion on this subject; it's already taken two hours of my time to compose this email.

Thanks for reading.

George Wiseman
President, CEO of Eagle-Research
<http://www.eagle-research.com>

Tom Ogle: 100+ MPG Oglemobile

Tom Ogle's Oglemobile ran on fumes extracted from a heated tank in the trunk without a carburetor (see US patent 4,177,779). The media witnessed a test of a 4,600-pound 1970 Ford Galaxie which was driven 200 miles on less than two gallons of gasoline. Ogle predicted that an economy four-cylinder engine would achieve 260 to 360 miles per gallon.

A Shell Oil Co. representative asked Ogle what he would do if someone offered him \$25 million for the system. Ogle responded "I would not be interested". He later said, "I've always wanted to be rich, and I suspect I will be when this system gets into distribution. But I'm not going to have my system bought up and put on the shelf..."

The August 1977 issue of Argosy magazine which carried a five-page article on the Oglemobile has disappeared from many libraries and even the Library of Congress. Argosy even ceased publication shortly after the article published. The El Paso NBC TV station that had filmed the test run "lost" the footage.

Tom Ogle died in 1979. Two others connected to Ogle died mysteriously. One was mugged while jogging with no cash. The other died while working for the military at a shooting range.

Charles N. Pogue: 200+ MPG Carburetor

In Jan. 3, 1935 Charles N. Pogue was issued a Canadian patent – 353,538 – for a High Mileage Carburetor.

In Apr. 9, 1935 Charles N. Pogue was issued a US patent – 1,997,497 – for a High Mileage Carburetor.

In Jan. 7, 1936 Charles N. Pogue was issued a US Patent – 2,026,798 – for his newer High Mileage Carburetor. Pogue used the carburetor for about ten years on his car and produced about 200 carburetors thru the Economy Carburetor Co. (Copies of the following three test reports plus a drawing of the Pogue carburetor can be viewed at <http://www.byronwine.com/files/1936%20Ford%20test.pdf>.)

In early 1936 T.G. Green, President of Breen Motor Company, Winnipeg, Manitoba, Canada tested the Pogue carburetor on a Ford V-8 Coupe and got 26.2 miles on one pint of gasoline. The performance of the car was 100% in every way. Under 10 mph the operation was much smoother than a standard carburetor.

In April 30, 1936 Ford Motor Company, Winnipeg, Manitoba, Canada tested the Pogue carburetor and was at "a loss to understand" how the carburetor got "25.7 miles on one pint of gasoline"! (That's approximately 205 mpg). Mr. W.J. Holmes and Mr. Purdy conducted the test for Ford Motor Company.

In Aug. 10, 1936 S. Stockhammer tested the Pogue carburetor on a 1934 Ford V-8 Coupe and got 28 miles per pint of gas. "I can say the performance was all anyone could desire in every shape of form." In Dec. 12, 1936 Canadian Automotive Magazine states that the standard carburetor gets about 25 mpg at only 9% efficiency. Therefore the Pogue carburetor is 72% efficient overall at 200 mpg.

Pogue had his shop broken into and carburetors stolen.

In 1953 CARS magazine stated that in the opening months of 1936, Pogue panicked the Toronto stock exchange and threw fright into the major oil companies. Stock exchange offices and brokers were swamped with orders to dump all oil stock immediately. This same article states that Winnipeg's largest automobile dealers tested the Pogue carburetor and got results of up to 216.8 mpg!

In 1945, according to an unnamed source, carburetors marked "POGUE CARBURETOR, DO NOT OPEN" were used on American Army tanks throughout WWII but were removed from circulation after the war ended.

In 1980 Arthur C. Sgrignoli, after 45 years, has built a legendary Pogue carburetor by hand and is said to have achieved an efficiency of 86%. Contact was made through his brother, William J. Sgrignoli.

In 1981 Ultra-Lean Carburetors of Northridge, CA, was selling a set of plans for the Pogue carburetor for \$50.

As of January 1981, Charles N. Pogue was still alive at age 81 and was living in a rest home in Winnipeg, Canada. He refused to talk to anyone or to receive visitors from outside his own family.

On the other hand, according to <http://www.snopes.com/autos/business/carburetor.asp>, the Pogue carburetor is an “urban legend”. Perhaps some university mechanical engineering students can be funded to replicate the Pogue carburetor as a laboratory exercise and then measure its performance.

An email correspondent of Gary Vesperman wrote June 11, 2006 that, before he got involved with an electronic mileage booster two years ago, he checked the Internet and both Consumers Union and the Department of Energy lambasted all previous fuel optimizers. DOE listed about 75 of them they tested and which did not really work.

(Of course they say that... I think the Pogue carburetor was the one that worked until lead was added to gasoline, and it was this additive that clogged up the device and prevented the mileage gain. Bruce McBurney, source. McBurney’s site <http://www.himacresearch.com/> has more on carburetors.)

The addition of lead to gasoline resulted in widespread permanent environmental pollution of millions of pounds of poisonous, brain deadening lead. In 1967 at the University of Wisconsin-Madison this writer, Gary Vesperman, took an introductory course in meteorology.

One lesson Professor Reid Bryson gave was based on a study he had conducted of the extent of lead poisoning. I used his research results as the basis of a “letter to the editor” which was published in *Business Week* magazine in 1970.

I am not sure if I have the dimensions correct, but the numbers went like this: Residents of northern Wisconsin were found to have 0.1 micrograms of lead per cubic centimeters (cc) of their blood. Residents of the northern suburbs of Chicago had 1 microgram of lead per cc of blood. Residents of downtown Chicago had 4 micrograms of lead per cc of blood. The fatal level of lead poisoning apparently is approximately 6 micrograms of lead per cc of blood.

So in the *Business Week* letter to the editor I postulated that in another decade or so, rising levels of lead in blood would result in greatly increased mortality rates among downtown Chicago people since they evidently were already two-thirds dead.

Weeks later, by coincidence (?), there was intense national publicity focused on lead poisoning which resulted in Congress passing a law mandating a phase-out of lead in gasoline. Some people claim there is a so-called “law of unintended consequences”. The platinum dust hazard from catalytic converters is another awful example of this “law”. Maybe it is time for me to once again try to rouse the rabble?

Professor Bryson was an expert climatologist. He explained to our class the basics of global warming due to the atmospheric increase in carbon dioxide – as also explained by Al Gore in his movie *An Inconvenient Truth*. Bryson also explained the basics of global cooling due to increased dust plus sunlight reflecting off the ice crystals from jet engine exhaust which float high in the atmosphere for up to six hours.

I remember cornering Bryson after one of his lectures and asking him which was going to “win” – global warming, or global cooling? With an unforgettable grim look on his face, would you believe he said global cooling?!!

39 years later with vastly more data, global warming dominates the scientific consensus. Most worrisome, in 2006 climatologists found a preponderance of positive global warming feedback loops compared with pitifully few negative global warming feedback loops. (Source: “Our worst fears are exceeded by reality” <http://news.independent.co.uk/environment/article2110651.ece>) Global warming seems to be speeding up!

Yet ExxonMobil tries to bias global warming research towards the possibly dishonest conclusion that global warming isn’t really happening. For example “Is the Sky Really Falling? A Review of Recent Global Warming Scare Stories”, is a Cato Institute research study published August 23, 2006 by Patrick J. Michaels in <http://www.cato.org/pubs/pas/pa576.pdf>. <http://www.cato.org/current/global-warming/> has an entertaining list of sarcastic titles of papers on global warming by Michaels. Is Michaels being paid to be a disinformation hack for ExxonMobil rather than as an honest weather scientist?

The Cato Institute received \$55,000 from ExxonMobil in 2002-2003. The George C. Marshall Institute received \$185,000 from ExxonMobil for "Climate Change Public Information and Policy Research" in 2002-2003. The Tech Central Station Science Foundation received \$95,000 from ExxonMobil for "Climate Change Support" in 2003. Michaels is also employed by the George C. Marshall Institute and the Tech Central Station Science Foundation. (Source: <http://www.environmentaldefense.org/article.cfm?contentid=3804&CFID=21084385&CFTOKEN=29888831>.) Incidentally, Michaels earned his Ph.D. in ecological climatology from University of Wisconsin-Madison in 1979.

The Union of Concerned Scientists lays the blame for at least some of the ongoing uncertainty squarely on the shoulders of the world's largest publicly traded company – ExxonMobil. The scientific group has documented that the oil company has "funneled nearly \$16 million between 1998 and 2005 to a network of 43 advocacy organizations that seek to confuse the public on global warming science".

Many of the organizations have overlapping staffs, board members and scientific advisers, according to the report, leaving the public with the impression that agreement on the certainty of global warming is far from universal. Funding by ExxonMobil allows these affiliated organizations to "publish and republish the works of a small group of climate-change contrarians," the report states.

ExxonMobil has a lot at stake. A shift toward cleaner forms of energy could greatly diminish its revenue, which reached \$339 billion in 2005. (Sources: January 6, 2007 Las Vegas Sun editorial and http://www.ucsusa.org/assets/documents/global_warming/exxon_report.pdf.)

Allen Caggiano: 100+ MPG Fuel Implosion Vaporization System

INVENTOR'S HARDSHIPS --- SUPPRESSION OR COINCIDENCE? YOU DECIDE!
IS US. PATENT # 5,782,225 BEING SUPPRESSEDOR... ARE THE "HARDSHIPS" THAT THE INVENTOR SUFFERED JUST "A COINCIDENCE".??????" YOU DECIDE !

In the early 1970, in Brockton, Ma, I owned and operated a company called Debal Heating and Air Conditioning. This was about the time that we had that phony gasoline shortage. Each morning myself and 12 employees would sit in the gas line with 6 trucks to get a mere 5 gallons of gasoline. As I sat in that gasoline line day after day, I started to think there must be a better way. If they have the technology to put a man on the moon they must have the technology to get much better gas mileage.

It wasn't long before I built my first fuel vaporization system. I read everything that I could get my hands on about this. Well sad to say it didn't work. It made plenty of vapors, and exploded like a BOMB. Over 70% of my body received 3rd degree burns. I spent 69 days in intensive care, kissing death several times. Don't worry, all the bugs are worked out now.

October 15, 1983 was the birth of my Fuel Implosion Vaporization System. At this time I owned and operated a company in Brockton Ma, called Weatherall Energy Research and Development. I had just finished building a commercial high-efficiency air conditioning evaporation coil when I poured one gallon of gasoline into one end to flush it out. To my surprise massive fumes discharged from the other end, and all I got back was less than one cup of gasoline.

I started brainstorming, I miniaturized the air conditioning evaporator coil, installed it in 1973 Dodge station wagon with a 318 engine. By early 1986 we had worked out all the shortcomings and bugs and had a working prototype that gave between 111 to 113 mpg. We placed an ad in the Brockton Enterprise and the Boston Globe, seeking people to beta test our Fuel Implosion System.

It wasn't long before I got a call from a California corporation wanting exclusive rights to our invention. My attorney checked them out. They were a subsidiary of several other corporations and finally all owned by an oil company. I declined their offer. Shortly thereafter all my troubles started.

First came two men, showing IDs, saying that they were from the FBI and that I was violating federal laws altering carburetion systems and that if convicted could get 20 years in a federal prison. I called my attorney and told him what happened. My attorney informed me that I wasn't in any violation of any federal laws.

If I was smart I should have stopped here. (BUT I AM NOT TOO SMART). For the next two weeks I would receive every day in the mail, in a plain envelope, 8"x10" close-up photos of my wife in the supermarket, church, and my children getting on and off the school bus and in the playground at school.

(Just pictures only.) In addition we would get all kinds of weird calls mostly after 2 a.m. My wife couldn't take it anymore; she filed for divorce and left me.

A few days later my attorney showed up at my office, looking white as a ghost. He had all my legal files and records with him, placed them on my desk and said that he could no longer represent me in any legal matters. I asked why. All he would say is: "WAKE UP!". I could not understand. He had been my personal friend and attorney for over 16 years.

When my wife divorced me and my attorney abandoned me, I wondered what else could happen. Nothing, I thought, nobody can stop me now, so on with my fuel implosion system. Boy was I wrong: hell opened up and swallowed me alive.

I am a very light drinker; if I drink 6 cans of beer a year, that was a lot. I never did drugs or was around anybody that did. On July 4, 1986 the chief of the Brockton Police, Richard Sprawls, with a bunch of other Brockton police raided my Tremont St. Brockton home, and arrested me for trafficking of cocaine. My bail was set at \$500,000.

I was lucky that I had a friend, LT. Jim Sullivan of the Brockton Police Department. He showed up at my bail hearing and said something to the judge, and my bail was reduced to \$500.00. Is somebody trying to tell me something?

Oh well, back to work; I built two more fuel implosion systems. I installed them in a 1973 Olds Cutlass and 1966 Mustang. I painted my 1973 Dodge station wagon bright yellow, with big red letters all over it saying: "THIS CAR GETS OVER 100 MPG AND DOESN'T POLLUTE THE AIR. THE BIG BOYS ARE TRYING TO MAKE ME AND THIS CAR DISAPPEAR,--HELP ME! " I only got to drive my yellow wagon for 3 days.

On November 24, 1986 Brockton chief of police, Richard Sprawls, and other members of the Brockton Police Department raided my Tremont St. Brockton home. They seized two shotguns, a 12-gauge and a 20-gauge, both of which were legally registered to me. I used to use them for skeet shooting.

I was arrested and charged with for trafficking of cocaine again. My bail was revoked. I was placed in maximum security in the Plymouth House of Correction. I was now sentenced to 15 years for the July 1986 trafficking of cocaine and waiting for the second trial for the November case.

I knew where I could get some solid evidence that would clear me, but I didn't know who to trust ANYMORE. So, I escaped from maximum security, went and got my solid evidence and gave it to the right person and surrendered the same day.

Boy I was lucky, they had over 240 law enforcement officers searching for me with guns, dogs, helicopters etc. I ran like a jackrabbit through the woods. My advantage was, the woods were my old hunting grounds.

Two days later Brockton's chief of police was arrested for STEALING COCAINE FROM THE POLICE EVIDENCE LOCKER. HE WAS SENTENCED TO TWO YEARS IN PRISON. REMEMBER THE COCAINE THAT CHIEF RICHARD SPRAWLS SAID HE FOUND AT MY HOME IN JULY AND NOVEMBER 1986? NOW I KNOW WHERE IT CAME FROM, THE POLICE EVIDENCE LOCKER, AND IT FELL OUT OF CHIEF SPRAWL'S POCKET ONTO THE FLOOR IN MY HOME WHERE ANOTHER BROCKTON POLICE OFFICER FOUND IT.

Well, the Massachusetts Supreme Court of Appeals overturned my cocaine trafficking conviction. Grounds: tainted evidence, illegal search and seizure.

FREEDOM AND HOME, HERE I COME! WRONG AGAIN! HERE COMES THE FEDS. THEY HAD A WARRANT FOR MY ARREST FOR VIOLATING A NEW GUN LAW THAT WAS PASSED ON NOVEMBER 24, 1986. THAT WAS JUST 10 DAYS AFTER MY ARREST OF November 14, 1986. Remember the Brockton police seized my two shotguns?

Guess what? I had the privilege of being the first person in Massachusetts and the third person in the United States to be tried, prosecuted and sentenced under this new law 18 USC 922g and 924e. I didn't stand a chance; there was no case law in the law books to support my defense of this new law. I was sentenced to two 5 years' sentences for perjury, because when I bought the two shotguns there was a box that said: were you ever convicted of a felony. I checked the no box, because I was never convicted of a felony, just a misdemeanor.

Well, the feds said under federal law my misdemeanor was a felony, therefore, I was guilty of 2 counts of perjury and they gave me 5 years on each count.

Next I got 5 years for being a convicted felon in possession of a firearm. Now I have been sentenced to a total of 15 years in federal prison without parole. I am still sitting in the courtroom. After a week of trial, my attorney said that the US Attorney was trying me under the second part of the new law. My attorney said the trial will be short, won't last more than ten minutes. There was no way I could be found not guilty.

Well, it went like this:

- 1: I was convicted as a felon in possession of a firearm.
- 2: I was convicted of perjury.
- 3: I was convicted of a second count of perjury.

BINGO! I HIT THE JACK POT!!

USC 18922g-e1 states: If you have 3 prior felony convictions and have possession of a fire arm, then you are an ARMED Career Criminal and that carries a minimum mandatory sentence of 15 years without parole. Now I have a total of 30 years in federal prison without parole. Well, the Feds have me tucked away for 30 years where I cannot cause any more trouble with my fuel implosion system. WRONG, WRONG, WRONG:

I met a lot of powerful people in the federal prison, with powerful connections on the outside, among them, Kenny whose son was a patent attorney for a large patent law firm who did our US patent. #5,782,225, while I sat in the safety of the federal prison system.

Remember the Feds sentenced me to 30 years without parole??? Well, on September 13, 1997 (Friday the 13th, my lucky day) I was released from federal prison with 5 years parole. STOP! Something's wrong here. I only did 10 years of a 30-year sentence, with no chance of parole. Well it took the federal courts to rule that it was legal for me to possess the two shotguns, that they had no jurisdiction. The case is now pending in the 1st District Court. They will not rule on it.

This September 2001 will be 4 years that I have been out of federal prison and have been a good boy, nice and quiet, until now.

My Intentions: In the past 20 years I found out that the oil companies will do EVERYTHING in their power to suppress this kind of technology, because it could reduce the gasoline consumption in the U.S. by 76% over a 5-year term.

The government will lose mega bucks in gasoline taxes.

The major car manufacturers will lose billions spent on the technology of the fuel injection systems, my technology makes theirs obsolete.

I put all my patent and shop drawings up on this website, for anybody to use it free. I am 58 1/2 years young now; the sand is running out of my hour glass fast. I don't want to take this technology to my grave with me. If you think that I should get something out of this, then build my fuel implosion system, and after your 5th tank of gas send me the price of a tank of gas; otherwise I don't want a cent.

If you believe that me and my patent and technology have been suppressed, then tell as many people as you can about my story and ask them to do the same.

The Reason I Ask This Is: I believe that millions of people around the globe want this kind of technology and know it exists. When we get enough people wanting this technology, I have powerful attorneys, who know and are able to present it to the courts of the globe.

I will take my remaining 7 cars, that have my fuel implosion system in them, out of exile and drive them from Boston to California with the whole world watching, and I think my chances of reaching California alive are excellent.

By my publishing this website, I must be out of my mind. What else could happen to me? MAYBE I will get killed or something. What will be will be.

Thank you for your interest. Please help me spread the word. And for those of you that think that my story is just a bunch of bad luck for an unlucky inventor, you will be of those who oppose this type of technology. So go to my home page and VOTE NO for this technology.

Sincerely,
Allen Caggiano, Inventor
<http://www.get113to138mpg.com/>

P.S.: As much as I would like you to build my Fuel Implosion Vaporization System and succeed, I MUST URGE you NOT to build it without QUALIFIED and PROFESSIONAL help, if you are not a qualified machinist or mechanic yourself. This is NOT a simple D.I.Y project and working with (vaporized) fuel is dangerous!

(The electric auto magazine Electrifying Times (www.electrifyingtimes.com) has published a much longer article on Caggiano and his FIVS in its spring-summer 2006 issue Vol. 10 No. 1. By the way, that particular issue happens to focus on suppressed energy inventions.)

(The following is a subsequent report on Caggiano's on-going suppression troubles.

I just want to inform you as to Allen Caggiano situation. He had the web site www.get113to138mpg.com. He recently was trying to bring out a product. He had a few problems and then disappeared. From what I have been told Allen had been in a hospital recuperating from surgery. He went in to have a CAT scan and woke up a month later without the use of his legs. He said he died twice but came back. He was in a coma most of the month. While recuperating and watching TV one afternoon he saw a SWAT team raiding his apartment seizing his computers, notes, tools and car. The postal service is also investigating because he failed to deliver products. He said there were pressure crack problems. He could not ship and thought things would be redone in time. But just too many things went against him. Even though things look bad for him I still believe he is trying to get this out doing the best he can. I and some others have checked out his stories and had them confirmed. He does have a valid patent for fivs 2 ad. He was framed in his first arrest, and the police chief was dirty. If he were a con artist smart enough to pull this off, he certainly would not be around trying to do what he is doing still. He would be in another country spending the money with another name and ID. For that matter who would use their family name with so many ties and some of the different weird stories have been independently confirmed. His web site is down and I wonder what will come of him. Best way to suppress something is to make it look like a con game. It seems the oil companies are good at that. HIMAC has always tried to help anyone in bringing out this technology. At present we are publishing the work of Tony O'Donnell. He has tripled his fuel mileage, obtained an Australian patent and some foreign patents, but could not afford North American patents and the time ran out. We put out his information research and AutoCAD drawings in a CD format – over 500 pages \$39.95 money back if not satisfied. Allen is not the first to get hassled over this. We can only hope he is the last and this information finally surfaces to completion. I only know Allen from phone conversations and the feed back from those who know me. I have not witnessed a verifiable mileage run from him. When I know more it will be posted. (Source: <http://www.himacresearch.com/links.html>.)

(Erik Masen provides an update in his "Suppression of Quantum Leap Inventors" *Electrifying Times*, 2007, Vol. 10, No. 2)

Recently in our last issue we did a feature story on Allen Caggiano "High Mileage Dreams". Allen had spent a good share of his life developing and selling versions of his high-mileage fuel devices. This feature story covered his many near death experiences by groups who did not want to see his technology go mainstream. Recently some U.S. Government representatives invested in Allen's company in an attempt to shut him down for good. Allen fled to China where he is having his high mileage devices manufactured. Few have heard from him since!

William Bolon: Automobile Steam Engine

William Bolon, Rialto, California, developed an unusual steam engine design in 1971 that was said to get up to 50 miles to the gallon. The engine used only 17 moving parts and weighed less than 50 pounds. It eliminated the usual transmission and drive train in an automobile. After much publicity, the inventor's factory was fire bombed with damages totaling \$600,000. Letters to the White House were ignored so the inventor finally gave up and let Indonesian interests have the design.

Shell Oil Company: Achieves 376.59 MPG with a Modified 1959 Opel in 1973

Shell Oil Company wrote "Fuel Economy of the Gasoline Engine" (ISBN 0-470-99132-1); it was published by John Wiley & Sons, New York, in 1977. On page 42 Shell Oil quotes the President of General Motors who in 1929 predicted 80 MPG by 1939. Between pages 221 (see <http://www.byronwine.com/files/Shell%20P221.pdf>) and 223 (see <http://www.byronwine.com/files/Shell%20P222.pdf>) Shell writes of their achievements: 49.73 MPG around 1939; 149.95 MPG with a 1947 Studebaker in 1949; 244.35 MPG with a 1959 Fiat 600 in 1968; 376.59 MPG with a modified 1959 Opel in 1973 (photos of these three cars are shown on page 223).

The Library of Congress, in September 1990, did not have a copy of this book. It was missing from their files, of course. [They had it – since it is legally required to have at least one copy of all such publications in the U.S. However, it seems to have been stolen or hidden.] Byron Wine bought a copy from Maryland Book Exchange around 1980 after a professor informed him that it was used as an engineering text at the University of West Virginia.

The modified 376.59 MPG 1959 Opel is now owned by an Alabama antique car restoration company (see <http://www.race-cardrivers.com/shop.htm>).

Honda: 60 MPG 1992-1994 Honda Civic VX

The U.S. Government, pressured by major US oil and automobile companies, eventually denied import of the 60 MPG 1992-1994 Honda Civic VX. V stands for variable valve timing which can greatly increase a motor's efficiency. (Erik Masen, "Suppression of Quantum Leap Inventors", *Electrifying Times*, 2007, Vol. 10, No. 2)

IPMS-Chernovitsky: Super Ceramics

The I.N. Frantsevich Institute for Problems of Materials Science (I.P.M.S.) is one of more than 70 institutes founded by the government of the Soviet Union during the decade following World War II. Its mission was very simple: the scientists forcibly relocated from post-war Europe and enslaved at the Institute were commissioned to learn everything there is to know about the material world. They were not asked, indeed, they were not permitted, to make any decisions about how their discoveries were to be applied. In fact, from the outset and during all of the ensuing 40 years, there was not a single applications engineer among the 6,600 scientists who worked in the Institute.

The peculiar set of circumstances which provided the essential breeding ground for the extraordinary discoveries spawned by the Institute was not reserved just to I.P.M.S. The central government of U.S.S.R. jealously guarded its absolute right to make all decisions about what was done with the discoveries created in all the institutes. It is not surprising, therefore, that a system of government so paranoid about anyone stealing a pair of shoes that it manufactured left boots in Moscow and right boots in Kiev, would totally fail to recognize or effectively apply the benefits of some startlingly new sciences to clothe, house and feed its own people.

In fact, it was precisely because the Institute was forced to operate in a purely theoretical environment, with no pressure whatever to meet production or marketing deadlines, operating virtually isolated from any contact with the outside world, that the scientists and academicians were able to produce at least 7 whole new sciences, 30 technologies, and 130 materials unknown in the West. It is largely because the most brilliant theoretical physicists in the entire Soviet Union were able to work for nearly 50 years in the singular pursuit of pure research that the sciences developed at I.P.M.S. are so fundamentally unique.

It is interesting to note that only a small part of the new sciences developed at the Institute was revealed to or known by the government of the former Soviet Union prior to its collapse in August, 1991. The antipathy of the Institute's scientists to the USSR government's shabby treatment led them to successfully hide nearly all of their often revolutionary research results.

One of the Institute's four sites, IPMS-Chernovitsky, developed moldable, machine-able, ultra-high temperature, super-hard, and strategic metal-alloyed ceramic substances.

The uniformity and density of ceramic materials is what determines the quality, consistency and persistence of the resonant tone produced by an oscillating crystalline material. Research has created a whole new family of moldable, machine-able, ultra-high temperature, super-hard and strategic metal-alloyed ceramics capable of withstanding operating temperatures of 1200 degrees centigrade. This is more than 400 degrees centigrade higher than can be tolerated by other known ceramic materials commercially available anywhere else in the world, including those manufactured by Allied Signal Corporation and Kyocera.

These materials are being utilized in entirely ceramic internal combustion engines, high-speed turbines and self-lubricating bearing surfaces. The latest ceramic materials designed for use in high-speed jet turbines operate continuously at temperatures in excess of 1200 degrees centigrade. This is more than 400 degrees centigrade higher than the theoretical limit allowed by the quantum mechanics model relied on in the West.

The ceramics produced at the IPMS-Chernovitsky plant have been made harder by fully one factor of hardness than the hardest alloyed metal machine tools currently produced by any other known means of manufacture. They have been made harder by at least one full order of magnitude than either natural or synthetically produced diamonds. Practical applications include drilling and mining, grinding tools, down-hole equipment, tool inserts and the new generation of cubic boron nitride tools that are currently in use.

Proof positive of the extraordinary uniformity and density of these materials is easily verified by a simple demonstration if the measurement of softening temperatures is deemed insufficient. Ceramic pistons manufactured for use in ceramic diesel engines will, when struck by a hard object, produce a clear resonant tone which persists for more than seventeen seconds. This is at least eight seconds longer than the resonant persistence produced by the finest glass or crystal ever manufactured.

Joint ventures of the IPMS with more than a dozen private sector companies to develop inventions have been repeatedly sabotaged by the U.S. Government's Defense Intelligence Agency and others. (Source: David G. Yurth, *The Anthropos Files: Tales of Quantum Physics from Another World – 2nd Edition*, 2007)

Stefan Marinov: Magnetic Vortex Hyper-Ionization Device

At his death Dr. Stefan Marinov was Assistant Professor of Physics at Sofia University, a member of the Physical Institute of the Bulgarian Academy of Science, and the editor of *Deutsche Physik*. One energy device he was developing was an over-unity magnetic motor.

<http://www.spiritofmaat.com/archive/mar2/bearden.htm> discloses the strange circumstances of Marinov's death.

(The excerpt below, with editing, is from Vencislav Bujic's report published January 14, 2002.)

Stefan Marinov was working on his magnetic vortex hyper-ionization device just one month before his sudden, unexpected death. There is high chance that his death was connected to the testing of this device, and that it was not a "suicide" as officially stated. Marinov was a good Christian and nobody expected him to commit suicide.

According to official news he presumably jumped off from the top of the four-level outside emergency staircase of the Bibliothek in Graz, Austria. But nobody actually saw him jumping off. He was still alive, not even bleeding, when an ambulance and police arrived. Marinov died on the way to a hospital.

The police never notified anybody, including his son in Bulgaria. They sealed his apartment, not letting anybody inside, and also refused to release any letters found there, and refused to give any information.

Stefan Marinov was born in Bulgaria. When he got a passport, he moved to Washington. Secret agencies and their 'elite' bosses, who control sources of energy and are confusing people, wouldn't let Marinov alone when he went back to Europe, this time to Italy and Austria. These are the same people who prevented Tesla and many others from giving to all the people sources of free energy. His life was ended abruptly. He had big plans for the future and was making various future collaborations. Marinov had planned to attend the International Physics Conference in Koln, Germany, on 25th of August 1997. He even had made hotel reservations for the conference for him and his colleague Professor P.T. Pappas from Athens, Greece.

Bob Aldrich (Reporter): Vibrating Energy Source

Message 414 DATE/TIME: 05/24/93 01:47
From : BOB ALDRICH -- RECEIVED --
To : JERRY DECKER (SYSOP)
Subject: (R) Bearden's Latest
Folder : A, "Public Mail"

Hi Jerry,

By lamentations I mean lamenting on how difficult it's been to get free energy made available to the people at large. How many people have tried to make it possible over the years? Must have been thousands. Who has succeeded?

Say, did you ever hear of a device that farmers were using possibly fifty years ago that worked on vibration? Apparently some very simple device that when set to vibrating, would put out ample free energy. Chicken farmers and such were building them and using them to power the ranch.

Until some one or two farms mysteriously blew up or burned to the ground, after some warnings. This was in the Midwest to my recollection. The fellow who told me did mention specifics but it was several years ago. He was very hard to pin down as he was always onto the latest thing and didn't want to talk about things in the past much.

Later,
Bob

Dennis Lee: Freon-Based Low-Temperature Phase-Change Engine

Dennis Lee during the mid-1980's developed a freon-based low-temperature phase-change engine similar to Bob Stewart's heat engine. The father of the Boeing 747 and other highly qualified people helped Dennis perfect his engine. A small plant was established in Seattle to produce and sell a commercial home-scale electrical generator. A Seattle area power company (the same one which became infamous for its failed WHOOPS nuclear power plants) campaigned to shut down the plant.

Dennis Lee was forced to move his company to Southern California to start over. He was subsequently imprisoned on a false charge for two years. His book "The Alternative" documents the falsity of the charge. The main point being a two-year imprisonment on a charge using an obscure law *never* used against anyone else in the state for either fine or imprisonment and during which a million dollar bond was demanded by the judge, similar to bail charges issued against murders and violent criminals, not inventors or even petty thieves.

Robert Stewart: Stewart Cycle Heat Engine

Bob Stewart spent \$3,000,000 (mostly from farmers) developing patents on his "Stewart Cycle" engines for transportation vehicles and large-scale water lifters for canals during the late 1970's. His efficient and pollution-free engines use ambient heat to expand a working fluid such as ammonia and move pistons through sealed cylinders. He claimed that his low-temperature phase-change engine is more efficient and powerful than Dennis Lee's version.

Twice he built a factory, first in Coeur d-Alene, Idaho, and then in Deming, New Mexico, to make available for sale such valuable and beneficial technology. Both times, the factories were raided and shut down by the U.S. Government's Securities and Exchange Commission.

Through the Las Vegas area grapevine, Stewart fortunately in time heard that a contract on his life was in effect and had to go into hiding for nearly a year.

Jim Powell (Reporter): Flywheel/Dual Hydraulic Cylinder

Date: Tue, 20 Jun 2006
Subject: Great Information!
To: garyvesperman@yahoo.com

Hi Gary,

A friend just forwarded your 25-page e-article entitled History of 'New Energy' Invention Suppression Cases, and I enjoyed the reading. Amazing stuff!

There was one machine (for lack of a better term) I saw back in the mid-seventies that has haunted the back of my mind ever since, and I looked for a mention of it in your article. The article hints you have much more information and files elsewhere. Thought I would share with you what I recollect in case you already know about the contraption I witnessed.

During the mid-seventies I was a long-haul trucker and met an older man at a truck stop in Tennessee. Over cups of coffee we were talking about motors and diesel and mechanical things in general when he mentioned a buddy of his had invented a "perpetual motion machine" that he thought was pretty interesting.

I asked where it was and could I see it. He said the guy didn't live too far from where we were sitting but I would never be able to get my rig up the mountain. He offered to give me a ride. He was right. This buddy lived back in the hills and in Tennessee that can mean a mouthful. Good thing his truck was four wheel drive.

When we got there, his buddy was rather evasive about the whole thing which really puzzled the guy that brought me up there. So he kept asking and pushing for a demo and finally the inventor told us the day before some guys had visited and took a part or two and told him to not fix it or they would be back. I got the feeling that if it had been just me there, he wouldn't have told me anything or showed me anything but because his friend was with me it was different.

He took us out back where there were odds and ends on a workbench, and he quickly gave me a brief explanation of how the parts fit together and how it worked. I am sorry for your sake that I haven't remembered any names of the individuals so if you want to toss my email it is OK. Here is how the description went:

Flywheels by their character tend to develop power once they are in motion and can generate more power while spinning than they consume to keep spinning. Sounds interesting but I am no physics wizard.

So he had rigged a big flywheel between two double-acting hydraulic cylinders with the appropriate switches triggered by the rams to keep the two cylinders reciprocating as long as there was a steady supply of hydraulic oil pressure. The hydraulic oil pressure came from what looked like a modest-sized power-steering pump which was driven by the flywheel.

The flywheel was kept in motion by the moving cylinders, and the cylinders in turn were kept in motion by the switches and the fluid pump. The fluid pump was kept in motion by the flywheel. The switches and support for the flywheel (bearings) was taken during the confiscation by his unpleasant "visitors".

To start the whole thing in motion he had a small electric motor to help start spinning the flywheel. Once it got up to a certain RPM the electric motor was disengaged and shutdown.

They both told me how he had been using it for various power needs around the farm from pumping water to cutting wood for over a year. When someone told him he should seek a patent for his machine, he followed that advice. Instead of getting a patent, he got the visit the day before I arrived.

I didn't feel like they were pulling my leg but again I know nothing of physics, and I was in my early twenties. There was no appeal to partner, contribute money or support or anything that would have made me suspicious. Wish I could have seen it working because it has kept me wondering the past 30 years.

Perhaps you have heard of these things and can comment on whether it was bunk or not. You may even have the scientific knowledge to instantly recognize its possibility or improbability. Anyway, after reading your article I thought I would pass this along for what it is worth.

Best Regards,
Jim Powell

This writer, Gary Vesperman, does not know of any similar device in the unconventional science literature. Perhaps one of my genius scientist friends can figure out this energy invention. Gosh, do the energy invention suppression bullies even track down energy inventors in remote hillbilly country, take away or damage their machines, and threaten them with death?

Christopher Bird/Walter (Reporter): Energy Suppression – An Invisible Galaxy of Inventions

<http://www.spiritofmaat.com/archive/feb2/bird.htm> and <http://www.befreetech.com/energysuppression.htm> both list 48 energy inventions – nearly all of which are suppressed or at least not being commercially made and sold.

IPMS: Micro-Channels and Filters

The I.N. Frantsevich Institute for Problems of Materials Science (IPMS) was established in Kiev, Ukraine in 1951. Between 1945 and 1955, the government of the Soviet Union created at least 72 self-contained, completely isolated scientific communities like the IPMS scattered all over the most desolate parts of the Soviet empire. Stalin systematically established more than 360 such enclaves as a matter of policy. He deliberately prevented the scientists and their families from co-mingling with the rest of Soviet society or corresponding with the West. This phenomenon of cultural isolation was typical of life in the U.S.S.R. after World War II.

Many of the key scientists who were forcibly expatriated by the Red Army under Stalin's orders and relocated to work in the Institute had been captured by the Soviet armies during the occupation and annexation of Eastern Europe at the end of World War II. Only a handful of them succeeded in escaping to the West. Those who tried to escape were almost always captured and executed. In some cases, their families were sent to languish and die in the Gulags.

Many of the original team of scientists sequestered in L'vov, the entrance to the Institute, had been contemporaries, co-workers and close personal friends with many of the most prominent physicists and other scientists who emigrated to the United States before, during and after World War II.

During World War II in Europe, and afterwards in Stalin's Soviet Union, the original Directors of the Institute experienced the horrors of developing technology for destructive military use. For more than 40 years, scientists at IPMS (and, no doubt, at some of the other Soviet institutes) elected to keep secret as many of their key discoveries as possible until a time when their genius could be constructively applied to solving the global materials, energy consumption and industrial manufacturing issues which are responsible for the current deplorable state of the environment.

Among the original group of scientists relocated to work in the Institute were some who were part of the German team which worked during World War II to develop fissionable nuclear materials, synthetic fuels and foods, and other technological advances for the Third Reich. Information regarding the advanced nature of some of the work they participated in has only recently been declassified and released to the public. Some of the formulas and technologies they developed were absolutely revolutionary and many have never been replicated in the post-war world.

Among recently declassified files is a set of documents which describes the development of infra-red, heat-seeking "smart bombs" which were so effective that a single bomb, dropped by a single Nazi bomber in a night attack in the North Atlantic in 1942, sank a British troop ship carrying more than 3,000 American troops. The bomb recognized and guided itself down the troop ship's smoke stack in much the same way similar devices were observed to function during Operation Desert Storm, nearly 50 years later. The technology which made this device functional was so far advanced beyond anything available to the Allies at the time that the War Department kept the story classified for more than 50 years.

Many of the materials, processes, technologies and applications produced by the Institute are so unique that in some cases there are literally no words in the languages of the Western industrialized nations to describe them.

IPMS has produced a family of micro-channel and filter materials with uniformly controllable orifices as small as .5 micron from combinations of carbon-fiber, basalt, ceramic and strategic metals – including stainless steel, scandium and chromium. These materials demonstrate a consistency of orifices fully a factor of ten times smaller and more consistent than the smallest ever manufactured in the U.S.

These materials have been used in applications for heat exchangers, catalysts and separation of gases on a molecular level. A notable application involves the use of such materials to separate virtually 100% pure CO₂ from hydrogen gas at the well-head from gas wells. Then 98% of the CO₂ can be pumped back into the well for re-pressurization, with the pumps then being operated directly on virtually pure hydrogen fuel.

The scientists, academicians and others at the Institute who developed revolutionary new models of quantum mechanics, quantum physics and the manufacturing processes and techniques which resulted in these materials, refused as a matter of conscience to allow much of what they had developed to pass into the hands of the KGB and the Soviet military.

Joint ventures of the IPMS with more than a dozen private sector companies to develop these useful inventions have been repeatedly sabotaged by the U.S. Government's Defense Intelligence Agency and others. (Source: David G. Yurth, *The Anthropos Files: Tales of Quantum Physics from Another World – 2nd Edition*, 2007)

Viktor Schaubberger: Jet-Turbine

During the 1920's Viktor Schaubberger designed a novel hydroelectric generator for which he received Austrian Patent No. 117,749 Jet-Turbine on May 10, 1930. It seems that Schaubberger actually used a small turbine of this design in a stream of water near the forest wardens' building during those years, but no reliable records are available. An English-language version of his patent is available at <http://www.rexresearch.com/schaub/schaub.htm#117749>.

Schaubberger's jet-turbine does not require the use of a dam. Instead, the water to power it is contained in a vertically oriented large-diameter cylinder, ten feet or more in height. Due to the force of gravity and the elastic modulus (fluid dynamics) of water, a very large amount of potential energy in the storage vessel is converted to kinetic energy as the water is released into the oscillator (impeller). A pump is used to pump the water exiting the turbine back to the storage vessel.

The jet-turbine was estimated to produce 9 times more power for a given water flow than with a conventionally designed water turbine. The design also did not force water through immense pressure and heat which destroy the structure of water.

The water-vortex (jet of water) is produced inside a ribbed copper-cone, by the conical-plus-ribbed shape and gravity, and the resulting water-jet is rolled into the copper-impeller, which turns the generator, producing energy in a silent, effective way. The conical impeller has two or more intertwining spiral grooves incorporated in its outer surface, into which the water emerging from the nozzle is entrained, in order to rotate the shaft of an electrical generator. This method does not require a great deal of water, like conventional water-dam methods, and is absolutely silent.

In practice, only a small fraction of the output energy is required to power the pump, thus making this device a true free energy system. Ideally, the storage vessel should be egg shaped, with the outlet to the oscillating valve possessing the configuration of a long hyperbolic parabola. This outlet configuration will induce a longitudinal vortical motion to the water prior to its flow through the oscillator, thus cooling and densifying the water. The return pipe from the turbine should enter the storage vessel tangentially, in order to assist in the formation of a vortical flow.

In 1986 a group of enthusiasts living around the township of Schlading, who were interested in the practical application of Viktor Schaubberger's ideas and Walter Schaubberger's mathematics, decided to replicate Schaubberger's jet-turbine in order to produce their own electricity. The "Schlading Group" comprised of R. Harbacher, H. Zefferer, H. Schrempf, A. Schwab, T. Promberger, M. Dainhofer, V. Knaus, and H. Mayer.

On the property of one of their members living on the Birnberg, they had carefully constructed the combination of egg and hyperbolic cone, which was sourced from a nearby brook. Water from the stream was fed into the upper part of the egg tangentially, thereby providing the initial impulse for the creation of a vortex. The electricity generator to be attached to the jet-turbine was being specially manufactured. Austrian authorities then told the Schlading Group to stop their work before experiments were completed, using the excuse that they did not want to see these devices popping up all over the countryside.

Successful or not, what this replication of Schaubberger's jet-turbine does show is that small groups of people working together cooperatively can provide their own sources of cheap power and can do much to re-establish their independence from centralized power and control over their lives. The problem that confronts us all, alas, is that it is the centralized electricity authorities who write the rules which ensure as far as possible that no one can escape the power grid. The greater the number of people who are willing to challenge this central control over their independence, the more difficult it will become for those to continue holding such power over us. (Sources: <http://peswiki.com/energy/Directory:Suppression> and <http://peswiki.com/index.php/OS:Jet-Turbine>)

Canadian Scientist: Standalone Water-Based Electricity Generator

Jeane Manning authored *The Coming Energy Revolution* and also has co-authored *Suppressed Inventions & Other Discoveries* (an anthology put together by Jonathan Eisen). She has heard numerous stories of suppression during twenty-five years of investigating non-conventional energy inventions. Her website is <http://www.changingpower.net>. New Energy Congress member Leslie R. Pastor's review of Eisen's anthology: "The book is breathtaking in its openness regarding actual suppression of 'real-time' inventors and innovators."

One story she told Gary Vesperman is about a Canadian scientist. In October of 1999, Manning met him through a mutual friend. According to her notes, he had invented an energy device which was the size of a refrigerator when he ran his home on its electrical output. He wouldn't reveal how it worked, except that it involved sound frequencies, copper plates, water, a transformer and a battery and could be built the size of a Walkman. (Vesperman: This device appears to be similar to the super-efficient water electrolysis devices developed by Daniel Dingel, Ken Rasmussen, and Stanley Meyer (see above). Notice that it offers the desirable feature of being scaleable from very small to at least big enough to run a house off the power grid. It also functions as a standalone generator, not as a less desirable over-unity power converter.)

His mistake had been in being confrontational. He called officials at Ontario's hydro-electric utility and told them to take their meter off of his house. When they arrived and cut off his power, he went down into his basement. While the officials stood out in his yard, the lights inside his house went on again. He came outside and bragged, "I'll put you out of business in six months!" Soon he was visited by men wearing Royal Canadian Mounted Police uniforms who gave him warnings and a document. He later showed the document to his son, a lawyer, who reinforced the message – keep your mouth shut. He dismantled his inventions.

He told Manning that the Royal Canadian Mounted Police basically told him to forget about his invention for thirty years. Twenty-six of those years had passed. He said the police kept an eye on his activities throughout the years. For instance, they interrogated him after an innocent business meeting in California which had nothing to do with the invention.

This German-Canadian scientist joined the many inventors who took their energy secrets to the grave. He was elderly, and Manning believes he died from natural causes.

Brazil: Ethanol Produced from Sugar Cane

Ethanol, produced from fermenting starch-based corn or sugar, is increasingly being blended with gasoline. Prices for ethanol in the United States recently hit an all-time high at over \$3 a gallon. To impede competition from ethanol, the oil companies have arranged for the United States to impose a 100% (currently \$0.54 per gallon) tariff on ethanol imports, which keeps prices for the alternative fuel artificially high. Brazil, which recently became energy self-sufficient in 2006, is the world's largest producer of sugar-based ethanol and would benefit greatly from a tariff reduction in the United States. Apparently it is cheaper and more energy efficient to produce ethanol from sugar cane than corn. Naturally, Brazilian rainforest preservation advocates likely would argue for running engines on water instead or some other more environmentally benign energy source.

Eric Fry and Kevin Kerr reported July 17, 2007 in *Rude Awakening* (www.agorafinancial.com) that ethanol production now consumes one quarter of the entire American corn crop, boosting the prices of corn and numerous corn-based products such as pork. But ethanol production consumes about as much energy as it delivers...if not more. American corn-based ethanol production relies on large government subsidies as well as huge amounts of fertilizer and fuel. Ethanol also requires prodigious amounts of water from the rapidly shrinking Ogallala Aquifer.

To cash in on the new corn boom, many farmers are continuously planting corn instead of rotating corn with soybean plants. Rotation serves several ecological and agronomic purposes. It makes it more difficult for diseases, weeds and insect pests to persist. The right rotation also builds soil fertility. Soybeans are a natural partner to corn because they capture nitrogen from the atmosphere, leaving more in the soil for the next year's crop. By not using proper rotation practices, farmers will almost inevitably face the prospect of growing corn in nutrient-deficient clay as well as increasing the loss of biological diversity.

By the way, the tariff on imported oil is 0%. External versus internal cost accounting analysis, with its corollary – the thousand-year cost, indicates that it would be fairer and make more sense to encourage conservation and to raise money for protecting Middle East oil sources with a tariff on imported oil.

David Crockett Williams (Reporter): Non-Drug Industrial Hemp as Bio-Fuel

Non-drug industrial hemp is not hallucinogenic marijuana although both are varieties of the same species (*Cannabis sativa*). Hemp provides a surprising variety of products. More than any other plant on Earth, hemp holds the promise of a sustainable ecology and economy.

Hemp seed is the most complete single food source for human nutrition. Because one acre of hemp produces as much cellulose fiber pulp as 4.1 acres of trees, hemp is the perfect material to replace trees for pressed board, particle board and for concrete construction molds. Hemp made into paper is of higher quality and durability and also is less environmentally damaging to make than paper from wood pulp. For centuries hemp has been processed into high-quality fabrics, sails, ropes, diapers, etc.

Additionally, hemp grown for biomass could fuel a trillion-dollar per year energy industry, while improving air quality and distributing the wealth to rural areas and their surrounding communities, and away from centralized power monopolies. Remarkably, when considered on a planet-wide, climate-wide, soil-wide basis, hemp is at least four and possibly many more times richer in sustainable, renewable biomass/cellulose potential than its nearest rivals on the planet – cornstalks, sugarcane, kenaf trees, etc.

For a comprehensive reference read Robert A. Nelson's thoroughly researched *Hemp Husbandry*, available free online at www.rexresearch.com. The book that started the hemp revolution, "The Emperor Wears No Clothes", has sold more than 600,000 copies to date (to order see <http://www.jackherer.com/hemporium.html>). Also see <http://votehemp.com> and <http://groups.yahoo.com/group/hemp-reform-act>.

Hemp as a bio-fuel poses a possibly insurmountable competitive threat to the fossil fuel companies. Since the days of the American revolution, the U.S. Government proactively encouraged growing of hemp. In order to reverse the U.S. Government's policy and to suppress hemp production, certain large banks and fossil fuel companies eventually were able to fool and stampede the US Congress into legislating a national ban on marijuana (and hemp) in 1937.

The US is the only major industrial nation to prohibit the growing of non-drug industrial hemp.

In spite of increased production and utilization of hemp grown in other countries, and increasingly strident pleas by state legislatures, hemp-related businesses, etc to legalize non-drug industrial hemp, the Bush Administration through the US Food and Drug Administration, working on behalf of the energy cartels and their associated banks, still maintains with an iron grip a fraudulent suppression of hemp disguised as a "war on drugs".

Ironically, the U.S. Government's own Veterans Administration Medical Center in Pueblo, Colorado has conclusively demonstrated (<http://brain.web-us.com/alcohol.htm>) that a couple of weeks of painless alpha-theta brainwave tuning permanently stops all forms of chronic substance addiction including alcoholism.

David Crockett Williams has submitted June 26, 2006 the following analysis that suggests that discussion of the politics of non-drug industrial hemp suppression should be included as a subset of energy invention suppression politics discussion:

In addition to high-tech energy technologies and inventions that have been suppressed by various means against their developers, one of the most important suppression issues regards the hemp industry for production of bio-fuels to replace the need for fossil fuels.

The main reason why it is very important to include the suppression of the hemp bio-fuel industry in any comprehensive energy technologies suppression discussion is because learning the suppression history about hemp enables people to understand the nature and scope of the ability of industry and government collusion to suppress knowledge – just like the knowledge about the new energy technologies inventions has been suppressed since the time of Nikola Tesla over 100 years ago, by the same greedy industrial monopolists with the help of their bought and paid for politicians.

This is important because otherwise folks studying the data on new energy technologies always wonder how such important information could be kept from the public, "if it is real". The history of hemp suppression explains this with irrefutable historical information now neatly compiled and annotated by folks like Jack Herer and his friends. See <http://www.jackherer.com> and <http://www.myspace.com/hempjack>.

Hemp was outlawed in 1937 in a fraud on the US Congress that is still not widely known. After an intentional and racist twenty-year campaign of yellow journalism slandering the "marihuana" becoming popular with blacks in the US after its introduction in the South by Pancho Villa's army's excursions into the US, marijuana was outlawed without telling the Congress it was in fact the hemp plant, the cannabis extract of its flowers being a main ingredient in most all patent medicines for decades before and after the turn of the 20th century.

The American hemp fuel industry was pioneered by Henry Ford who was against the oil monopolies and favored bio-fuels for automobiles. He even grew hemp showing how this was a superior alternative.

But in the early part of the 20th century most of the new industrial monopolists were interconnected by the emerging corrupt banking industry, those who put maximizing profits above all considerations including cost to consumers.

When the cotton gin analog for processing hemp by machine was finally invented in about 1917, this threatened many industries then emerging including the new paper industry begun about 1900 with the discovery of the process using sulfuric acid to bond the lignin in cellulose to enable paper to be made out of trees.

Newspaper magnate William Randolph Hearst was so heavily leveraged into ownership of forests to produce paper for his newspapers that he would have been bankrupted by a strong hemp industry using the new hemp decorticator machine because it takes much less sulfuric acid to make paper from hemp cellulose, and hemp is renewable.

So Hearst orchestrated his yellow journalism for the banks and other emerging industries like the growing petroleum industry, chemicals industry, alcoholic beverage industry, the fiber industry, and the drug industry, perpetrating this fraud on the Congress by outlawing hemp as marijuana. Then began the systematic expunging of the truth about hemp from the historical record and from the educational system in the US, by using the spurious and fallacious "narcotics hysteria" fomented and ongoing since that time.

Before the publication of Jack Herer's book "The Emperor Wears No Clothes" in about 1990 very few people knew about hemp, this suppression campaign being so successful. Since then many people have learned the truth by reading his book and others including Herer's first editor – Chris Conrad. See <http://www.chrisconrad.com>.

There has come to be a very strong network of activists by now who know the truth and are working at many well funded levels to correct this situation. They know that the energy industry uses of hemp are important but they do not know much about the new energy technologies or the documentation of their suppression.

So including hemp energy industry suppression in this compilation about suppressed energy technologies will link these two key issues, both of which are needing widespread implementation to address global climate change as per the testimony of experts such as Dr. Brian O'Leary, who has started numerous new energy groups, and Alden Bryant, the grandfather of the UN Climate Stabilization Treaty movement and Earth Regeneration Society. See <http://www.brianoleary.com> and <http://www.earthregenerationsociety.org>.

This will afford the already established hemp issue activists the information they need to better open the minds of the American public and to also champion the end to suppression of new energy inventions, because they are fighting against a "drug war" prejudice. By their knowing and showing how the energy inventions are also being suppressed, the public could be awakened to the fact and the nature and scope of this industry-government collusion in suppressing any information that threatens the status quo of contemporary industry.

This will help them overcome the "drug war" as the smokescreen for the prohibition of hemp for all of its uses including energy and to replace the need to cut down so many trees and to re-green the planet to ameliorate climate change.

For an article explaining more about this double-edged sword to cut this Gordian Knot of suppression, the new energy technologies inventions plus a global scale emergency Hemp for Victory campaign, and why both are needed to remedy Earth's current climate crisis, see <http://www.angelfire.com/on/GEAR2000/gear.html>.

David Crockett Williams, Global Emergency Alert Response 2000
<http://www.angelfire.com/on/GEAR2000>, <http://www.myspace.com/davidcrockettwilliams>

Williams recently emailed The Canadian's article "Over 4.5 Billion people could die from Global Warming-related causes by 2012" in <http://www.agoracosmopolitan.com/home/Frontpage/2007/01/08/01291.html> which explains that the global warming crisis is much more immediate and dire than commonly understood. Western Siberia's 400 billion tons of methane in permafrost hydrate is gradually melting, releasing methane into the atmosphere. The released methane will speed the melting even more, initiating the rapid onset of runaway catastrophic global warming. Methane is more than 20 times as strong a greenhouse gas as carbon dioxide. Even a couple of billion tons of methane being emitted into the atmosphere each year would be catastrophic. For comparison, the atmosphere currently contains only about 3.5 billion tons of methane. 2012 is only five years away! A study by several thousand experts "Global Warming: The Final Verdict" in http://www.truthout.org/docs_2006/012207L.shtml dispels any doubts of a looming global catastrophe.

Dean Warwick: Ampliflaire Efficient Wood-Burning Stove

Dean Warwick's patented Ampliflaire is a major break-through in heating technology and is the only heat exchange process capable of raising combustion cycle efficiency within fuel burning systems. Other systems of heat exchange by their very nature must lower combustion cycle efficiency.

Ampliflaire recovers the heat energy other systems lose. Wherever fuel is burned or heat energy is wasted, there is a unit to resolve the problem, and flue-pipe models, retro-fitted to conventional boilers, convert them into overall effective condensing systems with remarkable savings.

Ampliflaire open fires release the electrical energy in plants, absorbed from the sun during the growing cycle. Grown fuels are the most efficient converters of solar energy, and the burning of grown fuels in this way is the safe way to make available energy from a nuclear reaction.

As hydroxides (OH) of carbon (C), the potential energy in plants far outshines their current use. With the largest man-made forest in Europe, the United Kingdom Government already recognizes a commitment to grown fuel which can easily satisfy British needs. Examples are winter species grass for methane gas, bio-diesel, hydrogen from plants, liquids, and wood replenishing solids.

Ampliflaire reduces heating bills by approximately 90%, reduces pollution, increases property value, removes household dust, eradicates condensation, and efficiently circulates refreshed air.

The company's brochure features numerous practical cases of individual or commercial clients who are now enjoying the benefits of Ampliflaire. From small cottages to large hotels, from churches to business premises, the company has an efficient and effective system available.

Dean Warwick keeled over dead October 7, 2006 in the middle of a Unidentified Flying Object (UFO) conference presentation in Blackpool, UK. Mr. Warwick was an alternative energy pioneer, former U.S. Government officer and intelligence insider who had promised to make some momentous announcements. The circumstances suggest a Central Intelligence Agency (CIA) 'hit' using an Extremely Low Frequency (ELF) weapon. These ELF weapons can be set on a 'delta wave' and are able to shut a person's nervous system down.

Much of this technology has been perfected on the 4th level of the CIA underground Dulce facility in the New Mexico desert. The fourth level of this underground base deals with technological aspects of human aura research, dream manipulation, hypnosis, telepathy and advanced mind control. The ELF weapons 'suck' the life out of the victim's body, and Warwick literally 'fell asleep' on his feet. The suspected assassin was followed out of the auditorium by a quick-thinking woman who then observed him laughing as he proudly reported his murderous deed on his cell phone. (Sources: <http://www.ampliflaire.co.uk>, <http://www.thetruthseeker.co.uk/article.asp?id=5337>, and <http://www.thetruthseeker.co.uk/article.asp?ID=5290>)

Idaho Inventor: Advanced Zero-Point Energy Device

During the FBI siege at Ruby Ridge, Idaho, where the FBI shot to death a mother and child during a standoff concerning alleged illegal firearms, an inventor happened to be living and working on an advanced zero-point energy device in northern Idaho.

As the story goes (told to Erik Masen by an investor who was on his way to visit "Inventor X," who had just made a breakthrough in free energy but also, like Howard Rory Johnson, had made the mistake of publicizing his breakthrough on a local TV station):

The day before the investor arrived, two U.S. Government agents broke into the home, thinking that both Inventor X and his wife were away. As it happened, however, X's wife was still home and very familiar with the use of her hefty handgun. She held the agents at bay inside the house, while debunking their story that they were cable TV repairmen checking out the lines.

Had it not been for the siege at Ruby Ridge that day, who knows what else might have happened there. (Excerpted with permission from Erik Masen's article SUPPRESSION FROM HIGHER UP Inventors Beware! The Deadly Campaign Against Free-energy Devices, *Electrifying Times*, Vol. 8 No. 3 and also in http://www.electrifyingtimes.com/erik_masen_suppression.html)

Grant Hudlow: Method of Converting Garbage and Tires to Gasoline, Etc

During the early days of the Reagan Administration, much lip service was given and some money was budgeted to develop alternative sources of energy. Pahump, Nevada resident Grant Hudlow, a former rocket scientist, was funded to investigate converting garbage, biomass, and tires to gasoline, low-grade heat, fertilizer, and saleable chemicals. His method began to look so promising that the oil companies and their allies in the Reagan Administration got scared and arranged to cut off his research funds. (Source: Gary Vesperman)

Joseph Newman: Energy Machine

In the news some years ago was Joseph Newman's energy machine. While Reagan stalled on acid rain, and Hodel pushed offshore drilling, the U.S. Patent Office continued to block commercial development of this latest of many government-smothered free energy devices. Newman sued the Patent Office for refusing to grant his machine a patent, in violation of its own regulations and the advice of the expert they chose to examine the device. They also issued false statements to the press about the invention's workability.

Over thirty respected electrical engineers, physicists and technical experts have endorsed Newman's machine and signed affidavits confirming his claim of greater energy output than external energy input. Ten congressmen have introduced bills which would require Newman's patent be granted.

As the Newman battle heated up, President Reagan appointed Donald Quigg, a thirty-year Phillips Petroleum executive, to head the U.S. Patent and Trademark Office. The judge entrusted with the case, Thomas P. Jackson, has violated judicial procedure, ignored expert testimony and ordered Newman's prototype confiscated and destroyed. During Watergate, Jackson was the attorney for John Mitchell and the Committee to Re-elect the President's corrupt finance division.

Newman identified the gyroscopic properties of subatomic particles and built a unique arrangement of coils and magnets to draw energy directly from them, thus converting almost immeasurably small amounts of the machine's mass into energy. Theory and device are detailed in "The Energy Machine", \$38.45 including postage, from Joseph Newman Publishing Co, Route 1, Box 52, Lucedale, Mississippi 39452; 601-947-7147. Free press releases and brief technical descriptions are also available; send SASE. (Newman's claims and theories do not seem to be universally accepted among mainstream physicists and engineers. Gary Vesperman)

Bill Jenkins (Reporter): Free Energy Machine

BILL JENKINS: Free Energy Machine. Live on Something's Happening. Audio cassette #A1008-90 \$9.00.

Bill Jenkins hosted the ABC radio "Open Mind" program for 7 years, the most popular program in the country in its time slot. He dealt with "New Age" topics and was taken off the air. Here he discusses the program and his adventures since, including a near arrest on treason charges for preparing to market a free energy machine.

Volcheck: Engine Powered by Gas with Unusual Expansion Properties

In 1995, a man named Volcheck of Grand Coulee, Washington, made a trip across the United States and back in a car powered by a special gas he developed that had unusual expansion properties. He claimed to have obtained the formula from some unpublished notes of Leonardo Da Vinci.

Volcheck says the gas expands enormously at about 395 degrees Fahrenheit to 450 pounds pressure. In other words, from approximately 390 to 395 degrees Fahrenheit, the gas expands from a volume of one unit to a volume of 10,000 units. He used this gas in a modified Franklin aircraft engine which behaved more like a steam engine. He never refueled during the trip, consuming \$10 worth of this special gas.

Soon after his return, some congressmen invited him back to Washington, DC, for a special hearing and congratulatory meeting. While he was gone, U.S. Government federal marshals or a S.W.A.T. team forced entry into his shop, confiscated or destroyed his record-setting car, plans, components, and special gas containers. They subsequently told him to forget any more projects like this.

Gianni A. Dotto: Anti-Aging and Anti-Gravity Thermionic Couple

DATE/TIME: 06/13/93 10:05
From : ROBERT BONNER
To : DAVID MCWHERTER
Subject: (R) UV radiation + us
Folder : A, "Public Mail"

"Dave, There was an Italian researcher (actually he had a Ph.D.) who did research on how magnetic fields affected the body. He made about 3 or 4 classifications of magnetic type energy fields. Two were bad; one had some health benefits but in the long run had detrimental effects. The last one was, of course, the one he speaks of as far as research goes. This person's name was Gianni A. Dotto, born in Venice. His main area of research was "Bio-physics". Anyways, he built something that resembled a thermionic couple. It also levitated too... I said his name "was"; he's dead – murdered some time back. His device worked really well as far as curing cancer goes. And he was killed for it. Run over, several times to ensure his demise. [Details about the Dotto Ring are available online at <http://www.rexresearch.com>]...

"His ideas on how our DNA is electrically controllable is fascinating. With this device you could theoretically live until you died of an "accident". Once you reach about 40 something, (well, let me put it differently...) Once your body reached 10 base pairs per turn (DNA lingo) you could use the device to SUSTAIN that state of being, anything less than that and you begin to deteriorate. i.e. grow old... Now, if, perhaps, you could find the right setting, maybe you could be 25 forever. But who in the world wants that?!?!"

"There were "reverse aging" effects detected on his elderly patients. So this is where all that mess above comes from. It isn't claimed to just be theoretical; he (Dotto) witnessed it. Anyways, I have the document and have read it. Would be cool to build.

"The most expensive piece is the ring part; it is an alloy. But, it would cost about 13 grand to build, maybe less if you knew the right people. It might be worth it for immortality and a life free of cancer and AIDS and the common cold. --- Robert Bonner"

IPMS: Thermal Electric Cooling Devices

The I.N. Frantsevich Institute for Problems of Materials Science (IPMS) was established in Kiev, Ukraine in 1951. It operated in absolute secrecy and was totally unknown to the American intelligence community until just prior to the implosion of the Soviet Union in August of 1991. The mission of the Institute was to use whatever tools or means were necessary to know everything there is to know about materials. They had no production deadlines to contend with, and there was not a single applications engineer in the entire organization.

The 6600 scientists and technicians who worked in the Institute developed an entirely new model of nonlinear quantum mechanics to describe the forces which make the world we live in behave as it does. This new model suggests that the material world is substantially different from the world described by the models relied on in the West. Seven new sciences, twenty-seven new technologies, and one hundred thirty previously unknown materials developed in the Institute are based on the same revolutionary new model of quantum mechanics.

Research and development in the deposition and culture of layered crystal lattices has produced an entirely new class of materials, previously unknown to Western science. These are referred to in recently submitted patent application documents as "Thermal Electric Cooling Devices". Because of the nature and function of a specially designed combination of crystal layered "hosts" and their intercalated "guest" materials, these specially designed capacitors actually absorb energy when subjected to a flow of electrical current, producing a specific cooling effect on the material surfaces. All other known materials produce heat when subjected to the same conditions. Temperatures of 60 degrees Kelvin (-259 degrees Fahrenheit) have been produced under controlled, carefully documented laboratory conditions. This is cold enough to liquefy free-standing nitrogen gas from the atmosphere.

The potential applications for this technology are manifold, but perhaps the most important is the potential it provides to totally eliminate any need for the use of compressed fluorocarbons of all types in refrigeration. Parallel applications in the telecommunications, computer and electronics industries have also been demonstrated to be highly effective and cost efficient, particularly as they relate to the use of super-conductive materials.

Arrangements to commercialize these useful energy inventions by joint ventures of the IPMS and more than a dozen private sector companies have been repeatedly sabotaged by the U.S. Government's Defense Intelligence Agency and others. (Source: David G. Yurth, *The Anthropos Files: Tales of Quantum Physics from Another World* – 2nd Edition, 2007)

Bob Lantz: Lantz Water and Power System

From : "Jerry E. Smith" <jerryesmith@gbis.com>
To : "Gary Vesperman" <vman@skylink.net>, "gear2000@lightspeed.net" <gear2000@lightspeed.net>, "halfox@qwest.net" <halfox@qwest.net>, "mruppert@copvcia.com" <mruppert@copvcia.com>
Subject : RE: Lantz needs Reno attorney
Date : Sat, 9 Feb 2002 08:58:07 -0800

Hi, I'm not sure who I'm responding to, so I am sending this to all of you. The only lawyer I know in the area who might be interested in this case is Day Williams of Carson City. He is a civil rights and personal injury lawyer who has represented me in the past (also the late Jim Keith and Sirhan Sirhan!).

Day R. Williams
Attorney at Law
204 N. Minnesota St.
Carson City, NV 89703-4151
775/885-8398
daywillia@aol.com
www.daywilliams.com

I hope this is of some assistance.

Jerry E. Smith
Author, "HAARP: The Ultimate Weapon of the Conspiracy"
(Adventures Unlimited Press, 1998)
<http://www.jerryesmith.com>

-----Original Message-----

From: Gary Vesperman [SMTP:vman@skylink.net]
Sent: Saturday, February 09, 2002 8:06 AM
To: Jerry E. Smith
Subject: Lantz needs Reno attorney

Jerry, I don't know anything about this, and I am too busy to even read it.

Gary

From : "David Crockett Williams" <gear2000@lightspeed.net>
To : "Hal Fox" <halfox@qwest.net>, "Gary Vesperman" <vman@skylink.net>, "Michael C Ruppert" <mruppert@copvcia.com>
Subject : Urgently need referral to Reno area attorney for Lantz
Date : Fri, 8 Feb 2002 02:16:08 -0800

WWII vet framed by CIA agent to stop energy inventions?

Below is draft of press release I will finalize with Lantz on the phone this morning and send to media lists etc. Please let me know if you can refer an attorney in Reno area who I can phone today to help with Lantz court appearance Monday Feb.11 at which his date to surrender to jail will be set.

From: "David Crockett Williams" <gear2000@lightspeed.net>
Subject: WWII vet framed by CIA agent to stop energy inventions?
Date: Thursday, February 07, 2002 10:06 PM

Seventy-five year old retired chemist and engineer Bob Lantz of Reno, Nevada, fought for the United States as a Navy pilot in WWII, but Monday the U.S. Government is set to imprison him, to "die in prison" according to his "public defenders", in an apparent scheme to suppress his new-energy invention to replace nuclear and fossil fuel power. Perhaps paralleling the case of Horst Jeske, jailed for years in a bogus fraud conviction set up by wired funds transferred by Frederick van Boduncan years after Jeske introduced him to Lantz as a CIA agent, and the case of San Francisco investigative journalist George Williamson who identified Boduncan from his research as a CIA operative previously involved in smuggling drugs into the US via oil rigs in the Gulf.

George Williamson was later named in a lawsuit by Mohamed Al Fayed against the CIA and other government intelligence agencies regarding purported CIA documents Williamson offered to Al Fayed linking the agency with the death of Princess Diana.

Lantz reports Monday for a custody surrender hearing after his sentencing to 5 years imprisonment for a fraud in fact perpetrated without his knowledge by Norbert Vogler of Colorado who forged investment certificates with Lantz' signature notarized by his friend who later acknowledged that Lantz was not present when the forged signatures were notarized -- one of 237 lies that Lantz has documented by Federal prosecutors in his trial after the government put him into poverty by illegally confiscating over \$250,000 from him after a raid in 1994.

Why would anyone want to put an old man in jail who is so scrupulously law abiding that he never even got a speeding ticket, someone who accepted the government secrecy order suppressing the Papp Air Engine and therefore cancelled his contract to make Papp's prototype, someone who even calmly accepted the multimillion dollar loss in business due to U.S. Government denial of his permit application to export his water purification Sonofloc System 77 to the government of Egypt for seawater desalination?

Could it be that powerful people within the U.S. government are implementing covert policies to keep new energy inventions suppressed that would threaten the fossil fuel and nuclear power industries? Copious evidence says yes, and that Lantz' troubles really started after he began making new-energy system prototypes for other inventors in 1977 culminating with his 1989 discovery of an "overunity" energy generation system which combines his System 77 with an ultracentrifuge so the overall device not only purifies any kind of water but also produces sufficient heat to produce megawatts of electricity without any fuel at all, perhaps by "tapping the zero-point energy" with a kind of device the US Department of Energy in 1998 called "the Holy Grail of energy research".

How else could it be possible for this bogus fraud case to even be prosecuted after expiration of statute of limitations, with falsified evidence and the apparent collusion of prosecutors who lied and and public defenders who refused to contest the lies and offer documentation of innocence? Why else would Boduncan have brought this "gold certificate scheme" to Lantz as a funding mechanism for his invention?

The Lantz Water and Power System was first tested in 1989. It can solve our global energy and water quality problems.

And what does he get for it? An unacceptable "deal" offered by prosecutors and pushed by two successive public defenders who each claimed he "would die in jail" unless he took the plea bargain acknowledging guilt and forfeiting his assets (over \$100k of that confiscated was not even in his name), a "raw deal" which this War Veteran refuses to accept.

Are we to sit by and let this happen or will concerned citizens and media bring his story out so he can get the legal help he needs to get his bogus conviction reversed, his name cleared and his money back so he can pursue development of his New-Energy System?

There is a vault at the US Patent Office containing 5,000 patents ordered secret by the government, confiscated from the inventors who are threatened with 20 years in jail if they release the information as per "dual-use" secrecy law uncovered under Freedom of Information Act and reprinted on p.162 of Jeane Manning's book *"The Coming Energy Revolution"*. Her book provides overviews of various energy inventions. Isn't it about time we did something to take this situation under public investigation and control, especially motivated by the current Enron fiasco exemplifying the "ethics" of the fossil fuel industry and government complicity in "rigging" the energy industry?

Can we help Bob Lantz become a hero of this coming energy revolution instead of its casualty? Certainly our surviving WWII veterans deserve better treatment from our country citizens that they love and fought and died for.

Dr. Timothy Trapp: 127 Energy Technologies

Dr. Timothy Trapp, Warren, Ohio, is President of the non-profit company World Improvement Technologies (WITS). A contact email for WITS is wits2011@yahoo.com. They also have another non-profit organization called World Improvement Through The Spirit (WITTS) ministry.

Dr. Trapp called Gary Vesperman June 24, July 1, and again on July 4, 2006 with accompanying emails to provide more details on the companies' activities and suppression history.

Currently employing 11 scientists, WITS has been active in producing, installing and servicing free energy systems worldwide for 19 years. Dr. Trapp and the two non-profits have developed over 127 energy technologies. Approximately 20 utilize cracking water into oxygen and hydrogen, approximately 14 are gravity motors, approximately 50 are radiant energy machines, and the remaining are miscellaneous energy, propulsion and pollution remediation devices.

127 energy technologies are currently commercially available, including large-scale over-unity power plants – 5 megawatts and up. Many of these power plants are under construction in foreign countries but not in the United States due to suppression by the U.S. Government. WITS also makes and sells a device for 30 dollars that can be added to any electrical system that has batteries which would drastically increase the efficiency of that system (e.g. cell phone, radio, electric car).

Dr. Trapp states that if governments were FOR this technology instead of against it, a home-power generator the size of a desktop computer could be built and sold for about the same cost as fuel powered generators or less.

When Dr. Trapp moved back from Alaska, upon arrival, the shipping container containing his tools, equipment, etc., had been emptied. In spring 2001, Trapp's lab in Arizona was raided. At the end of 2001 two WITS scientist assistants were (and currently still are) in Ohio prison on trumped up drug charges.

In the past 20 years the U.S. Government has destroyed over 14 WITTS laboratories. As recently as spring 2006 a WITTS laboratory burned to the ground. The contents of each laboratory contained millions of dollars worth of equipment and several costly free energy machines. Dr. Trapp's laboratories were raided, his equipment was smashed, and his people were beaten and arrested numerous times on false charges. False evidence was planted many times.

After beating up one of his WITTS salesmen, the salesman was then killed by driving the salesman's car off a cliff. Another WITTS employee was also murdered by U.S. Government and so-called law enforcement agents. There have been numerous attempts on the lives of Dr. Trapp as well as many of his associates.

Dr. Trapp wrote "This really should be a wake-up call to the people of America who believe we have religious freedom here. We don't, when it comes to anything that might help the little guy.

On the positive side, with energy prices constantly going up, there is more activity than ever in alternative energy. Power plants are going in many countries. And a few countries are seriously working to get off fossil fuels all together."

From : Jerry Decker <jdecker@keelynet.com>
To : Gary Vesperman <vman@skylink.net>
Subject : Re: Trapp energy suppression
Date : Sun, 23 Dec 2001

Hi Gary! His name is Tim Thrapp.... (Not entirely correct. His name is Dr. Timothy Trapp. Vesperman) he used to live in Alaska. He was the one who told me about Henry Ford working with John Keely to create an arrangement inside early Model Ts so that magnets placed in them would make them self-running....the story goes that Ford was threatened by the oil companies for graft (kickbacks) or something along those lines...so he did this magnet trick as insurance...no one has yet come back with any proof of the claim that SOME Model Ts had these slots in the bell housing where magnets could be placed to make it self-running...here is the file; <http://www.keelynet.com/energy/ford.htm> (Vesperman: This can not be entirely true. John Keely died in 1898.)

When Tim called me several years ago with that story, he said one of the cars had been found and the engine or a copy of it had been demonstrated, and the inventor killed on his drive home with the engine on a trailer...the engine was stolen... Tim also said he had some radical new power generator capable of 50 kilowatts but he gave no details about it...this was back in 1997....see ya!

Gary Vesperman wrote:

Dear friends, I have received a letter from an energy inventor the following new energy suppression incident: "Tim Trapp, from Ohio, was put in jail by the federal authorities in Arizona and by the state police in Ohio."

Without success I conducted some searches for Tim Trapp on keelynet.com and google.com.

Do any of you know of any authoritative reports on Mr. Trapp's energy suppression troubles?

Gary Vesperman
702-435-7947

Jerry W. Decker - <http://www.keelynet.com>

Richard Diggs: Liquid Electricity Engine

Richard Diggs, Custom Invention Agency, P.O. Box 11, Carthage, Missouri 64836; patent process on hold, though he has over two hundred others. Diggs developed at an inventors workshop (I.W. International) his "Liquid Electricity Engine" that he believed could power a large truck for 25,000 miles from a single portable unit of his electrical fuel. Liquid electricity violated a number of the well known physical laws that the inventor pointed out. The inventor was also aware of the profound impact the invention could have upon the world's economy – if it could be developed.

David G. Yurth (Reporter): Remediating Nuclear Waste Materials

From: David G. Yurth [mailto:davidyurth@comcast.net]
Sent: Saturday, April 15, 2006 5:27 PM
To: 'STetreault@stephensmedia.com'
Subject: Remediating Nuclear Waste Materials - UNLV

Dear Mr. Tetreault: After reading your article in the Las Vegas Review Journal entitled "Nuclear Project Draws Interest," I thought it may be of interest to you to know that the DOE has played this game with university and privately funded laboratories for many years. Perhaps the most comprehensive review of this subject ever undertaken was prepared by Mr. Richard Shamp, President of Nuclear Remediation Technologies, headquartered in Hyattsville, Maryland (301) 559-5057.

Beginning in 1997, NRT and its chief scientist S-X Jin [once the highest ranked particle physicist in the People's Republic of China, until he escaped to the US in 1994 while addressing the Institute of New Energy symposium in Salt Lake City, Utah] have been submitting critical laboratory documents to DOE, demonstrating the effectiveness of known technologies used to remediate radioactive emissions generated by nuclear fuel waste materials in both solid and liquid form.

After being finessed into providing all the definitive laboratory data to Dr. Frank Goldner of DOE's nuclear remediation division, then-Secretary of DOE Spencer Abraham attempted to confiscate, classify and impound NRT's technology while at the same time pretending to be considering providing grant money to support its continued development.

The fact that the technology in question had already been awarded six patents [K. Shoulders et al] was the only thing that prevented him from succeeding. Instead of providing grant funding, Dr. Goldner was instructed to put an end to NRT's pursuit of DOE funding for the development and deployment of its technologies. And that is precisely what he did.

During a conference call held on November 15, 2003, I was informed by Goldner that not only did DOE not intend to ever provide any funding to anyone for the purpose of remediating radioactive emissions in spent nuclear fuels, he insisted that it is and will continue to be DOE's policy for the next 40 years to encapsulate and bury every ounce of high-grade nuclear waste material stored in the US under ground at Yucca Mountain.

Further, he told us that any attempt to obtain any high-level nuclear waste materials for testing by anyone, including government funded laboratories, would be arrested and jailed without access to legal counsel under the Export Administration Act. I still don't know what the EAA has to do with remediating radioactive emissions, but that is what he said.

In 1999, while Elliott Richardson was Secretary of DOE, NRT was awarded a discretionary grant of \$2,000,000 for the purpose of advancing its test schedule. The work was to have been undertaken in concert with Dr. George Miley, physicist in residence at the University of Illinois at Champaign-Urbana – Dr. Miley's laboratory at the Champaign-Urbana campus was level 2 accredited by DOE, and was therefore acceptable as a test and development site. However, within less than 90 days after the announcement of the grant had been published, pressure from within the Department rose to such extraordinary levels that Secretary Richardson was forced to withdraw the grant, albeit grudgingly.

The only similar technology ever contemporaneously developed in the US for the remediation of radioactive emissions in high-grade nuclear waste materials was developed in the late 1990's by Dr. Paul Brown and his colleagues at World Atomics in Colorado Springs, Colorado. After being granted several patents for the 'Nuclear Spallation Device' he designed, Brown contracted with several Japanese contractors to build three successively powerful prototype versions of his device.

He had them built in Japan because DOE actively intervened more than a dozen times to prevent US companies from building it. The problem with Brown's device was that it was little more than a small, semi-controlled nuclear fission-powered device designed to continuously bombard nuclear waste material targets with a highly charged gamma ray field. Because it was so dangerous to operate, Brown was never able to obtain the necessary State Department or UN transport clearances to have it shipped across international waters into the US for further testing and development.

As you may recall, Dr. Brown was killed shortly thereafter under the most questionable of circumstances, just as the utility of his nuclear spallation technique was about to be publicly demonstrated in Japan.

(Only a month before he died, Dr. Brown met with me, Gary Vesperman, and a few of my business and science associates in Henderson, Nevada to present his method of neutralizing radioactive waste. His method is No. 13 in my list of methods of neutralizing or disposing of radioactive waste in <http://iiic.de/docs/GVComparison.htm>. A few weeks after Brown's suspicious fatal car accident, Art Rosenblum also died in a car accident. Rosenblum had been enthusiastically promoting Randall Mills' Blacklight Power Inc.'s energy source.)

We have known how to safely remediate radioactive emissions from spent nuclear fuels, both liquid and solid, for nearly a decade. We have the test data and prototype apparatus to prove it. That data, including all the protocols, policies, procedures and experimental design criteria associated with our work have been submitted to DOE many times over – Dick Shamp can tell you all about it if you want to go to the trouble to ask him – with the net result that DOE will not allow the US Postal Service to deliver our proposals any longer. If you want to see what is really going on with nuclear remediation, this is a very good place to begin.

Thanks for writing your article – you're about to find out how big Pandora's box really is.

David G. Yurth, Ph.D.
Director Science and Technology
Nuclear Remediation Technologies, Inc.

(Yurth's letter to Tetreault has not been published in any Las Vegas publication. Why? Maybe to protect the profitable contracts to be generated by the DOE-estimated \$150 billion lifecycle cost of the Yucca Mountain Nuclear Waste Repository? Gary Vesperman)

Paul Brown: Hyper-Cap E-Converter

Paul Brown, Ph.D., had invented this device which Gary Vesperman wrote up for his "Advanced Technologies for Foreign Resort Project" (see <http://www.icestuff.com/~energy21/advantech.htm>).

"Perpetual Battery. The hyper-cap E-converter is a thick quarter-sized battery which would put out .001 watt "forever" for such applications as critical components inside fail-safe computers, cellular telephones, etc. The energy comes from tapping ether fluctuations."

The following is excerpted with permission from "Inventor Paul Brown's Nightmare Story", *Electrifying Times*, Vol. 10, No. 1, www.electrifyingtimes.com. His story originally appeared in Jeane Manning's book "*The Coming Energy Revolution*" www.jeanmanning.com.

Brown invented a novel method for converting natural radioactive decay material into electricity in the form of a battery. In February 1987 the proud inventor and his associates at a private research company in Boise, Idaho, decided it was time to make a public announcement of his discovery.

A series of traumatic events followed. The Idaho state departments of health and finance filed complaints against both the company and Brown. His license for handling radioactive materials was suspended. He began to receive anonymous threats, such as "We will bulldoze your home with your family in it."

Relocating the company to Portland, Oregon, did not stop the troubles. Despite the fact that a 1988 Fortune magazine article commented favorably on the nuclear battery venture, securities fraud charges were filed against Brown and his company. Oregon's finance department investigated, as did the Internal Revenue Service and the Securities and Exchange Commission.

After meeting each challenge, Brown redoubled his efforts to develop his technology, but events worsened. His young wife was assaulted. Even in their home they did not feel safe; it was robbed three times and vandalized on four other occasions. Brown was accused of drug manufacturing and eventually lost control of his company. The Browns' also lost their home. Finally, the pipe bombing of his mother's car in the early 1990s drove Brown to become a recluse.

"I understand now why inventors drop out of society," he said in a 1991 open letter to other new-energy researchers. His advice to them! "Keep a low profile until you have completed your endeavor, be selective in choosing your business partners, protect yourself and your family, and know that the nightmare stories are true." Brown eventually died in a suspicious car accident in April 2002.

Ira Einhorn: Free Energy and Mind Control Researcher

(Excerpted from "A Snapshot of my 70's" by Ira Einhorn, September 1, 2002)

... What Geller could do, I saw a lot of it first hand, indicated that the basic physical framework in which physics operated was inadequate and that so called "free energy" devices -- devices that would solve our energy problem and end what is now called global warming and allow for the decentralization of most economic activities -- could become a reality. Hence I circulated all previously known anti-gravity information and all the emerging work on "free energy" devices.

Unfortunately, all new technology can be used as weaponry as well as for human benefit. So, I was soon up to my ears in a multi-pronged intelligence game that is still waiting to be unraveled...

... So when the opportunity arose, after a series of dinners and meetings in Princeton and New York with Bogdon Maglich, the head of Migma Fusion, the only private nuclear fusion research operation in the United States, and a number of Yugoslavian government officials, I agreed to help organize a large Tesla celebration. To this end, I enlisted the support of the president of the prestigious Franklin Institute in Philadelphia, Bowen Dees, and after a stint at Harvard and with the blessing of the Yugoslavian Consul-General in New York, I went off to Yugoslavia, to spend days at their expense, as an unofficial ambassador.

I was planning to do many things during this celebratory conference that would have linked the Tesla Museum in Beograd with the Franklin Institute in Philadelphia: besides giving Tesla his just due and showcasing his achievements in a major exhibit at the Franklin Institute, while holding a major international conference on his works, I would also have organized a smaller conference on the suppressed aspects of his work in mind control and free energy and found a way to directly demonstrate mind control to those who came to the conference.

In the fall of 1978 I was a Fellow in Residence at the Institute of Politics within the Kennedy School at Harvard. I taught one course, ran a small lunch time chat series in which Harvard luminaries, Ambassador Reichauer, E. D. Wilson and Karl Deutsch, among others, ate and chatted with 5 or 6 of us for a couple of hours; I lectured in every conceivable venue at Harvard, conducted a number of public symposiums, brought a number of the members of my Network to Harvard to lecture, ate dinner with a host of well known political figures, and made an inordinate amount of noise about mind control technology and the Russian Woodpecker to, among others, then CIA head Stansfield Turner. This led to a meeting in the Boston Airport, arranged by one of JFK's chief aides, on the matter with a top defense intelligence scientist who ended up spending the evening with me and giving me his home telephone number.

In 1979 I received a small private foundation grant to study free energy devices in preparation for a large involvement in such activities. I was planning to visit all of the inventors personally and then prepare a report that would have formed the basis of a venture capital enterprise that had been encouraged, due to some of my mailings, by a number of my affluent friends. The objective was to develop and bring one device to the marketplace...

...All was not to be. I was busted for a murder I did not commit, and all my work on mind control and free energy became history. [signed] Ira Einhorn September 1, 2002

The following is excerpted from Ira Einhorn's July 5, 2002 email:

Robert Eringer proposed all kinds of book schemes for me; schemes in which I was not interested. Nor did I find any of the people my agent sent to me, re: the biography, to be of interest. Thus when Eringer suggested he would like to look at my fourth novel, Cantor Dust, which was near and dear to my heart, I informed my agent and sent it to him. Eringer was very enthusiastic about it. He said he would prefer to do my autobiography, but would work on getting my novel published as an opener to getting my autobiography. I said he was welcome to try. Thus began a continuous stream of many hundreds of e-mails between this alleged intelligence operative and myself, broken only by his journeys to England, wherein he told me he saw a number of publishers without success and one new house that agreed to publish Cantor Dust when they were actually in business, and his family vacations. We were still at it the day I was extradited to the United States: July 20, 2001... [Deleted]...

One of Robert Eringer's closest associates is Claire E. George, past Deputy Director of Operations for the CIA, in charge of covert operations for the entire planet. Sources who have researched the situation indicate that Claire E. George and Robert Eringer have worked together on a number of operations, still work together and have a pile of money at their disposal.

Einhorn presents the highlights of his case in <http://groups.yahoo.com/group/Ira-Einhorn/message/454>.

"We'll know our disinformation program is complete when everything the American public believes is false." -- William Casey, CIA Director (from first staff meeting, 1981) (Source: THE BROTHER JONATHAN GAZETTE DAILY DIGEST Wednesday June 28, 2006.)

How much is good press worth? To the Bush administration, about \$1.6 billion. That's how much seven federal departments spent from 2003 through the second quarter of 2005 on 343 contracts with public relations firms, advertising agencies, media organizations and individuals. (Washington Post; Feb. 14, 2006) (Source: <http://www.washingtonpost.com/wp-dyn/content/article/2006/02/13/AR2006021301897.html?nav=hcmodule>)

Thomas Henry Moray: Radiant Energy Pump/Electricity Generator

Thomas Henry Moray, Ph.D., (August 28, 1892 - May, 1974) was an inventor from Salt Lake City, Utah. Moray graduated from The Latter Day Saint's Business College. Moray studied electrical engineering through an international correspondence school course. He received a Ph.D. in electrical engineering from the University of Uppsala.

T. Henry Moray's research dates from the time he was 9 years old (1901). Over the 73 years of Moray's research, he left behind him a wealth of notes, not only pertaining to radiant energy, but a wide range of scientific research bordering all the way from the devulcanization of rubber, the influence of mineral reactions in the presence of high energy, bio-electronic effects (electrotherapy), sound pick up, solid-state physics, and finally the detection of energy that constituted the major endeavor of his work.

Moray was a pioneer in the field of electrical energy. As a youth he greatly admired Nikola Tesla and in particular was very interested in Tesla's obsession with the earth having a limitless supply of energy available to it from the universe. Like Tesla, Moray wanted to find out how to tap this energy. Like a lot of people he became amazed at the "crystal radio" where a crystal can be tapped with a fine wire to make a radio work – without any battery or power. Moray figured that if this was possible it should be possible to find a crystal (or "magnetic rock") that could be tapped for a power source.

Moray became very interested in the properties of certain rocks and crystal structures and the powders from them. He actually developed and utilized a transistor more than 20 years before anyone ever dreamed of such things. These solid materials are what he made his so-called Moray valves out of; they were like radio valves *but were not using a heated coil* like radio valves (also known as vacuum tubes in today's terminology). They were all cold with no external power to feed them. They were a mixture of semi-conducting materials and intricate one-way conducting materials (diodes in today's terminology). The Moray valve was therefore a solid-state device – unlike a radio valve that heated a plate to produce energy.

It is well documented that Moray developed a bipolar semiconductor as early as 1927. His germanium "valve" was working in 1931. In the 1930s Moray developed advanced semiconductors and transistor-like devices.

Moray provided a complete disclosure of his semi-conductor research to Dr. Harvey Fletcher of the Bell Laboratories. Dr. Fletcher later became head of the department at Bell Laboratories that developed the transistor. Moray, therefore, could be the true father of modern electronics since his work predated the Bell Laboratory bipolar transistor findings by at least 20 years.

During the 1930's T. Henry Moray was refused a patent on his cold semiconductor cathode because the patent examiner couldn't understand how it could emit electrons. The patent examiner reported that he could not allow the patent because he could not see how it would work since "the cathode had no means of being heated".

"He tried to patent his device, but the requests were denied because the item he called the "Moray valve" was too new a thought for the patent examiner. It was actually a germanium transistor, and solid states were unknown at the time." his son John Moray said. 20 years later the development of the transistor apparently proved that his device could actually have worked.

Both Nikola Tesla and Thomas Henry Moray consider harnessing cosmic energy (vacuum or zero point energy in today's terminology) as the most practical method of producing energy yet discovered by man. Furthermore, they thought it is possible to utilize this vast source of energy from the universe without a prime mover at any point on the earth or in space – on the ground, in the air, on the water, under the water, or even underground.

Radiant energy is energy that is transported by waves. This includes energy transmission in the form of waves through space or various media. Radiant energy is also energy transferred through electromagnetic waves. Solar energy is a type of radiant energy. Radiant energy is the sum total of all the energy that comes to the earth from all the universe. The earth also reflects back radiant energy into the universe. Our sun directs electrically charged particles towards us. Radiant energy may be calculated by integrating or summing radiant power with respect to time. Radiant energy is usually expressed in joules.

During the 1920s Moray demonstrated a "radiant energy device" to many people who were unable to find a hidden power supply or batteries. Moray called his device a solid-state detector or the "Moray valve". It basically comprised of a large antenna connected to a complex series of high-voltage capacitors, transformers, and semiconductors. By supposedly stimulating the existing oscillations of radiant energy from space, his device could generate electrical power without any man-made power input. By 1936, Moray had eventually engineered his device so that a 55-kilogram version could constantly produce 50 kilowatts of power for several days.

An electrical generator may be considered as not in the true sense a generator – as electricity is not made by the generator – but is merely an electrical pump. Moray's radiant energy device may then be referred to as a cosmic ray pump: that is, a high-speed electron oscillator serving as a detector of cosmic radiations which causes a pumping action or surging within its circuitry. Moray used the term "radiant energy" to describe that source of energy coming from the cosmos to earth and radiating from the earth back to where it came. This is the energy the Moray device captures and could be described as those particles of energy pervading all space.

What sort of an apparatus is Moray's radiant energy device? Briefly, it would appear to be similar to a radio receiving set of power proportions.

An antenna is connected to a 29-stage solid-state collector material; a small rounded pellet mixture of triboluminescent zinc, a semiconductor material, a radioactive or fissile material, and germanium. The device contains two coils of wire, or inductances. It also contains several condensers, or capacitors, of different sizes. There is a detector tube, or electronic valve, and two oscillator tubes. Added to this is a "bar of silver and a bar of copper", a starting device, and a step-down electrical transformer, reported to be 1000-to-1, primary to secondary.

After tuning of the device the semiconductor material acts as a one-way gate (diode in modern terminology) for surges of high-frequency background atomic ion energy which can go through the material more readily in one direction than the other. For conversion of ionic to electromagnetic energy to then be transformed into useful electrical power by conventional radio circuitry and a transformer, the device must be grounded.

All of this was enclosed in a box measuring about 30 inches long by 16 inches wide by 16 inches high. It weighed about 30 kilograms. There were no moving parts. Moray said there are no dangerous radiations surrounding the box when it is in operation.

Moray's 30-kilogram radiant energy device produced 4 kilowatts of cold electricity which was able to power light bulbs. However, electric motors require special winding to increase their efficiency. While commercially available electric motors will operate on the power from a radiant energy device, they are not as efficient as motors running on ordinary commercial currents. Moray says when his motors are running in the dark they glow with a violet aura. His motors ran cold!

It has been estimated that using current dielectric technology that a 50-kilogram radiant energy device could be built to produce 300 kilowatts – sufficient to power buildings and also electric vehicles.

Some persons who have seen radiant energy power lights say the bulbs look as if they were filled entirely with white light, as if the gas itself which fill the bulbs were fully incandescent. Moray believes this to be true.

Radiant energy will heat electric flat irons and other electrical heating devices. It is claimed heating capacities are reached much more quickly with radiant energy than with commercial currents, and are considerably hotter than when powered with ordinary electric energy.

One photograph shows Moray demonstrating his generator as it powers 50 100-watt light bulbs and a 655-watt Hotpoint iron. Thus he proved that his radiant energy device was not running off batteries – as his detractors said it did.

By 1936 he had developed a generating unit that weighed about 55 pounds and was capable of producing as much as 50 kilowatts of power on a steady basis.

On several hundred occasions Dr. Moray lighted a bank of 35 light bulbs with power from his simple but ingenious radiant energy device. There were 20 150-watt bulbs on the panel. At the same time the generator powered a 600-watt glow heater and a 575-watt flat iron.

Moray, as Nikola Tesla before him, was unsuccessful in introducing his devices working on this principle. Some report that his secret was forgotten. Moray tried for several patents to no avail.

These valves are ONE reason why patents were continually refused – as he was told "there is no such thing as free energy".

"You must put energy in to get it out." As patents were applied for, there were refusals due to the fact that the patent applied for "infringed other patents". Even though Moray patiently wrote details of how this could not be, the US Patent Office refused to allow any.

On the other hand, Moray gradually had perfected his device's output from a capacity to light one small incandescent light bulb to a present capacity claimed to be 50 kilowatts. Fifty kilowatts represents about 67 horsepower and, certainly, 67 horsepower is not to be disregarded. Many small factories do not use as much as 67 horsepower.

According to Moray, one of his radiant energy devices can be built for about \$800 (year is unknown as there has been considerable inflation). Mass production methods might cut this price in half. Under these circumstances, a unit in a home would bring about a substantial saving in power bills over several years time.

As many as 100 persons have witnessed radiant energy demonstrations. Radiant energy, as it emerges from the Moray apparatus, may be considered a form of electricity. It is an alternating current, but an alternating current of very high frequency.

If a photograph of a single bulb lighted with radiant energy is taken the print shows a large, dark ring, perpendicular to the base of the bulb. This ring looks like a circle of translucent black fog. It seems the light somehow reflects itself on the air, or projects a shadow of itself there.

The demonstrations attracted newspapers and scientists from Bell Laboratories and from the Department of Agriculture, but none could attest to how the device actually operated nor could evidence of fraud be found. Even though eminent scientists examined his device during and after its operation, and admitted that they could not understand the source of the power they had witnessed, still he was never able to gain their support for his work.

Moray refused to sell his technology to corporate interests, fearing its misuse.

In the later 1930's engineers from the Rural Electrification Administration (REA) were ordered to work with him by President Franklin Delano Roosevelt. A controversy grew between the inventor and the government engineers. As a result Dr. Moray charged that the REA was trying to sabotage his work.

Moray reported that he and his family had been threatened and shot at on several occasions. His laboratory was ransacked to stop his research and public demonstrations. Repeated assassination attempts were made against his life. It was necessary for him to bulletproof his automobile since he was shot at while driving down the public street. Small wonder that Moray developed an extremely alert and suspicious nature, and visitors to his desk often noticed a fully loaded pistol lying on the desktop within easy reach of his hand!

In 1940 Moray demonstrated before the members of the Public Utilities Commission (in Utah?) his free energy generator. It maintained a continuous output of 250,000 volts with no apparent input.

The next day Moray was found shot in his lab, and all of his notes were stolen. Moray had been wounded by shotgun pellets in his lab by an attempt to frighten him into handing over the secrets of his work. Except for his own skill with a pistol to successfully defend himself against his assailants, Moray would have been murdered.

An REA engineer named Felix Frazer who was Moray's assistant had gone berserk and smashed the Moray device with an axe. It was never rebuilt. The frustrated inventor could not afford to duplicate his invention. He went to his grave many years later convinced that the destruction of his device was part of a communist plot. Frazer apparently was angered that Moray would not sell his device to corporate interests.

There is a rumor that to stop the USSR getting this technology the equipment was destroyed by Moray's assistant. Or, the equipment was destroyed because Moray refused to unconditionally hand over all aspects of the devices he had built. It was further claimed that one of his sons dumped the entire contents of Moray's laboratory into a river – because of continued threats and harassment – not only to himself but to his family as well.

The entire truth may never be known, but it is a fact that Fraser became enraged and grabbed a sledgehammer and smashed Dr. Moray's device to pieces.

"Dad believed to his dying day it was all part of a communist plot," John Moray said. "He had refused to cooperate with certain known communists so his invention paid the price," Moray added.

"It certainly smacks of some kind of conspiracy," the younger Moray mused.

The tragedy of it all was in the fact that Dr. Moray's years of research and development, and his entire fortune were wiped out when his device was smashed with a sledgehammer. It had taken Moray 20 years and \$200,000 of his own money to develop it.

"Because of the expense and hardship in rebuilding the generator, which the patent office had refused to consider, my father never actually completed more than one unit at a time as he perfected it.

"Each updated model used parts from the previous model as he made improvements in successive stages."

Another factor in the total destruction of this marvelous technology was the demise of the various companies that provided Dr. Moray with components. Both the Great Western Radio Co. and the Baldwin Electric Co., which he worked with vanished as part of his resources.

"Inflation, the massive war effort and threats to my father's life spelled doom to any ideas he may have had for replacing the destroyed generator device," the younger Moray claimed. However, more than \$200,000 in the late 1920's and early 1930's would indeed translate into many millions today.

Make no mistake about it; Dr. Moray did what he claimed to have done. He had achieved free energy. The Soviet Union even offered to provide him his own fully equipped laboratory in Russia, with no expense spared, and to back his experiments fully. Fraser could have been a trained Soviet agent who had succeeded in working his way into Moray's confidence and gaining access to Moray's laboratory as a technician and assistant. When Moray still refused to give his invention and services to the Soviet Union, the assistant destroyed the device, smashing it to pieces with a sledgehammer.

Sadly, T. Henry Moray died with his dream unrealized and the original device destroyed.

Walter Rosenthal (Reporter): Small Electrical Power Converter

Walter Rosenthal was a retired aerospace engineer with some test equipment such as oscilloscope and voltmeters. He had closely followed for a long time development of new sources of energy and personally knew some energy inventors. (Rosenthal recently passed on from natural causes. He received much praise for his careful energy invention measurements. See for example Thomas E. Bearden's eulogy in http://peswiki.com/index.php/Site:LRP:Tom_Bearden_Remembers_Walter_Rosenthal_%26_Floyd_Sweet)

More than twenty years ago, Rosenthal became involved with an inventor's invention of a small electrical power converter. Something about converting a flashlight battery's DC to 4 watts of power with a high conversion gain. He realizes now that it would be a very valuable invention because it could be used in cell phones, laptop computers, portable radios, etc.

Then the inventor got a call from a man representing Atlantic Richfield (now ARCO). They offered the inventor \$40,000 to take it off the market. Otherwise, they would subject him to troubles, etc. He refused. They eventually offered \$400,000.

One day he came home to find a group of men going through his apartment. He asked them to leave, and has had no further confrontations. He has not done any further development work on this device. Perhaps consequently, as of a few months ago, he was still alive and well. That energy device is still not on the market.

Later on, Rosenthal figured out that the Atlantic Richfield people could only have known details about the invention by tapping either his or the inventor's telephone.

Joseph C. Yater: Heat-to-Electricity Converter

In September 18, 1975 Joseph C. Yater invented a heat-to-electricity converter that he says will cost the consumer approximately \$200 and would be up to 90% efficient. The device operates by capturing "fluctuation voltage" (the static noise heard on radios and amplifiers). The rooftop device would be heated by the sun and use millions of microcircuits to tap the freed electrons from heated molecules. Yater took his device to the U.S. Government, which declared that his device had "real potential". After promising him a working model within 6 months, the U.S. Government came back to him with the reply that the device would be impractical. Subsequent scientific analysis also revealed flaws in Yater's reasoning.

Adam Trombly: Trombly-Kahn Closed-Path Homopolar Generator

During the early 1980's Adam Trombly and Joseph Kahn, Ph.D., co-invented the Trombly-Kahn closed-path homopolar generator which has an output power exceeding its power input by a factor of 4.92. The patent application and drawings represent the result of the expenditure of \$290,000 in two phases. Their US patent application was rejected twice on the grounds of impossibility that the machine could work. Then the United States Patent Office notified the Department of Defense. Instead of congratulations, Trombly and Kahn received a secrecy order. The two authors were warned not to publish any information on the basis of violation of secret homopolar generator work being done concurrently in the U.S. Government's Department of Defense.

Adam Trombly, the senior designer of the machine, received two written gag orders from the Department of Defense – forbidding him to reveal details of the machine – upon threat of 10 years imprisonment for violating security relating to homopolar generator design. The DOD-imposed secrecy has prevented any recompense whatsoever from accruing to the men who performed this work.

According to information obtained under the Freedom of Information act by the Federation of American Scientists, the Pentagon placed 774 patent applications under secrecy orders in 1991 – up from 290 in 1979 – and 506 of these orders were imposed on inventions by private companies. The U.S. Government has standing gag orders on several thousand inventions.

In 1989 Adam Trombly proposed the retrofitting of the Four Corners coal-fired power plant with an advanced Trombly-Kahn closed path homopolar motor-generator. Trombly and Farnsworth estimated that the cost of such an advanced electrical generator to be approximately the cost of installing smoke scrubbers on one coal-fired generating unit. (Sources: <http://www.rexresearch.com/trombly/trombly.htm> and <http://www.broandrew.com/suppression.html>.)

Adam Trombly: Trombly-Farnsworth Solid-State Oscillating EM System

Adam Trombly also co-invented with David Farnsworth the Trombly-Farnsworth solid-state oscillating electromagnetic (EM) system. In June of 1989 Adam Trombly and David Farnsworth of Zero Point Technologies, Inc., demonstrated a solid-state resonant device which physically produced over fifty times greater electrical output than input at the Church of the Holy Covenant just prior to a major address by Trombly at Dag Hammarskjöld Auditorium in the United Nations. The demonstration had originally been scheduled to coincide with Trombly's address.

But at the last minute Trombly and Farnsworth were informed by the Director of the United Nations Environment Programme, Noel Brown, that United Nations Security personnel refused to allow the demonstration in the Auditorium for security reasons. (The Church of the Holy Covenant was no longer used as a church but was used by the United Nations as an alternate venue for the demonstration of "sensitive" technologies such as that belonging to Trombly and Farnsworth.)

The demonstration was attended by fifty people including five major Wall Street executives, several engineers, and a Senior Engineer from Boeing Corporation Dr. Charles (Chuck) Clark. Clark had been allowed to spend several hours alone with the technology prior to the New York demonstration. Clark had checked for every conceivable trick that might be used to deceive naïve or unwitting observers.

The demonstration went perfectly. Many present stated that they felt they had attended a historical event; one that would help the human species emerge from the economically stratified and earth destroying dark ages of fossil fuel technology and into a time of universal, pollution-free electrical power. Some participants/observers were moved to tears by the ramifications of what they had witnessed.

After the demonstration the entire entourage proceeded to Dag Hammarskjöld Auditorium where Trombly addressed the standing room only crowd. He asked all of the witnesses to stand, and they did.

He then asked Dr. Clark to comment on what he had seen. Chuck said, "I am not here representing Boeing. I am here because I was hired to find out if this technology really works. I can't tell you how this thing works. David and Adam can explain that better than me. What I can tell you is that it does work exactly as Adam has just said. I have checked for every trick in the book, and all I can say is that this works."

There was a stunned air in the room. When Trombly finished there was a long standing ovation which was followed by a very long walk from the front of the Auditorium to the entry foyer. One senior diplomat called it "One of the longest standing ovations in the history of the UN."

There were just so many people from all over the world expressing their excitement that it took nearly forty-five minutes for Adam to get through. By the time he reached the foyer he saw the five Wall Street executives were huddled up with a man whom Adam had introduced the day before as one of his best friends. They looked anything but happy. As Adam approached, one of them took him aside and said, "Your friend just told us that you faked the demonstration. Is that true?"

"Are you kidding? My entire life has led up to this moment. The future of this planet will depend on the development and deployment of these technologies if we are to have any hope of surviving the hell we are currently creating for ourselves." Adam was stunned.

"I do not know what his motivation is for saying that. He is not a scientist nor is he an engineer. It just doesn't make any sense."

"Well, you said he was one of your best friends. So you have to understand that our commitment of \$500,000,000 is withdrawn until we can sort this out."

In an instant one man had obstructed history for us all. He misrepresented the truth even after the real professionals had agreed that the technology worked, and that there were no tricks. Adam later realized that this individual had cleverly infiltrated his life and won his confidence. He had torpedoed the future.

Adam did hours of interviews that afternoon and into the evening. Dr. John Lilly also asked to be interviewed. He said, "This is the most wonderful and exciting thing I have ever seen! I am coming out of retirement to help Adam promote this thing. Maybe we do have a future that's worth living in after all."

The following Monday Trombly and Farnsworth presented a similar demonstration to some Congressional representatives in the US Senate Banking and Finance Committee Hearing Room. After the Congressional demonstration, Trombly commented: "Here is a technology that points to a better future; a future free of the taint that the politics of scarcity casts upon us all."

After these demonstrations Trombly indicated that he had so far survived 47 assassination attempts over this technology which apparently threatens existing energy industry monopolies.

While David Farnsworth was in their \$20 million Oregon shop/lab, early one March morning in 1994, badge-wearing US Marshals broke in with sledgehammers and chainsaws. Farnsworth watched with his wife and a friend from a motor home while they ransacked his lab and took the energy machines away.

They recklessly removed expensive electrical devices including expensive spectrum analyzers, earthquake forecasting devices and advanced generating equipment away from walls and shelves. They carelessly stacked them in waiting trucks and vans to be transported to a federal warehouse in north Portland.

The supposedly law-abiding U.S. Government employees also took home thousands of dollars of Farnsworth's expensive ham radio equipment.

The US Marshals then filed charges against David Farnsworth and took him to court. Eventually, those charges were dropped.

Adam Trombly has had a total of 54 attempts on his life. One of the latest occurred early in 2006. Also, a suspicious incident occurred July 4, 2006 when Trombly was visited at his Aspen, Colorado home by a man of Middle East origin from Las Vegas who knocked on his door and earnestly tried to give him ten free cases of meat. Having been previously forewarned, Trombly refused, even after an additional offer of a free freezer, fearing the meat had been poisoned. This incident indicates that an energy invention suppression hit squad might be based in Las Vegas.

(References: June-December 2006 emails by Adam Trombly and Bruce Meland to Gary Vesperman. "In Search of Quantum Motors and Generators" by Bruce Meland, *Electrifying Times*, Spring-Summer 2006, Vol. 10, No. 1, www.electrifyingtimes.com. The book "*The Coming Energy Revolution*" by Jeane Manning. Tom Bearden's web site www.cheniere.org/correspondence/080301.htm.)

Gary Vesperman: My Car was Fire Bombed July 3, 2006

John Martens and I share the rent on a house in a nice, relatively crime-free neighborhood in Henderson, Nevada. The evening of July 3, John rode home on his bicycle at 9:45 p.m. The streets were quiet with no one walking in our neighborhood. He left on his bicycle 15 minutes later in a different direction. He still sees no people around. He does recall having a spooky feeling that someone was watching him leave and looked back a couple of times as he was riding away.

At 10:15 p.m. I went to bed and shut off my bedroom light which can be seen from the street. A few minutes later John's dog Coyote started barking. I let her bark for a couple of minutes hoping she will stop. I got up, looked out the front door, and could see what appeared to be fireworks burning in the street behind the car. I walked to the car, looked in the rear window, and saw the bottom of the back of the driver's seat burning!

I ran back into the house, called 9-1-1 and reported my car on fire. The firemen came later than I thought they would and with an iron bar proceeded to break all four door windows, even the two small windows in the two rear doors. I had jangled the car keys in front of them when they had arrived. They then found that the driver's side door was unlocked and sprayed water on the burning driver's seat to put out the fire.

They told me to wait for their arson investigator. He found on the driver's seat the carcass of an incendiary fire bomb three inches long and an inch wide. He said it burns at 2000 degrees.

The next day, being July 4, I asked two fireworks sales stands about it. It is illegal in Clark County where Las Vegas is located. It can be bought at Indian reservations fifty miles north. It appears whoever threw the firebomb in my car knew what he or she was doing.

I asked my mailman who has been delivering mail in my up-scale neighborhood for over ten years. He said he has NEVER seen a car torched in our neighborhood during all those years. My car is only one of numerous vehicles parked in our neighborhood. Yet my car, which is registered in my name, was the one targeted.

The car is a 1991 Chevrolet Corsica which had been painted, its interior in good shape, and has a fuel-efficient strong power train with new tires and many new parts such as new brakes, muffler, etc. It would have been a nice high-mileage reliable car for several years. In addition to the firemen breaking all the door windows, the roof lining burned and there are other burns and melted plastic parts. The interior is a mess. John is a certified auto mechanic and had spent many hours restoring it. John and I eventually had the car towed away to a junk yard as a heartbreaking loss.

Adam Trombly has had a total of 54 attempts on his life. One of the latest occurred early in 2006. Also, a suspicious incident occurred July 4, the day after my Corsica was firebombed, when Trombly was visited at his Aspen, Colorado (?) home by a man of Middle Eastern origin who knocked on his door and earnestly tried to give him ten free cases of meat. Having been previously forewarned, Trombly refused fearing the meat had been poisoned. The man became upset and even tried to add a free freezer. He then gave up and told Trombly he had to get back to Las Vegas. A few minutes later, Trombly took a walk and found the man sitting on a sidewalk curb talking on his cell phone.

Trombly's report hints that an energy invention suppression hit squad might be based in Las Vegas.

One of my energy inventor friends, who himself has been a target of energy invention suppression, happened to visit me a few weeks later. He has emailed "What I witnessed at Gary's house was no teenage prank. It was obviously intended to totally destroy a car, not just scratch the paint or leave a scar. With several other cars parked at the same house, Gary's was obviously targeted, not just the easiest to reach."

Three weeks before my car's firebombing, I had published on the Internet the third version of this compilation of energy invention suppression cases which can be read in www.byronwine.com (do Find for Vesperman). Other sites can be found by entering in the dogpile.com search engine Vesperman suppression.

So it may be that the energy invention suppression terrorists, possibly based here in Las Vegas, had retaliated by firebombing my car. I don't feel intimidated at all. In fact I am mad and more determined than ever to help end energy invention suppression.

Adam Trombly (Interview): The Truth about Zero Point Technology

(Originally published in Spirit of Ma'at: "Free Energy & Alternative Energy - Part I" — Vol 2 February 2002. For the print version see <http://www.spiritofmaat.com/archive/feb2/prns/trombly.htm>.)

The Truth About ZP Technology: A Wake-Up Call to the American People – An interview with Adam Trombly by Celeste Adams

Adam Trombly is one of the top scientists in the world in the development and creation of zero point energy technology. Devices that he built are working today in other parts of the world. And yet, instead of using zero point energy, Adam Trombly's own house in Maui is being fitted with a bank of expensive solar panels.

Why can't Trombly use his own expertise to fuel his own home? Trombly has spent most of his professional life under one gag order or another. But he decided, he told us, "that if I was going to give an interview for this particular publication, I wasn't going to pull any punches."

If much of this seems overly negative, keep reading. Trombly wants to wake us up, and to shine a light upon things that have been kept dark. But his grounding is deeply spiritual. It's just that the Divine forces that seek to assist us cannot do so unless we call upon them. "Now, in this moment," he tells us, "we must come out and ask for help. When we can ask for help, we get it."

Adam Trombly's revelations will shock you to the depths. But it is his hope, and ours, that it will help you to awaken, or to assist you in your task of awakening others.

Trombly's ultimate vision is the "redreaming of the American Dream."

Adams: How did you become interested in free energy?

Trombly: I was raised as a scientist and I have spoken the language of science all of my life. My mother was a blood specialist, my father was a biochemist, and my sister was at one time a biophysicist.

When my father had just gotten his Ph.D. in biochemistry from Purdue University — I was a young child — he was enlisted as a biochemist, by a fellow Purdue alumnus named Frank Olsen, into a U.S. Air Force/CIA joint project. He was stationed at the biological warfare laboratory in Fort Detrick, Maryland. This was in 1952 during the Korean Conflict. He had been a highly decorated U.S. Army Air Corp officer in World War II, but the government felt that he had a skill of strategic importance to the national security.

At Fort Detrick, he and Olsen, along with a couple of other scientists, were working on a very compartmentalized project. Since he died when I was in the eighth year of this body, I knew very, very little about what this project involved. On the seventh anniversary of his death (4/3/1967) I was in my mother's attic, putting out mousetraps, when I discovered a couple of boxes that contained journals my father had kept during his time at Detrick. You weren't supposed to keep journals, but he did.

One of the things he wrote about in his journals was his exposure to alien technology that totally defied what were considered, at that time and even still to this day, the laws of physics.

He wrote a letter to Dr. Quackenbush, who was on his dissertation board at Purdue, saying that what he had seen challenged even his "most vivid imagination." This was right after he got there.

After he had been there about a year, the notes he wrote got really interesting. He specifically described various technologies which he stated plainly were of "alien origin." He described not only flying disk-shaped craft and their related energy and propulsion systems, but Extraterrestrial Biological Entities. His work was actually concerned with them.

On November 19, 1953, my father (along with Dr. Frank Olson and a couple of other colleagues) was taken by Dr. Sidney Gottlieb to a summer camp near Baltimore. While there, he and his colleagues were involuntarily given large doses of LSD in their cocktails; doses on the order of 10,000 to 15,000 micrograms. Olsen knew about the experiment, and out of concern for my father told him, "Harvey you have been given a psychoactive drug and you are beginning to feel its effects. Don't worry."

Olsen had also taken a large dose of acid, and later freaked out because he said he had, "blown the experiment." It was supposed to be a double-blind experiment for all of the participants other than Olsen. He was supposed to keep silent.

Frank Olsen continued to feel unsettled, and was rushed by CIA personnel to New York for psychiatric examination. Something terrible happened instead. Frank was bludgeoned in the head and then thrown from his hotel room window. He was murdered. This, at least, was the conclusion of forensic pathologists hired by Frank's son Eric in 1994.

My father filed an internal protest demanding an investigation of his friend's and colleague's death, and that was what ultimately triggered the events that killed him.

In January of 1954, under the illusion that he was being immunized from a new retroviral biological warfare agent, he was injected instead with a live virus that he had discovered during his research. He became extremely ill. In his notes, he indicated that he immediately knew. "They killed Frank," he said, "and now they have killed me. The difference is that I will die slowly, very slowly."

He died in 1960, from a form of lymphoma as eleven government labs did morphological workups of his cells.

When I discovered that his death had not been an accident of nature, I was heartbroken. I despaired of life. I sat with a knife a quarter inch into my chest, with blood already trickling down, begging whoever was present at Infinity to reveal the truth of existence.

And in the next moment, I suddenly had no doubt of God or, if you prefer, the Buddha Nature, and I saw things with great clarity.

Adams: Do you believe that we're in denial about the involvement of aliens in the affairs of this planet?

Trombly: The American public has been lied to for so long, they wouldn't be able to recognize the truth if Jesus told them personally.

It's very difficult for the American public to know what is going on. In many ways, we are a nation in denial, and all too often a nation of alcoholics and drug addicts. We are in incredible mass denial.

People see what are referred to as flying saucers and UFOs. Sometimes they are not saucers but triangles. Sometimes they're small, and sometimes they're huge and look like buildings.

It doesn't matter how many people in remote places or in cities see them, or photograph or videotape them. The perceptions are simply shut out.

There are amazing mind-control projects going on. People literally cannot maintain their attention span. More than once I have stood and watched crafts 100 or 200 feet over my head and had people say things like, "Well that's not an airplane," or "Oh, my God, are we actually seeing this?" "Is that real?"

But by the next day, the whole chemistry of denial has set in and those same people say, "Wow, that was a strange airplane, it was going really slow, or really fast, and how did it make that right turn?"

This is what got me started in free energy technology — though I hate the term free energy, because it's anything but free. Many have paid dearly for its advent. I don't even know what term I like at this point. I use the term Zero Point Fluctuation Technology — ZP Technology.

I used to have a company called Zero Point Technology. As soon as you put something like that on your shingle, you discover just how unacceptable this concept is to those whose growth stopped so long ago.

People are being bombarded with subliminal messages that tell them that aliens don't exist. Even The "X-Files," which is a joke (thank God they're canceling it), was originally intended, by Chris Carter, to be something more than just random amusement. It was intended to be groundbreaking. But there's government interference. And this is a huge subject. People don't understand that the "other U.S. government" has had contact for decades with cultures that aren't from this planet.

We're like the aboriginal people of New Zealand, or Papua, New Guinea, or any other remote tribe. When they see an airplane, they think that it is a God — or they at least, they used to. Of course, now they think that it's just people who are more primitive than they are, but who have technology.

We are the same way with "alien" cultures. We are the same way with really clean and advanced electrical technologies that could begin to help us understand just how wonderful and abundant Being — simply being — is.

When I got involved in ZP in 1979, I was warned by Buckminster Fuller that if we were successful there'd be hell to pay. If we were actually successful, then it could develop into a real nightmare, because the humans we're dealing with are a species that has been kept in the dark. We've been treated like mushrooms (which are kept in the dark and fed a lot of feces -- there's no nice way of putting this).

The extremes to which these people are willing to go to make your life miserable are phenomenal. They go out of their way to torment those who challenge their utter mediocrity.

Then there are certain people who hang around in the so-called free energy field, who speak at conferences and who have never discovered, engineered, or invented anything in their entire lives that is worthy of note. What they have done is mediocre at best. I won't name them, but they just haven't produced. These are the people who say, "No one has ever bothered me."

These are the same people who — behind my back and behind the backs of those who have actually produced functional technologies — say, "Well I've never seen anything that he's produced."

Adams: Can you tell us more about this alien agenda?

Trombly: I know that there's an alien agenda because my father wrote this in his journals. He said he had discovered that the U.S. government had become involved in its implementation. He went further to say that this alien agenda, in his opinion, was contrary to the good of the human species and the planet.

He believed that a sector of the military/industrial complex was involved in a program, basically, to transform our atmosphere, which is benign to our species and other Earth species, into one that is greatly reduced in terms of its oxygen content.

So this is a force which doesn't have good intentions for us. It is a force that would gladly exterminate us. And yet human beings act as agents for this force. The "human" species is exterminating itself, by its own hands.

My father spoke of alien agendas in his most secret thoughts. This was not something he spoke of in public. He would never have given this interview, I'll tell you that much.

Adams: What species is this alien force?

Trombly: I can't say, but I can say that the species that are trying to harm us are a tiny minority of a vast host of alien species. My father knew of a couple. It wasn't just one, even back then. This sounds very far fetched — I know it sounds nuts. But I decided if I was going to give an interview for this particular publication, I wasn't going to pull any punches.

Adams: Many of the people who read this will share your belief system.

Trombly: Well, this is not about a belief system. I don't like belief systems! This is about reality! We are the ones who are collectively destroying the womb of the Earth in which our species gestates, in which we evolve.

There are real terrorists in Washington, and even, I dare say, in the White House. (See <http://www.nogw.com/shadow.html>.) And we are very rapidly approaching the time when that statement will be considered criminal. The incident we call 9-11 was a mockery. Now, every time someone dials 911 they'll think of the evil demon Osama bin Laden who in fact is someone we helped to create.

Alkhaida was largely financed by the U.S. government. We gave the Taliban 128 million dollars last year to suppress the growth of opium in Afghanistan. Where do you think that money came from? Where do you think it went?

Everyone thinks the 9-11 was caused by Osama bin Laden and his cronies. There's no doubt that some of his money comes from Saudi Arabia, but the fact is that the U.S. government is the primary source of funding for the Taliban. Why? Because Dick Cheney and his cohorts want to build an oil pipeline through Afghanistan.

Adams: What has happened to the free-energy technologies that you've produced?

Trombly: Every single technology that I have either invented or co-produced is no longer in my possession. There's one in Arizona that has supposedly become a national security issue.

A former colleague of mine once went off on his own with a design that he and I had come up with. He built a device that was very successful — and is now in a can, and he is a shell of his former self.

Forget about whatever technologies I have had a hand in reducing to practice. We have heard from very credible sources that these are nothing compared to the technologies already being produced by certain prime contractors right here in the United States.

Why is it a national security issue? Why is a generator that generates several times more output than input a security issue? Why is it that the American people cannot enjoy what their tax dollars are paying for? Why is it that we have a government that is willing to deny the American people access to the very technologies they themselves are secretly producing?

It's not a joke. Our government has produced technologies, with our tax dollars, that could immediately begin to reverse the damage done by the irresponsible use of fossil fuels, and they are not allowed to be used.

They continue to pollute this atmosphere, and they continue to reduce the amount of metabolically available oxygen. Who could possibly benefit from that? What species do you know of that is actually better off today than, say, fifty years ago?

What is it that we do when we burn these fuels? We make fire. What is fire? Fire is a rapid oxidation process that releases heat. The real destroyers of the equatorial rain forest are forest fires, because of the incredibly poor husbandry. There's nothing good you can say about what's being done to this planet!

There are far too many people in the U.S. government and other national governments who are acting in a way that is completely moronic and self-destructive. It is not a human agenda! This is what I'm trying to get you to see. There is this whole other thing happening.

We are exploited by a corporate structure — by the "military-industrial complex" Dwight Eisenhower warned us against in his farewell address to the nation. Eisenhower got the term "military-industrial complex" from Mussolini, who was describing Fascism. These are words you don't want to use in our society.

At Project Earth we get mail from all over the world, and the one word that keeps coming up since our last so-called presidential election — about that debacle, that tragedy — is the word "coup." From the perspective of the vast majority of the human species, it was a coup. They say this in India, Japan, South Korea, France, Holland, Spain — everywhere. In spite of the fact that we never posted an article on our website that said or even suggested that we had a coup, people write to us and say, "How come the American people don't realize that they just had a coup?"

Then, following on that coup, we have 9-11. Everybody is terrified, but people don't want to talk the way I'm talking now. They think it's self-destructive.

I tell you truly, it is our collective silence that is truly destructive.

The United States of America is a sacred idea. It is a sacred thought-form. What was America to the people who risked and frequently lost their lives to create it? It was the New Jerusalem. The spiritual foundation of the United States of America is an absolute necessity of our spiritual dimension. It was founded on the basis of the absolute need of the human spirit for freedom.

But freedom brings with it great responsibility and demands great intelligence.

We do not want to live in hell, but we are creating hell for ourselves. We are tormenting each other and ourselves. We're doing these things as if we have no choice. We are truly brainwashed.

The real ultimate cult that's going on in America is this one of jingoistic, flag-waving, unquestioning patriotism. We can get ourselves all hyped up on Zoloft, and that still doesn't change the fact that we as a nation have lost an incredible amount of prestige and trust because of what happened in 2000.

No matter how much money we put into the military budget, we will not be able to restore that trust in our own people or in the rest of the world until, through grace or the incarnation of the Divine Process, our democracy is resurrected from its present contrived state. It is a travesty.

When Dick Cheney refuses to turn over documents to investigators, he gives comfort to our enemies. Truly dangerous and deranged people in truly difficult countries like Pakistan cite the actions of our corrupt public officials as justification for their actions.

If we say to the world that we represent Freedom and Democracy, then by God we have an obligation to be Free and Democratic.

In the meantime, the world laughs, because perfectly capable intelligence officers in the United States are oppressed for the sake of short-term political agendas.

The Central Intelligence Agency attempted to warn the White House before September 11. The entire affair was handled with what can only be called incompetence. While three-letter agencies spent our tax dollars listening to my calls, true terrorists were going to flight. And in spite of over an 18-minute warning crash, a second full-size passenger jet went into the World Trade Center.

Even so, we are all supposed to fall into line and cheer.

Once, in 1986, I was introduced to a man in Toronto, Canada, who turned out to be a major Soviet technology spy. When he offered me a lot of money and a lot of benefits if I would turn over mechanical drawings for an electrical generating technology I had co-invented, I told that agent to go screw himself. I told him I was under a gag order, and that I would not violate that order.

He responded by saying, "What loyalty do you owe to your country? They have done nothing to help you or your work. If you cooperate with us we will appreciate you and take good care of you and your family. Three hundred million people will benefit from your technology. Who cares if a shaft is made in Leningrad or if assembly occurs near Moscow?"

Once again, I told him to go screw himself, to go back to the totalitarian hell that he came from — and then I got the hell out of his office.

In September of 1986, I turned this man in to the FBI — and as a consequence, I ended up under investigation myself!

In February of 1987, the counter-intelligence unit of the FBI contacted me. During my second so-called "interview," one of the special agents who interviewed me was Robert Hanson, now known as a famous spy for the former Soviet Union.

Hanson interviewed me about whether or not I was a spy. But he knew I wasn't a spy, because he was!

It's not just the U.S. government that's suppressing all this stuff, it's the whole theater of this species. The "human" species has rarely demonstrated qualities that say that it should be maintained or can be sustained.

This species has never acted in a way that is consistently to its own benefit. For thousands of years, this species has acted in a manner that can only be described as both sadistic and masochistic, and on a planetary scale. It has not acted intelligently.

At the same time, there is no decision to change, because the vast majority of the human species don't even realize that we have a choice to do that. They don't realize that we have the choice live intelligently. They don't even know or what that would entail.

My protests to the "powers above" are consistently related to this central fact: "I know there's a choice, you know there's a choice, but the general population on this planet has no clue that there's a choice. We can choose to live in a completely abundant and pollution-free environment. We can make that choice and have more abundance, and not less abundance. We can stop spending money for fuel. The capital expenditure for fuel could be completely eliminated. That would free up trillions of dollars annually, globally, from the world budget, from the planetary budget."

If you want to know why I got involved in this technology, it's because we have a way to generate almost boundless levels of electrical power without any pollution or fuel, without even the need for solar panels or wind power.

It's ridiculous that I am installing solar panels in my home, when I have spent the last 23 years of my life in the field of ZP Fluctuation Technology research and development and have one more than one occasion successfully demonstrated it along with colleagues who have also learned the same hard lessons that I have.

Adams: Can we still restore this planet?

Trombly: We can if we act with great clarity and great speed. No obstacle could stand in our path.

We could even reclaim the Sahara Desert. It didn't used to be a desert. It was destroyed by people who cut down the forest and overgrazed the grasslands that were once there. Now the same thing is happening in Brazil, Indonesia, China and South East Asia.

These forests and grasslands are like your skin. What does the skin do? It keeps us from becoming dehydrated. When a person gets third-degree burns, one of the leading causes of death is dehydration. The same thing is true of the forests and grasslands.

It's about maintaining that tissue and understanding that it is very vulnerable. These membranes are being taken away.

We can also reclaim the desert that is forming in the northeastern corner of Brazil, where there was rainforest a hundred years ago. The Brazilian desert exists because the Brazilian people won't stop cutting down their own trees. I say this very bluntly. If the Brazilian people want to demonstrate that they have some intelligence, then they'll stop cutting down the rainforest, which is the equatorial life support of our planet.

If the United Nations and if the American government want to demonstrate their intelligence, then they will suggest that we should give credits to these countries for their oxygen production.

We can reclaim the deserts by these new technologies, by taking the water out of the oceans and using it on the desert.

Where you run into the logjam, over and over with all these issues, is the question of energy.

How can we heal the ozone layer? It's going to take a tremendous amount of energy to do that. We have to replenish the oxygen that's not getting into the stratosphere.

One of the fundamental points that I try to make is about chlorine. It is a molecular demon once it gets into the ozone layer. One chlorine ion can interfere with the production of 100,000 molecules of ozone. So we have to eliminate as much free chlorine and bromine as possible.

But even if we entirely eliminated chlorine and bromine production, that would still not be enough to heal the stratospheric ozone layer.

Another significant cause of ozone depletion, one that is often overlooked, is the reduction in the amount of oxygen that should be transported into the stratosphere over the equatorial rainforests. Project Earth has been trying to educate people to this fact since the mid-eighties. The oxygen source has literally been cut off by deforestation. But we can heal that by reintroducing a tremendous amount of oxygen up there, and replanting the forest down here, on Earth.

It will take energy. Lots of it.

Adams: Can you describe how your life has been endangered because of your perspectives on free energy?

Trombly: If I had described my life to you since 1980, it would be a long, long story, and it would sound like a bad spy novel.

I've had a number of attempts on my life through really serious poisonings. My wife has had to revive me and give me CPR.

So we've had a whole nightmare component to our life. But we don't live in a nightmare at all. It's quite the opposite.

However, I must say that it has been almost unimaginable at times.

Once, in 1988, I was visited by a couple of scientists at my home in Colorado. One of them was Bob Dratch, a man who has done a lot of work in creating microwave detection equipment, which is widely used by the Department of Defense.

Basically, I was standing in my office, which was a large room, 27 feet long, and Bob Dratch was shaking change in his pocket, to demonstrate that his very sensitive microwave detector could pick up the signal this jingling generated. The signal would appear on the meter and the printout.

I pointed the horn of the device at Dratch to measure the effect. And then, as I pointed the horn away, I kept my finger on the trigger and happened to point it out the window of my office. To our surprise, the alarm went off on the machine! The red light went on, and the meter peaked.

My office was being microwaved!

I walked into my back yard and found the place where the signals were being broadcast. It was right behind my house, in a little forest, right next to an engineering company that is well known for making satellite antennas.

I clipped the cable to the antenna that was broadcasting microwaves at my house, and I called the FCC in Denver. I said told them that this was illegal, and I wanted it stopped now. I said, "Stop microwaving me." I already had cancer.

Within three weeks, this engineering company was totally gone. I assume they themselves had something to do with the broadcast, or they wouldn't have left so suddenly.

So dozens of people had to relocate to Kansas, or where ever.

But why were they trying to kill this body? We are perplexed at times by the strange modus operandi of this group.

The world is not going around very well right now, because people aren't loving. When people love, they become geniuses. Intelligence isn't about thinking, it's about feeling. I don't care how many times the force of darkness, which resists love, has attacked you and made you feel separate.

I don't care how difficult anyone's life has been. I guarantee you, I can match it. But suffering is finite, it's limited, it's not eternal. You can transcend suffering through love.

The resurrection we are called to is our resurrection. Once Jesus stood in front of Lazarus' tomb, and commanded, "Lazarus, come out." And we are told that Lazarus came out.

That is similar to what is happening right now. Surrounding this planet, there is a gathering which is inviting the human species into a new dimension. They are saying, "Lazarus come out, come out of your subjective tomb and out of your corruption. Come out of your doubt of God and out of your doubt of Love. In the midst of Infinity and Eternity, We command you."

Now, in this moment, we must come out and ask for help. When we can ask for help, we get it.

People don't understand that you become realized by incarnating love. We live only as expressions of love, in eternity. The only thing that is eternal is Love. Love as the presence of consciousness is eternal and infinite.

Time and space are subsets of eternity and infinity. Space and time are subjective states, and they have nothing to do with limiting the ultimate reality of consciousness, not even a little bit. They have to do with the gnarled subjective states of the contracted world.

Scientists talk about the accelerating expansion of the universe, but it's not that, it's the unremitting *transformation* of the universe that's happening, the inescapable transformation of the universe.

You don't have a choice about it this time. It isn't the same as it was two thousand years ago. We are in the midst of the time of the resurrection. It involves you and me and everyone on this planet, I don't care who they are.

There will be miracles everywhere. The most powerful thing is love. The whole astrophysical community is now acknowledging this power, but they call it the "dark energy." They give it this Darth Vader quality, because they don't know how to relate to the Light. It is the contraction of form and the denial of the Infinite Divine that causes the appearance of darkness.

Adams: How long has there been a conspiracy to prevent the development of free energy?

Well, if you are referring to the technological side of things, I guess you could say it started with Nikola Tesla. (Although the crucifixion was really an attempt to stop Free energy as well.)

Nikola Tesla was given the vision of infinite electrical power, without fuel, in the 1880s. He demonstrated it in 1886 and 1889, and then throughout the 1890s. He tried to give this gift, but the fossil fuel boys decided he couldn't give it. The fossil fuel boys decided that maybe they could make use of him, so they didn't kill him right away. They killed Tesla in 1943.

One of the detectives approached me in 1981, at a conference. This man told me that Tesla had been murdered. So I guess you could say that it all began right there. When I was a kid in school, nobody knew about Tesla. Tesla was the father of alternating current electricity. Tesla said he was inspired by aliens, beings from other dimensions. He was anathematized because he refused to kowtow; he refused to attend the same temple that the others worshipped in.

Adams: How can we make free energy available to the planet?

Trombly: There is no such thing as free energy without enlightenment and liberation. The technologies point to free energy. We are the technology. We are the free energy.

Great yogis like Sri Babaji demonstrate this. Yogananda talked about him. He was the physical demonstration of free energy. He was the physical demonstration of what the Tibetans called the Rainbow Body. He was transparent and transfigured in God realization, the realization of the Buddha Nature.

There are alien cultures and cultures in other universes who happen to be attentive to the events on this planet because this is one of the last archetypal moments. This will not continue anymore. This entire kind of universe is obsolete and will not occur again, because it would be masochism and sadism to allow it to be perpetuated.

There's a transformation that is occurring. It is about the liberation of all the energy that has been bound up in all of these worlds that are subject to corruption. That is the real physics. This is what is really important.

In the meantime, by understanding that this is true, we can tap into a field that we call Zero Point Vacuum Fluctuation or the quantum ether, and we can generate electrical power. Electrical power exists in complete abundance, without any capital cost for fuel.

Solar technology is so very expensive. We have 108 solar panels in our two facilities on Maui and it takes up a great deal of space. I would love to have ZP Technology here, but the fact of the matter is, if I had that working right now, this place would become a target.

The other side of this story is always the same thing. Just when Light appears on this planet, the subjective forces of darkness manifest with great tenacity. This government was overthrown and nobody knows anything about it. People are silent about it.

On the cover of *Newsweek*, on September 11, was an article about the secret vote that made Bush president. The article was about a conspiracy in the Supreme Court. *Newsweek* at that time was willing to challenge the Supreme Court. The Executive Branch of the United States government was about to fall, because it was going to be exposed.

But then the planes hit the World Trade Center.

If Al Gore had been elected, I know the man well enough to know that we would have been in a different economy after four years. We would've begun to implement these technologies.

The United States government has, right now, the technology to eliminate the energy crisis. This consoling gesture that George Bush made the other day, about developing hydrogen fuel-cell technology, is just a carrot that he's dangling before the American people.

Now there are military people who have come forward and are talking about the presence of aliens and alien technology on this planet. They are even talking about the fact that we are making our own flying saucers. This Disclosure Project is extremely important for people to know about (see Secrets from the Stars elsewhere in this issue).

We could be having the greatest economic boom in the history of history. We could actually do that. The technology exists. As early as the 1970s, Henry Kissinger, George Bush, Richard Nixon — all kinds of these guys — knew about this physics. But the downside is that we are on the brink of oblivion.

Parents are paying all this money to educate their children into the lie of physics instead of the truth of physics. Meanwhile, they are taking Prozac. We have legalized the anesthetization of our species. Depression is appropriate.

Adams: What is the purpose of your organization, Project Earth.

Trombly: The original foundation of Project Earth was to reveal to the human species the actual condition of our planet. We're not being told the truth about it. For the most part, the scientific community doesn't know the truth and has been so disempowered by their so-called education that they've lost vision.

Vision is the only thing that will save us. You have to be able to see where you're going.

The agreement that I made with the Divine is one that Bucky and I talked about. We would never just illuminate the problem, we would always offer a solution. If we talked about an energy crisis, we would talk about only it in the context of the fact that there is no energy crisis.

Electrical power is already abundantly available, pollution free. We like electricity. We can power our cars and flying saucers with infinite electrical power. We could have so much fun that living on earth wouldn't be a drag, but would be really great.

Your eyes would be so open that you would walk out the door and you wouldn't see the smog in Los Angeles, but you'd see the clear, sacred air.

Project Earth is not just about communicating the problems. It's about the transformation of humanity.

(End of interview transcript)

Adam Trombly, Director of Project Earth, is an internationally acknowledged expert in the fields of physics, atmospheric dynamics, geophysics, rotating and resonating electromagnetic systems, and environmental global modeling.

Taking the advice of his friend and mentor R. Buckminster Fuller, Adam has maintained a "synergistic, global view" within a multi-disciplinary scientific background. From this perspective, Adam offers unique insights into the changes humankind has effected on our environment, and the adjustments our future requires of us.

For further information about Project Earth, please visit ProjectEarth.com.

Trombly and Celeste Adams spoke on January 21, 2002.

Adam Trombly (Speech): Climate Change Factors, Ozone Layer Crisis, and Zero Point Energy Technologies

(Transcript, slightly edited from <http://www.repp.org/discussion/green-power/200205/msg00011.html>, of Adam Trombly's speech to the 1988 International Tesla Society Symposium, Colorado Springs, Colorado. Trombly provides additional details regarding Tesla's murder by painful poisoning, likely by the U.S. Government. It is reprinted in its entirety because I believe Trombly's message concerning energy in 2007 is even more urgent and troubling. Gary Vesperman)

As this is the last speech of the conference here, I'm going to give an overview of the development of zero point theory and I'm going to try and take into account all of you have been very patient...

The basic principle which we are obviously here to address, was originally elaborated by Nikola Tesla. The sense that Nikola Tesla conveyed of existence was, if not unique, then certainly it was profoundly inspired, not so much by initial analysis but by initial vision.

We have become a rather left brain biased society, an analytically biased society. As a result of this analytical bias we tend to refute or deny the validity of intuitive jumps or intuitive leaps and insight.

Tesla was an extraordinarily prolific inventor obviously, but in addition to being a prolific inventor, he explored very thoroughly, for his time, the dimension of the psyche. And I think that perhaps too often we tend to forget that he himself claimed that the source of his inspiration was not conventional.

He saw what he built, and then he described it to a draftsman, and built it. The draftsman was his interface with substance. To consider that when he was riding in his carriage or his Pierce Arrow here in Colorado Springs, not too far from where we are right now, he would often see devices in their totality, spontaneously.... is quite remarkable. (I myself have seen descriptions with drawings of some of Tesla's complicated machines. Genuinely amazing! Gary Vesperman)

When you see something in its totality, it tends to have a different meaning than if you tried to put the pieces of the universe back together to arrive at a conclusion. Tesla insisted that he rested in the conclusion in his own psyche. I think this is very important. Tesla was not an analytical apologist; he was not somebody who made gestures to the scientific community to make himself necessarily acceptable in his time. What was acceptable was that he produced. The means by which he produced were often unacceptable, especially in the last couple of decades.

Therefore, we heard a lot about Thomas Edison, and we heard a lot in our education about just about everybody else except Nikola Tesla. The reason I'm sure this Society exists is this left a vacuum, a huge vacuum that is not merely filled by the acknowledgment of Nikola Tesla, but by the acknowledgment of the function of a human being, the function of a being not being polarized to the left hemisphere, but balanced to the two hemispheres of the brain, in other words vision coupled with analysis.

In the development of our generator, which we originally called the "Acyclic Closed Magnetic Generator," vision was implicitly necessary to arrive at our conclusions. Basically we had to work from very little information. There were very few explorers in the field, and we had to begin to consider that perhaps the way we considered reality actually is fundamentally incorrect, that fundamental cornerstones such as the law of induction, for example, that particular cornerstone was not necessarily as we believed it to be.

What stimulated me, and I've said this before, since 1980, was the recognition that certain astrophysical phenomena express energies in excess of what the apparent input is. This is a very common thing in astrophysics, whether you're talking about quasi-stellar objects, or whether you're talking about the planet Jupiter.

When we first found out that the planet Jupiter was developing a looped current between itself and the moon Io, Jupiter was called, in a paper published by a Goddard scientist at NASA, a "Homopolar generator."

They tried to rationalize that the relative motion between the moon Io and Jupiter was actually responsible for the current that we could measure by virtue of its magnetic flux tube as tested by satellite probe. But when you went through some very simple calculations, you found that was not true.

So we decided that we would look into the matter of "Homopolar" generation itself – the history, who came up with it, as Bruce DePalma and others have pointed out. Even though Michael Faraday did an experiment on December 26th, 1831, in which he co-rotated a magnet with a copper disk and measured a current output. Even though he had done that experiment, his own law of induction tended to ignore that fact.

A professor with the Royal Society in London, a professor of science history, told me that the original Faraday cage was designed not to keep electromagnetic noise out, but to keep Michael in. You see he played with a substance we call mercury, and in those days there was very little appreciation for the toxicity of mercury. And so Faraday apparently suffered from a form of dementia, which we've heard very little about because it's one of the cornerstones of the building we have been living in, in science.

We found out after we found Faraday's diary, after we found the citations of the experiments that he had done, that there was a gentleman by the name of Bruce DePalma in Santa Barbara, California, who had suggested that on the basis of the co-rotation of a magnet and a conductor, which we were at that time contemplating ourselves, it might be possible to generate more energy out from the generator than input in.

I must say that my initial response to that was probably not as skeptical as some people might be when they heard such a thing, because in the fields of astronomy and astrophysics it is not uncommon, not uncommon at all to find an object that is obviously exceeding what we "know" to be its thermonuclear, or any other form, it's exceeding the output that it could possibly have by thermonuclear means, by fusion, by fission, by anything we normally consider.

And so, because we had seen that already in space there was this planet Jupiter clearly being a demonstration of what we initially considered to be an anomaly. Clearly putting out three times as much energy as it could possibly be receiving from the sun. We decided to reduce to practice a form of generator with the intention of practical commercial use, and through various good fortunes we arrived at funding.

We actually, for this field in those days, got substantial funding. And as a result of that work, we applied for a patent in 1980 which was, as many of you know, denied by the U.S. Patent Office as being implausible to the extreme. The statement was to the effect that, "This device could not even generate electricity." It wasn't that it couldn't generate electricity in excess of input, it was that the machine couldn't generate electricity at all. The patent officer himself was, as many of us, as all of us basically were unfamiliar, he being totally unfamiliar, with the fact that you could co-rotate a magnet with a copper disc, even though we had provided him with a copy of a page from Faraday's diary. He actually suggested that the diary notes might have been something created *ex post facto*.

My initial naiveté in entering this field was rapidly destroyed.

We felt that if we could produce a practical, commercial, viable unit, then the world would be very excited indeed. And what we discovered instead was we were dealing with a profound level of inertia; inertia in a frame of reference we didn't normally consider.

Economic inertia, intellectual stasis and dogma. Certainly the explorers in this field, over time, whether it's myself, or Bruce DePalma, or Tewari or going back to Moray, Tesla, Hubble. These people all discovered this inertia. It is an astonishing thing when you first encounter it. It is irrational. It says that no, indeed the Earth is the center and everything revolves around it. And the moons around Jupiter couldn't possibly be doing that what you say.

Galileo wasn't vindicated by the Catholic Church until 1984. If we took that many centuries to acknowledge zero point vacuum fluctuation-based technologies, we will all be dead. And that's the sobering realization that I have come to over the last five years.

Buckminster Fuller was a huge influence in my life. I met him when I was sixteen years old and largely because of his influence I wasn't permanently lost in space; lost in the theoretical level of things. And therefore, when I began to encounter this resistance he said something that was very important to me. He said that every new idea, every new technology, every major breakthrough, has an inevitable period of gestation. He said you must learn to be patient. He had experienced profound resistance, as you may know, to various ideas that he had in the thirties.

I think that what we are really seeing is not the resistance or inertia imposed upon this technology, but instead a resistance to a fundamental shift in perception about the Universe itself.

We have tended to describe ourselves in discrete terms, as encapsulated beings, with rather defined boundary layers, both temporally and spatially.

We're born and we die. The boundaries of our body are the boundaries of our being. Inspiration has a difficult time entering into a closed bottle. Where would it come from? Where would it appear?

How could Nikola Tesla say he got ideas from space? He was considered a very eccentric and crazy man as a result of his statements. People point out that he always had all these napkins piled up next to his plate. But by the end of his life, people had forgotten that his vision is what is powering these lights. And if we had continued with his vision, we wouldn't have a fossil fuel economy today. And J.P. Morgan and Rockefeller and a number of other individuals would not have amassed extraordinary fortunes on the basis of that fossil fuel economy.

I think this is extremely important for us to understand because when Nikola Tesla's vision was denied, a part of our own vision was denied. Just as when Galileo's vision was denied. The fact of the matter is that as we sit or stand here, a field of energy pervades us. This even relatively conventional physicists like John Archibald Wheeler stated in a 1962 article in the Review of Modern Physics. "Energy has a mass equivalence of ten to the ninety-fourth power grams per centimeter." You just need to look in the literature. That ninety-fourth power grams per cubic centimeter represents a rather coherent state. It represents something that we could very easily call a continuum.

But because of the taboo against the idea that you might perhaps be able to get water from the well of space, or what people call "perpetual motion", there has not been a sense of any kind of practical application.

Once in a seminar, well over a decade ago, I asked a question I found was extraordinarily taboo, and I said, "Why can't we tap into this field?" It had been established in the literature in Europe by Philip Sipolan (sp?) since 1951 and 1952, that not only did the fluctuation field exist, a fluctuation field of extraordinary energy equivalence. And that the vacuum field was bias able; that it was polarizable.

The polarizability of a vacuum, fluctuation background, I believe is the essential issue, and a very simple issue indeed that we need to really consider.

David Deutch in 1982 explored briefly in a book called "General Relativity," on Einstein's centenary, which was edited by Hawking, considered very briefly the fact that not only is the vacuum polarizable in terms of density, but that an ideal theoretical situation density polarization could asymmetrically approach infinite density and asymmetrically approach negative energy density. That means that within the vacuum fluctuation itself, stress can be created. That means that the vortical dynamic that Tewari speaks of is really not that difficult to imagine, because you have fluctuation density that wishes to remain isotropic, or uniformly distributed, disrupted, polarized, in a curved manifold, and that vacuum density once polarized wants to relax from that stress back into a more isotropic state.

Anybody who studies vortical physics, fluid dynamics, plasma dynamics knows that there is no greater stress than that by which we invoke a vortical momentum. And therefore it is not hard to imagine, if we simply consider the fact that we are dealing with a medium of this extraordinary density. It is not hard to imagine or even begin to feel that just by simply biasing this field in a rotating cylinder or perhaps in an oscillating circuit, by biasing this field correctly, we can precipitate vortical momentum.

Now we may only precipitate a quasi-electron. In the vacuum fluctuation of space, their production is occurring all the time. In a bias environment however, where an electrical potential exists, that quasi-electron, instead of annihilating with its anti-particle, might indeed be distracted along the potential and find its way into what we refer to very blithely as manifestation.

It doesn't necessarily take giga-electron-volts for this to occur. And that's why Tewari, DePalma, myself and others speak of the generation of power from space.

We need to very simply and seriously consider that it's already in the literature. It isn't just in the literature of the fringe; It's in the literature now even of Physical Review since 1975. Review of Modern Physics, since 1962. And in the European literature since the 1950's. It's a remarkable thing that because of the bias against so-called "perpetual motion", or so-called, "free energy", that nobody seems to want to extrapolate what is implicitly obvious.

The atom itself can then be seen as a dynamic modification of field space. Only a dynamic modification of field space, with no quality of stasis what so ever.

Harold Putoff, in his May 15th, 1987 article in Physical Review, pointed out that in order for the hydrogen atom in its ground state not to collapse, it had to be absorbing energy from the fluctuation background. In this moment. This is not something that happened at T equals zero – before the Big Bang.

This is something happening at this moment, real time present context, now with every atom and molecule that we see configured before us. It is happening right now.

It is wonderful to have Dr. Puthoff describe this energy in terms of the Bohr atom. It is implicit that the electron orbit dissipates energy. If we consider that to be a resonant shell with no locatable density bias, then it still pertains because the atom itself, even in its ground state, resonates in space.

We have a picture, that we got when we were young, that says a thing is solid, even though particle physicists are telling us that nothing is solid, and while that's all very fascinating on Nova television, we still have a picture that persists. Can an atom, existing in certain states of polarization and stress, perhaps become a conduit drawing upon the energy of space? A transducer in a certain light.

Obviously it must be, or else it couldn't exist. The electron itself must be spontaneously appearing out of the background field. If it was not spontaneously persisting then we have to invoke the somewhat Neanderthal concept that everything had to start at a certain moment. And because we have embraced this new cosmology of the Big Bang in the last couple of decades, we have some real problems.

This is not the best forum to go into this in great detail, but I will say this - the Universe is clumpy. That's a term that is used frequently in astrophysics to describe the fact that mass is not uniformly or isotropically distributed. It is simply not. On a large-scale basis with models that have assimilated data from observatories from all over the world, especially over the last few years, we have seen that the Universe we observe is indeed clumpy. It is in fact concentrated in a way that cannot be the artifact of a Big Bang.

Now that's a bold statement. Alfven (Swiss Nobel Laureate), famous for Alfven waves, has come up with an extraordinarily beautiful description of the plasma dynamics of space. And so far, interesting to note, although he was considered to be a complete heretic when he came out with his theory, every single observation we have made from space with satellite probes, has confirmed his predictions. I think it very important that everybody here who is interested in the reality in which we adhere, become familiar with either the esoteric or the exoteric level of Alfven's work. It's just beginning to appear in the literature. I think Discover magazine had a rather prosaic presentation of it, but it was also quite good. (June '88; the "Big Bang Never Happened.")

If there was not a Big Bang, where things conveniently began with a single event, then we need to begin to consider the fact that something that has a gram equivalence of about a gram per cubic centimeter, which is our body, must be a rather insignificant modification of a field that has a potential of ten to the ninety-fourth power/grams per cubic centimeter.

This impacts the way in which we live together; it impacts the way in which we live with the Earth itself.

I had not initially planned today to show some slides from the NASA program, but because this is a cap speech at the end of the day, I feel that it might be very useful to digress for a moment and observe the rather catastrophic impact that the very concept of discrete encapsulation has had upon human existence and the Earth itself.

And I would suggest to you, after considerable study of the subject, which is now becoming accepted in the literature worldwide, that we cannot sustain the dynamic of human existence any longer unless we begin to transcend the arbitrary, subjective boundaries that we presume to be true. Whether these boundaries are about ourselves, or all phenomena of manifest existence, until we begin to move beyond this anal-retentive state, in which everything must be particularized. Everything being particularized, leaves Humpty Dumpty.

We will never be able to re-assemble existence.

As Fuller pointed out to me at an early age, “existence is already implicitly whole, we break it into parts only in our minds only.”

It is already unified whether or not we have a unified field theory or not. And as Einstein suggested at his last series of lectures at the Advanced Institute at Princeton, “perhaps we can only appreciate the unified field by entering a conscious relationship with it.”

Again, this is something that would not have been at all contrary to what Nikola Tesla proposed, and yet some people would be embarrassed to say it.

I think we need to very succinctly consider that we cannot continue to burn fossil fuels on this planet, and that we really haven't found anything to do with our nuclear waste.

And that the appearance of bona-fide third party confirmation of the generation of energy from space is a significant event in history. It's not significant because it will make a few men popular, or unpopular. It's not significant because it will somehow create a minor change in our concept of being. It's significant because it represents a dramatic shift that we desperately need to embrace.

Right now we are sitting at the edge of an unprecedented human catastrophe on this planet. A friend of mine, Sayed Sayed (sp?), at Texas A&M who has for twenty years been a climatologist, in an elegant experiment recently carried out in Antarctica, has shown clearly that if we lose between 6% and 7% more of the remaining stratospheric ozone the phytoplankton in the oceans will die.

The phytoplankton in our oceans contribute 50% of the oxygen that we enjoy on this planet. It is extremely important to point out that prior to the appearance of photosynthesizing biomass; oxygen was a trace gas which basically appeared through the natural transitions of H₂O.

We simply cannot afford to lose any more oxygen than we already have. At this moment, literally hundreds of millions of internal combustion engines are running. A six-cylinder engine, of normal displacement, consumes eight hundred thousand (800,000) cubic centimeters of oxygen per hour. This transforms the breathable oxygen into combustion by-products, an entire spectrum of combustion products.

In the last twenty years, in Africa alone, we have destroyed 64% of the biomass ground cover. In the last twenty years! This is a United Nations Environmental Program figure, confirmed by satellite and manned space flight telemetry. (Remember that Trombly gave this speech in 1988. Perhaps these gloomy figures and reports are likely to be even worse now in 2007? Gary Vesperman)

Also, in the last twenty years we have consumed 29% of the photosynthesizing ground cover in Central and South America. In the last twenty years! You cannot consume oxygen at the same time you consume the factories that metabolize carbon dioxide and return oxygen to us, and expect to have a sustainable environment. Because as oxygen tensions decrease even a few percent in the troposphere, ozone tensions decrease disproportionately. This is because there is a column of oxygen and other gases that rises from the biosphere to the troposphere and then to the stratosphere. It is on the basis of the mixture of these gases, that we have ozone in the atmosphere.

I would suggest that we can not afford to wait to demand that serious money is applied to this research, Federal money. We need this to happen desperately and we need this to happen immediately. And for those of us who feel that we can be blasé, and wait and wait and wait until somehow this becomes acceptable, (the implementation of this new kind of technology) let me just say that if we think we can wait; we're sorely deluded.

You wonder why there is a drought in Ethiopia. You hear in Time magazine that the so-called scientists can't figure out why there is a drought. Well, Ethiopia at the beginning of the century was covered by 43% forest. Ethiopia today is covered by less than 4% forest. How is the hydraulic cycle supposed to maintain itself?

This at first, this entire consideration at first, seemed to be in rather left field of the consideration of energy generation. But, as I began to explore it further and further and lectured around the world, I began to discover that most of the human race has been entirely uninformed. Some people have suggested this is rather conspiratorial. The slides you are going to see in just a minute have been available, some of them, for several years. We finally got a few of them on CNN December 25th (1987?)

I think when you see them you're going to realize why they are so significant. And as always I would like to thank Richard Underwood of NASA, now retired, for providing these images. They are in the public domain, but anyone who has tried to get photographic data from the NASA space flight program, especially during the Reagan Administration, will find that it is a very difficult thing to do. As a matter of fact, most of the infrared photography is now stored at AMES, and you can't get into the building. Even though this material is not classified, the building itself is off limits.

I would like to have the lights dimmed, and I would like to show these slides and then we can go on from there. We can discuss in more detail about this and other things.

This is the way clouds are supposed to look over the rain forest. These are healthy clouds. These clouds are appearing over the Northern Congo area and this photograph was taken in the mid-seventies from Skylab. Cumulonimbus, stratocumulus, very beautiful cloud formations and an extraordinary density of water vapor as you can see.

Next slide. This is what the ground looks like after you get rid of the forest. This picture isn't from Africa, it's from Brazil; but literally millions of hectares worldwide look like this today. You can see that the watershed to this river, which is the Sao Paulo River, has been almost totally devastated. You can see that evaporation would occur rather rapidly instead of in a moderated sense through the membrane canopy of the forest.

The next slide shows the way clouds look after you do this. By the way, this is the same coordinate almost exactly, taken from the Space Shuttle in 1984, as the slides show big billowy beautiful clouds from Skylab ten years earlier. What you see beneath this cloudbank is now desert. So the cloud building is no longer healthy. Instead of that nice kind of veil of water vapor, you see an extraordinary, Los Angeles scale, optical density. That's dust.

Dust that has been lifted and aerosolized and now remains in chronic suspension over much of the African continent. The clouds are flat. The convective, humid currents that rose from the rain forest no longer carry water vapor in significant quantities.

(At the end of the above "Charles N. Pogue: 200+ MPG Carburetor" suppression case, this writer, Gary Vesperman, mentioned that he had taken an introduction to meteorology class given by University of Wisconsin-Madison climatology professor Dr. Reid Bryson. One memorable lesson was a study Bryson had conducted of why the Harappan Empire of ancient India had failed. Due to over-grazing by sheep and goats, the Harappan Empire's land had become barren. Each drop of rain is comprised of enough water vapor coalescing around a single dust particle that it becomes heavy enough to fall.

Bryson discovered that increasing dust in the air can reach a critical point where there are so many dust nuclei per unit volume that none of the drops of water can become heavy enough to fall as rain. A feedback cycle then starts up where lack of rain causes even more dust to be stirred up into the atmosphere. More dust causes even less rain to develop.

Bryson's suggested simple solution? Stop goats and sheep from over-grazing the land so as to allow the land to re-vegetate and keep down the dust. The feedback cycle then reverses itself – causing more and more rain to fall.

Currently the American southwestern states are enduring the worst drought in many decades. Are they about to suffer the same fate as the Harappan Empire?)

There was a great effort, a joint effort of the United Nations and several other countries to seed what clouds remain to see if the hydraulic cycle could be restored. Unfortunately somebody forgot to plant anything under the seeded clouds, so the desert is now growing. The Sahara desert is now growing six miles per year and is three thousand miles across. This is significant.

Next slide please. This is to give you an idea of the scale. We are not looking at the desert floor here. We are looking at a pall of dust that stretches as far as the eye can see, to the curvature of the Earth. Twenty-five maybe twenty-eight thousand square miles here. This area all used to be called the sub-Sahara and now is moving into the Sahara. Flat clouds, no rain.

The next slide will show you conclusively that when you see breaks in the pattern, you have a deeper understanding of the optical density. This density is equivalent to a critical day in Los Angeles. This again is chronic and has serious ramifications for us on this continent. Serious ramifications.

This has happened because somebody denied vision. This has happened because when in 1906 Nikola Tesla said that fossil fuels would one day create a corruption in the entire atmosphere of the Earth, he was called eccentric. Next slide please.

South of the aridification process, in Zaire we have fires. These fires are burning out of control. They have no planes to drop chemicals on the fires. They have no fire departments. They have no money. This is a small area, only a hundred by a hundred miles. You can see where the forest that was once there has already been stripped away, and the hydraulic cycle therefore undermined.

The next picture is Angola burning. The CIA did not win the war in Angola; fire did. 13,000,000 acres burned in 1985. When NASA scientists examined this photograph, they thought that this was some sort of strange cloud until they realized it was the combination of the plumes of smoke from the fires. Just consider the area involved, and consider the fact that this is now being visited on our country.

Alaska in the last three weeks has lost 750,000 acres to fire. The Secretary of the Interior, Hodel, said, "Let Nature take its course." They saved part of Yellowstone that was close to Old Faithful, but decided that the rest of the wildlife habitat was expendable.

And this while we are spending hundreds of millions of dollars producing neutron bombs and other clean kill weapons, which can never be used and God forbid that they ever should be.

The next slide please. This is Junguoy (sp?) Bay on the coast of Madagascar, and it is not uncharacteristic of bays all over the world now. This is what happens after the deforestation and after the fires. This bay was over six hundred feet deep twenty years ago. Now you can walk across it during the dry season it is so filled with silt. This is happening now, today. It is not theoretical. We have to move now.

Next slide please. This beautiful lake was called Chad. Lake Chad was the size of Lake Erie. Lake Chad supported 1.8 million human beings in peripheral agriculture and fisheries. The next slide is Lake Chad in 1982. (In his movie, *An Inconvenient Truth*, I remember Al Gore showed possibly this very same pair of satellite photos of Lake Chad in central Africa. For an alarming update on Africa's huge lakes, see http://news.yahoo.com/s/ap/20061209/ap_on_sc/warmer_world_african_lakes. Gary Vesperman)

It's the hole that was left when the hydrological cycle was destroyed in Africa. This is not a cyclical drought, and it is not a drought that will be only visited on Africa. The water vapor distribution on this planet is being changed dramatically by the destruction of biomass.

The water vapor budget on this planet is being changed dramatically because we have failed to feel beyond our own little subjective event horizons. We tend to exist like psychic black holes. We take a lot and give too little.

A few years ago I pointed out at the fourth International conference on Atmospheric that the drought of 1986 and 1988 would occur. Now they have occurred. They are not going to cease because we don't want them to occur. They are not going to cease until we realize that we need to mobilize every democracy on this planet, and hopefully this will someday soon include the Soviet Union, to implement this new class of technologies.

We can address these issues by planting forests and by using energy generated by these new technologies. Whether you call it an “N” machine or something else, I’m sure these technologies will continue to evolve.

By utilizing this energy which we can get directly from the “vacuum” of space, we can desalinate and re-irrigate. The Israelis if nothing else have shown us that you can resurrect a desert. We are going to need to resurrect a planet. We cannot posture ourselves and say that national security comes before the security of the human race. It is the security of the human race in total that is now threatened.

This is the last slide. I’m only going to show eleven slides today. I think they speak for themselves. This is a veil of dust that stretches out towards the horizon across the Atlantic Ocean, reaching from the Caribbean Sea, in the lower portion, all the way to the African coast. This is not a phenomenon that occurred in one year. This is a phenomenon that occurs every year – between eight and nine million square kilometers this year. (8-9,000,000 square miles)

This dust acts as condensation nuclei for water vapor causing precipitation in the south, over water, in Honduras, in Nicaragua, while the Midwest and Southeast are parched.

We are changing the way things work, and we haven’t even begun to inspect the ramifications. It isn’t just the “Greenhouse Effect”; it’s a much more complex issue.

Only by stepping over the threshold into a more synergistic view, which is not just a kind of convenient term bandied about for the sake of the “New Age,” but only by entering into a more synergistic view which acknowledges the inherent coherence of phenomena, can we begin to comprehend the fact that when you do something here it affects something over there. In quantum geometrodynamics, actually in a number of other studies, what we call action at a distance, in a coherent field, distance is not presumed.

I hope that this all has said something. Fuller’s suggestion was that Project Earth should either determine whether there was a reason why we had to implement these technologies, or whether it was no big deal.

“Can we last longer? – I need to get my next grant from DuPont.” To produce more chlorofluorocarbons? “Yes, it does seem that it might have that effect, but if I say that in the literature than I am defying my contract.”

Scientific integrity, which used to be something that characterized science, is something that is sadly lacking in too much of the scientific community. Too many have become grant whores and parasitic on society, posturing themselves as authorities, condemned to the inertia of the past and past conceptualizations of reality.

Recently I was lecturing at John Hopkins, which is in itself sort of a miracle, about zero point physics and while we were considering zero point physics somebody said, “Well this is all well and good that Mister Tewari did this over in India, and that it’s all well and good that you’ve done this in the United States. DePalma, it’s all well and good to demonstrate it, but what about the United States Government?”

“I mean wouldn’t the United States Government be doing something?” the child asked. A sixty-two year old child, a very nice man actually. And I said all you need to do is get a hold of the 1986 fiscal year “Request for Proposals” published by the Department of Defense.

Look on page 193 of that document, and you will see something very interesting. In AF section, which is Air Force section 86-77 subsection 6, you will see that a government which denies the reality of zero point technologies is requesting “further research into esoteric energies heretofore unknown including the zero point dynamic fluctuations of Space.” ... for propulsion. But it doesn’t exist you see...

But we want you to research it if you have a bona fide organization that happens to be a prime contractor with triple security clearance. This for propulsion for the Air Force when the entire human race is threatened. Now there is a certain kind of insanity somewhere implicit in that. It’s in the literature; you can order a copy from Project Earth, or call the Pentagon. This is not a classified document. I won’t get in trouble for saying anything. This is actually a program that is ongoing, right now, today, within the government enclave. Call Los Alamos and ask a question about it, and you might get a very long silence on the other end. Call Lawrence Livermore Laboratories and their Aberdeen Testing grounds. The same phenomenon will probably occur.

A significant amount of funding is going to make sure that this irrelevant, mythical phenomena is applied to weapons systems and weapons-carrying systems. Something is very wrong about that. I don't believe that anybody sitting in this room would say that it's in the best interest of our people, or any people of the world, for this kind of technology to be applied outside the realm of civilian application at such a time.

Six to seven percent further depletion in stratospheric ozone, and we are seeing depletion rate trends that indicate that this level of loss will occur very easily within the next two decades. Those of us who have really considered this, and as you consider it more and more I'm sure you'll realize that two decades pass very quickly, for all of us. It doesn't give us time, as I said before for subjectivity.

This field has survived, but not on the basis of being acceptable in the literature. Tewari has tried to publish. I know the IEEE (International Electrical and Electronic Engineers) is involved in this conference, but Tewari tried to publish in IEEE and was summarily rejected. Many of us have tried to publish and have been rejected. The reason Tewari even bothered to try to duplicate this "Acyclic Closed Magnetic Generator," after years of correspondence with DePalma, was because he was able to convince some mechanical engineers that it had some engineering method. You see they actually did material stress analysis.

We also analyzed. We used beryllium copper for a reason. It's just engineering. There are a lot of you in this room who are perfectly capable of doing it. There was nothing magical. We just operated on a different presumption. We said, "Maybe this experiment will work." And if it doesn't work, well then it's like 88% of the rest of them. If it does work, heh, then there is another level of confirmation.

Robert Kinchloe, Professor Emeritus of Stanford University, went to visit the, how can we call it, encumbered "Sunburst Machine". This machine was originally developed by DePalma, Richardson and Bernard at Sunburst Farms, Santa Barbara, California. Dr. Kinchloe just out of curiosity of his own mind, decided that he would just see if there was something about it that was unusual. He presented a paper on it, and I understand that it only got to Bruce through somebody else. But that's not unusual; my own attorney has directed my attention to an article I never knew existed. It's funny about that.

It's funny when representatives from our own Government look me straight in the eye and say, "Yes we know this is real, but we wonder why you would disclose it to foreign nations?"

I said, "I didn't disclose it to foreign nations. It was in an international publication in 1982, and I didn't even know about it."

I would suggest to you that it's time for us to not simply entertain a curiosity. I would suggest to you that it's time for us to enter a human process of inter-relationship, to try to attempt to reintegrate ourselves with one another and not in a floaty kind of "new age" sense necessarily at all. Just call ten people and ask them to each call ten people and tell them that we have an emergency on our hands. Demand that the people we are hiring represent us, supposedly, not the major corporations. We are hiring these people to represent US! Which one of you has the power to lobby in Washington?

We need to send a very clear message to Washington that states, "Gee, don't you think it's silly to be talking about Star Wars? We're only talking about Global Genocide." This without doing anything except for what we are doing right now. We don't have to drop a bomb or fight a war. Just continue exactly as we are now. All we have to do is remain in this collective state of inertia. And I don't personally believe we are going to do that. I don't believe that human beings are not going to rise to this occasion. I don't believe it for a second.

But, I do believe we need first to understand what we are confronted with. And then we need to understand that we can do something about it. We need to act, and we need to act like somebody who is being chased by a hot poker, or someone who cares.

Whichever your response is, Act!

Ten people calling ten people calling ten people, covers the country in a week. It's called "Exponential Networking." I didn't come up with the idea; Fuller did. Call ten people. Ask them to call ten people and find out what happens. It's the equivalence of an electron avalanche in human society. It works.

So, I wanted to try to give a wrap-up and I wanted to cite the fact that we wouldn't be here if it weren't for somebody's vision. Yes, their vision was applied. Yes, their vision, his vision, Nikola Tesla's vision was brought into life. Otherwise he would have been a mere mystic, wouldn't he?

Yes, we do have to sit down with our Macintoshes, or sit with our Hewlett Packard 41C calculators. We had a lot of money (for this field). A total between the two phases of the experiment of about \$200,000. And now I'm finally happy to say it looks like it's going to be produced, or at least this one is going to be produced. It looks like DePalma is also moving into that modality.

We are certainly hoping that more people will come out of the woodworks and say, "Hey, well I've had this thing for the last thirty years. But I was told that if I brought it out into the public when I was working at Los Alamos twenty years ago, they would basically permit character assassination to ensue."

It's hard to believe in some ways, and I don't want to paint a black picture, but I think we have to see the end of times when the New York Times calls a National Center of Atmospheric Research scientist to ask, "How come everyone in the world says that the Reagen report on acid rain is a lie?" And the man answers, "You don't understand the kind of pressure we're under here. People's careers are in jeopardy." This when all our lives are at stake.

So I would like to open the floor to questions....

".....I raised a question in another seminar about the oxygen depletion, and the speaker told me that even if we were to kill all the forests at once it would take a very long time for the oxygen to dissipate out of the atmosphere....

We are talking about a change in the mixture of gases, okay? There are people who say that even if you combusted all the carbon on the Earth, biomass and post-biomass, the oil reserves, everything, there would still 75% of the oxygen in the atmosphere. Unfortunately, they fail to take certain things into account. For example:

Today we sit, and if you knew what we went through to get this acknowledged in the world press (And it would take me an hour to tell you), but we now have it publicly acknowledged by NASA that we have between a 2.3% and 6.6% depletion in world wide atmospheric ozone depending on latitude and time of year. This not taking into account the rather large depression over Antarctica.

When this level of ozone depletion occurs, the level of ultra-violet influx increases the probability of photosynthesis in the lower atmosphere. So, the O_2 is preferentially converted into H_2O_3 for example. This would normally only appear in great quantities after a lightning storm in the past.

We have a lot of H_2O_3 in the atmosphere. We have a lot of O_3 in the troposphere, which until very recently was being attributed to internal combustion. But O_3 was appearing in large quantities in rural areas where there was very little internal combustion, relatively speaking. It became an embarrassment when the Department of Agriculture had to admit that 2.6 billion dollars worth of crops were being destroyed per year by ozone alone.

So the photosynthetic reaction that is occurring as the result of increased ultra-violet influx must be taken into account if we are going to begin to understand what is going to be sustainable in terms of oxygen tensions. It is the mixture of gases that rise from the biosphere through the troposphere and into the stratosphere that determines the tension of ozone, O_3 .

The Nimbus satellite, by the way which NASA has conveniently said is out of calibration even though it was in fine calibration last September, and in almost perfect agreement with the instrumentation on the ground in Antarctica. Which by the way at the center of the Antarctic hole, six miles up, we had 96% depletion levels last year (1987). The jumpsuits worn by some of my friends from the Center for Atmospheric Research, please understand there are a lot of good people there, people there I respect a lot, their nylon jumpsuits were actually degraded by ultra-violet exposure in just one flight. Several people had serious eye injuries.

Now anybody who is going to suggest that this type of influx is not going to effect the species of molecules that we have in the atmosphere, and the mixture of those gases, is denying an extremely important fact. So whereas I'm not suggesting we're all going to die of anoxia, what's going to happen when the phytoplankton in the oceans die? They are the basis of the entire oceanic food chain. If you are not familiar with them, they are the little critters that actually made all this possible. This conference would not be occurring today without their sponsorship.

I think we need to realize that we are sponsored by living things, and we need to support them so they can support us. Does that answer your question?

Yes, thanks.

It occurs to me that the resurrection of Nikola Tesla's vision and other people who have had the vision of the quantum ether, may yet be called on for a second offering. I think it's a good time to invest in this second offering of free energy. We did not invest the last time and now we are paying for it. I don't want to see anybody suffer. What will it be like in ten years, when already the American Cancer Society says that even with sunscreen protection ratings of 15 SPF, direct sun exposure should be limited to an hour?

I hope the Tesla Society will prosper, and move into a new age of manufacturing, implementation and further development. I want what has happened so far to be totally obsolete in ten years. One kilowatt in your pocket, why not?

There is absolutely no reason why not. You've got ten to the ninety-fourth power, grams per cubic centimeter energy equivalent field. It's not in a great big area, but it's a lot of energy. If we can just scrape the surface, ever so slightly, we would never have to worry about it again.

That's what Nikola Tesla was scheduled to tell Franklin Delano Roosevelt back in 1943. In 1943 he had proposed to FDR that perhaps we should look carefully at the fact that we can get all the energy we need from any space we happen to be in.

He didn't show up for his meeting with the president. He was found dead in his apartment, "Natural causes."

There is some suspicion that maybe his visionary paranoia of poisoning was not exactly paranoia, ... but premonition.

I have never mentioned this before, but when I spoke at the 1981 Conference at the University of Toronto, a detective, an older gentleman from New York, with a heavy New York accent, approached me afterwards and said that he was a detective at the time when Tesla had been found dead, and said he was involved with the investigation.

He said, for national security reasons, that nobody was to know that the coroner's report had indicated he had been poisoned.

I have never personally read the coroner's report, but the man was about the right age. He showed me a badge, and I had no reason to doubt this man who had come all the way up to Toronto from New York, just to tell somebody after all those years.

The coroner's report did say he had been poisoned. Now it turns out that the only medium to my knowledge it actually cites that Tesla had been poisoned is the Yugoslavian film on Nikola Tesla called, "The Secret of Nikola Tesla." So everybody can watch again the introduction, because they say it right at the beginning. And they also say perhaps that he was killed by the Nazis.

I did not really want to mention all this, but science cannot exist in an environment where science is not allowed to grow.

Any other questions? Well, you have all been a tremendously patient group. Thank you for your attention.

Thank you Adam.

Em-Tech Technologies: Advanced Solar Photo-Voltaic Crystal Lattice Cells

In 1989, during another flight of the Space Shuttle Atlantis, the U.S. military photographed a newly launched Soviet communications satellite in geo-synchronous orbit above Moscow. There were several things about the new Soviet satellite which were unusual. First, spectroscopic investigation of the signature of the satellite revealed the familiar tell-tale presence of nuclear material located in the aft section of the satellite. It was presumed (incorrectly, it later turned out) that this signature confirmed that the satellite was, indeed, powered by a small on-board thermo-nuclear reactor.

What did not make sense, though, was the fact that the power requirements, which American military analysts believed were needed to support the variety of functions being performed by the Soviet satellite, were believed to consume considerably more power than could possibly be produced by a nuclear reactor of the kind and size believed to be installed and operating on the satellite.

Further, the photographs revealed the presence of a peculiar kind of parabolic dish suspended from the nose of the satellite. It was shaped like the much larger satellite receiving dishes commonly used by television viewers in the West. The peculiar thing about this dish was that it was very small, less than three feet in diameter, and had a very flat parabolic surface. This meant that it did not focus the signals they presumed it received onto any boom-mounted collector or decoder device. No such device was mounted on or attached to the dish.

Finally, it appeared to be constructed of a material or combination of materials which was unknown at the time, but which appeared to be highly reflective, almost like a mirror. Interestingly enough, the dish was also apparently transparent to interstellar signals which originated behind it. For years it was believed that the strange parabolic device was a special kind of high-gain directional antenna. That assumption later proved to be totally false.

In fact, information recently supplied by the I.N. Frantsevich Institute for Problems of Materials Science (IPMS), Kiev, Ukraine, to support several of its patent applications confirms that the dish was constructed of the same crystalline lattice material which is used to construct the interior of exceptional energy storage devices, but built with some very special features. The purpose of the device was to convert sunlight and other ambient wavelengths of energy into ion flow or electrical current, in sufficient amounts to maintain the electronic and other operational functions of the satellite. In the West we refer to devices which act this way as photo-voltaic devices or solar cells. The device which looked like a high-gain antenna dish was certainly a solar cell, but it was much more than that.

The quantum physics and the new technologies which made it possible to produce the crystalline lattice structure of the energy storage devices also made it possible to produce a similar crystalline structure which was capable of simultaneously converting wavelengths of widely varying characteristics into ionic flow or electrical current. The strategy employed by this revolutionary new material worked across almost the entire spectrum of known wave lengths, from far out in the realm of extra-low frequency long wave lengths propagated by the original Big Bang all the way up through the visible light spectrum and beyond, into X-rays and ultra-high frequency, ultra-short wavelength wave forms associated with pulsars, quasars and quantum singularities.

The quantum mechanics which describe the characteristics of the crystalline lattice structure recognize two distinct features of wave/particle propagation which are nowhere integrated in the linear quantum mechanics or solar cell technologies of the West. First, the characteristic of crystals which differentiates them from all other known material substances is that they resonate (or oscillate, to be more precise) at both primary and harmonic frequencies.

A crystal-based tuning fork which resonates at “A” natural will also resonate in sympathy with any harmonic of “A” natural propagated across the entire wave spectrum if the wave form is detectable and of sufficient intensity to activate the crystalline structure of the tuning fork.

The crystalline lattice of the Soviet solar cell was deliberately designed and constructed to resonate at all the harmonic frequencies of the entire wave length spectrum, as defined by six discrete bands which embrace all known wavelengths. These bands are each a harmonic of the next, and all of them cause excitation (oscillation) of the crystalline lattice structure at the same time.

This phenomenon reflects a new feature of quantum mechanics, instantaneous simultaneity of crystalline oscillation regardless of the distance of separation. The potential of this phenomenon in future applications is truly awesome. Properly harnessed, for example, this property of crystal structures as defined by the IPMS version of quantum mechanics could make it possible to communicate over vast distances with no time lag. The oscillation characteristics demonstrated by these structures operate outside the normal context of space-time.

This writer, Gary Vesperman, happens to be the inventor of a major advance in torsion field communications, made possible by these special crystalline lattice structures. The maximum theoretical capacity of torsion field communications apparently is 40 billion channels of three-dimensional holographic television through the entire earth without attenuation at one billion times the speed of light.

It has long been recognized in the West that oscillating crystal structures can be engineered to create a usable flow of ions in the form of low-voltage direct electrical current. However, instead of relying exclusively on light in the visible spectrum alone to create ion flow, the Soviet system operates on all known ambient wave lengths simultaneously, in six harmonic resonant bands. It creates ion flow wherever and whenever such wave forms are present. It means that these devices operate on ambient heat remaining in a room or in the dead of night when there is no visible light present at all.

One more feature distinguishes the Soviet material from the Western photo-voltaic or solar cell. The Western cell operates by trapping photons of light in a cleverly designed network of glass, mirrors and other inter-connected reflective materials which are deposited on a substrate of a dielectric material. When the volume of "photon" traffic striking the dielectric material reaches a minimal threshold, electrical current is created.

That is, when enough photons have been captured to excite the surface of the substrate by either directly impacting molecules on the substrate surface or by creating heat energy sufficient to cause those molecules to oscillate, ion flow is induced. It is not a particularly efficient method, but it is the best that has been devised in the West.

In the Soviet material, because photons are known to behave in precisely the same manner as electrons, the photons (which are present in all wave forms, including visible light) are simply introduced to the energy wells between the tips of the molecular pyramids on the sheets of crystal lattice which overlay each other. The material is so efficiently designed that it actually absorbs (here is another place where imprecise common language gets us into technical difficulty) the individual photons in the same way it accommodates electrons.

During the discharge cycle, when a circuit is open and available, the photons simply follow the path of least resistance, which is out through the crystalline lattice and into an electrical circuit, energy storage device, or some other similar application.

The Soviet solar panel operates at a nominal efficiency of no less than 51% in the least consistent pieces which have been tested in the United States. The best pieces have produced test results demonstrating operating efficiencies in excess of 80%. These devices/materials produce electrical current at a higher rate per unit of exposed surface area in the dark of night than the best solar panel ever produced in the West will generate in the most ideal sunlight conditions.

The simple circular device attached to the Soviet satellite was a single solar cell which was used to power the entire ship and all its functions. The nuclear fuel signature detected by the Atlantis crew was nothing more than the emissions produced by a piece of spent nuclear fuel placed on board the satellite, intended to mislead the American surveillance team. It worked.

Advanced solar photo-voltaic cells produced by Em-Tech Technologies of Toronto, Canada, have demonstrated actual hands-on efficiencies in laboratory applications of more than 50%. These cells are based on designs developed by the IPMS. Theoretical models have yielded energy production efficiencies of more than 80%. These cells operate on such wide band-widths and at such high efficiency rates that their performance characteristics in the dark of night exceed those demonstrated in broad daylight by the best current, state-of-the-art solar cells produced anywhere else in the world. When applied to current global electric energy requirements for domestic, commercial, industrial and military use, the cost of electricity could be reduced to less than \$.002 per kilowatt hour, with the added capability of operating not only in daylight but at reduced loads throughout the night, regardless of weather, on virtually any scale.

(When I, Gary Vesperman, was peripherally involved with the IPMS inventions during the 1992-1994 period by way of preparing Rodger Ward's electric car IPO, I heard a cute story. Ashurst Technology Corporation was based in Las Vegas, Nevada, where I was also working. Ashurst wanted to bring some of the IPMS scientists to Las Vegas and set up laboratories. The scientists, who were used to the much colder climate of Kiev, Ukraine, balked at moving into the hot desert. Toronto, Canada was chosen as a compromise location for Em-Tech Technologies.)

For comparison, the very best solar cells ever produced in the West have been produced by the Japanese. These cells operate at a maximum of 19% efficiency. That is, they convert as much as 19% of the ambient visible sunlight shining on a clear, cloudless day into ion flow, which then becomes low-voltage direct electrical current flowing through a circuit. The Japanese panels require months per section to manufacture and literally cost more than their weight in gold to manufacture. They are very heavy and are so sensitive to vibration and calibration that once installed, they cannot be moved at all.

Joint ventures of the IPMS with more than a dozen private sector companies to develop these useful inventions have been repeatedly sabotaged by the U.S. Government's Defense Intelligence Agency and others. (Source: David G. Yurth, *The Anthropos Files: Tales of Quantum Physics from Another World* – 2nd Edition, 2007)

David G. Yurth emailed to Gary Vesperman on August 5, 2007 his own suppression story:

When I was hired in the Spring of 1992 by Ashurst Technology Corp, whose offices were then located on Western Avenue in Las Vegas, I was assigned the task of understanding everything there was to know about the new sciences and technologies developed by the I.N. Frantsevich Institute For Problems of Materials Science between 1945 and 1991, when the Berlin Wall came down. The owners of Ashurst had accidentally hooked up with three top scientists from the Institute, as reported in the publisher's proposal I submitted to my agent in the Spring of 1994. (Yurth's proposal comprised the original edition of *The Anthropos Files: Tales of Quantum Physics from Another World*. "Anthropos" is a Greek word meaning 'of man' or 'things related to humans'. Yurth used it in the title to his book about IPMS technologies because it occurred to him that their epic scientific and technological achievements offer everything needed to save Planet Earth from what we humans have been doing to it.)

My publisher's proposal was released by my agent to former Secretary of Defense Frank Carlucci at a luncheon they both attended at the Washington Press Club two weeks after I gave her my manuscript. Two weeks later, two guys in dark suits and thin black ties came into my office and attempted to confiscate my computer and all my records. I called the police, had them arrested and then was forced by the Director of the Western Regional Office of the Defense Intelligence Agency to forego publishing the book for five years under threat of prosecution and personal injury. When you read the treatment, you will understand why it was important. That was a major league suppression exercise, the scope of which you will come to appreciate after you have read my manuscript. They are still successfully suppressing many of the technologies that are cited in that piece of work. (Some of them are described elsewhere in this compilation of energy invention suppression cases.)

However, the most important scientific technology suppression story, in my estimation, is the successful squelching of the report issued to Discover Magazine by the CDF Collaboration at Chicago's Fermi Labs, citing the discovery and verification of sub-quarks as the constituents of quarks. I reported this information in my still unpublished book manuscript *Seeing Past The Edge* in considerable detail, including copies of the press releases and report abstracts issued by the more than 450 signatories to the report when it was issued. (This writer, Gary Vesperman, edited *Seeing Past the Edge*.)

If ever there was a significant suppression of essential, baseline scientific information, this was it. What it means to science, and what it suggests about the sufficiency of the Standard Physical Model is one thing. But what it says about the extent to which the gatekeepers for the scientific establishment are willing to go to suppress information that threatens their stranglehold on their own territorial imperatives is another matter entirely. If I were to choose between all the instances I know of scientific or technological suppression during the past century, this would have to be number one on my list, bar none.

Dave

Like energy inventors, physicists occasionally also encounter suppression. See <http://rense.com/general77/21.htm>.

Marshall Douglass Smith (Author): The Rise of Fascism in the American Energy Business

The ruthless geo-political strategy of corporate American energy oppression is clearly exposed by Marshall Douglass Smith in his book *Black Gold Hot Gold – The Rise of Fascism in the American Energy Business*. The book details the collusion of oil companies and the US military and federal government since the 1920s. A preview of Chapter 3 is available online at http://www.theforbiddenknowledge.com/hardtruth/black_gold_3.htm, and is recommended reading.

To be fair, an experienced oil and gas geologist, a friend of Gary Vesperman, thinks Smith's account is false of how the end of the Vietnam War was intentionally delayed until the very day that Standard Oil had completed its exploration of oil offshore of Vietnam.

And what do you suppose is really happening with Iraq and Iran? The *Los Angeles Times* article "It's Still About Oil in Iraq" (8 December 2006) -- see http://www.truthout.org/docs_2006/120906Y.shtml -- affords us some clues. The U.K. *Independent* article "How the West will make a killing on Iraqi oil riches" (http://news.independent.co.uk/world/middle_east/article2132569.ece, 7 January 2007), and Truthout's "New Oil Law Means Victory in Iraq for Bush" (http://www.truthout.org/docs_2006/010807A.shtml) confirm the suspicion of what many people think is the real reason why the United States invaded Iraq.

Perhaps the key to peace in Iraq would be to share Iraq's oil dividends among the Iraqi people, in the same manner that Alaska shares oil dividends (see <http://www.iraqdividend.com>). Instead, the American and British oil companies, in collusion with Bush administration, are planning to keep the lion's share. Realizing the real purpose of the U.S. invasion and reconstruction of Iraq, Iraq's oil workers unions are struggling to prevent the handover of ownership of Iraq's oil to foreign oil companies (see http://www.truthout.org/docs_2006/060907A.shtml).

To order a video about the US warning to the Taliban in August 2001 to allow an oil pipeline through Afghanistan --- or bombs would start dropping in October 2001 --- visit http://www.nutech2000.com/category1_1.htm.

It is logical to assume that the real reason for both Gulf Wars, and the interim between the two wars which featured US Navy patrols of Iraq, was to allow major American oil companies to use explosions from US Navy bombs -- for well over a decade -- to seismically explore for oil in the Persian Gulf off Iraq's shore, at nearly no expense to themselves, just like Standard Oil did during the Vietnam war.

Is it now time to explore for oil in the Persian Gulf off Iran's shore? But first the oil companies have to secretly stampede the United States and Iran into a very long war with each other...

CONCLUSION

It should now be evident that the oil/auto and power monopolies viciously defend their global energy markets by threatening, persecuting or even murdering targeted energy inventors, and even entire nations.

U.S. Patent Office Holds Secret 5000 Patents

The most straightforward way to suppress development of new sources of energy and still maintain an appearance of legitimacy might be by controlling the United States Patent Office.

Under the Invention Secrecy Act of 1951, the government may restrict the publication and dissemination of information about new inventions if their disclosure could be "detrimental to the national security." At the end of fiscal year 2006, there were 4942 invention secrecy orders in effect. These "secretized" patents are kept in the vault at the U.S. Patent Office (Park 5 Building). They never receive a patent number, and the inventor is rarely, if ever, compensated by the government for use of the invention. (Source: http://www.fas.org/blog/secrecy/2006/12/patent_secrecy_orders_lifted_o.html. Other patent secrecy links: <http://www.fas.org/sgp/othergov/invention/admin.html>, <http://www.fas.org/sgp/othergov/invention/37cfr5.html>, <http://www.fas.org/sgp/othergov/invention/australia.pdf>, <http://www.fas.org/spp/starwars/>, http://www.fas.org/blog/secrecy/2006/12/patent_secrecy_orders_lifted_o.html, http://www.fas.org/blog/secrecy/2006/12/navy_mind_control.html, and www.fas.org/sgp/othergov/invention/program.html.)

The U.S. Patent Office has a nine-member committee that screens patents in order to protect "national security".

An understandable reason for suppressing certain types of energy inventions is that the knowledge behind them is also capable of producing tremendously destructive advanced electromagnetic weapons such as the "death ray" apparently invented by Nikola Tesla and the Russian military's deployment of plasma beam weapons. Hence many such new energy technologies, particularly those using this kind of knowledge of advanced electromagnetic principles, are considered "dual use" technologies that are among the 5000 un-numbered patent applications confiscated in a vault at the U.S. Patent and Trademark Office because of their military potential and the need to keep that knowledge from America's enemies.

A hidden purpose of this committee is to also find and remove from public access energy-related patents which could threaten the fossil fuel and power monopolies.

Canada's patent office doesn't have a similar screening committee. It is recommended that energy patents possibly in danger of being classified should be first applied for in Canada. Once granted, up to one year is allowed to apply for the same patent in the U.S. Patent Office. Now the patent can not be classified because it is already out in the public domain, courtesy of Canada.

Text of Generic Patent Secrecy Order

SECRECY ORDER

(Title 35, United States Code (1952), sections 181-188)

NOTICE: To the applicant above named, his heirs, and any and all of his assignees, attorneys and agents, hereinafter designated principals:

You are hereby notified that your application as above identified has been found to contain subject matter, the unauthorized disclosure of which might be detrimental to the national security, and you are ordered in nowise to publish or disclose the invention or any material information with respect thereto, including hitherto unpublished details of the subject matter of said application, in any way to any person not cognizant of the invention prior to the date of the order, including any employee of the principals, but to keep the same secret except by written consent first obtained of the Commissioner of Patents, under the penalties of 35 U.S.C. (1952) 182, 186.

Any other application already filed or hereafter filed which contains any significant part of the subject matter of the above identified application falls within the scope of this order. If such other application does not stand under a security order, it and the common subject matter should be brought to the attention of the Security Group, Licensing and Review, Patent Office.

If, prior to the issuance of the secrecy order, any significant part of the subject matter has been revealed to any person, the principals shall promptly inform such person of the secrecy order and the penalties for improper disclosure. However, if such part of the subject matter was disclosed to any person in a foreign country or foreign national in the U.S., the principals shall not inform such person of the secrecy order, but instead shall promptly furnish to the Commissioner of Patents the following information to the extent not already furnished: date of disclosure; name and address of the discloser; identification of such part; and any authorization by a U.S. government agency to export such part. If the subject matter is included in any foreign patent application, or patent, this should be identified. The principals shall comply with any related instructions of the Commissioner.

This order should not be construed in any way to mean that the Government has adopted or contemplates adoption of the alleged invention disclosed in this application; nor is it any indication of the value of such invention.

(The harsh punishment for a violation of this secrecy order, should an inventor exploits or even simply discusses his or her invention which is classified by a patent secrecy order, is 20 years in federal prison. In effect the U.S. Government brutally and suddenly orders unlucky energy inventors to keep absolutely quiet and not do any more work on their inventions – without compensation for their well-meaning efforts. Thus a shocked, intellectually shackled and frustrated inventor would end up losing everything he or she had invested in his or her invention. The public is also ruthlessly denied any benefits from the invention.)

US Congress: Energy Inventor Protection and Patent Declassification Act

The newly elected United States Congress should immediately write, introduce, and pass a bill titled, "Energy Inventor Protection and Energy Patent Declassification Act of 2007". Included should be 24/7 protection of energy inventors and their property by armed guards, and declassification of as many as 5000 energy patents unfairly held in secret by the U.S. Patent Office. (In spite of what one email correspondent suggests is the appearance of appointing a fox to guard the henhouse.)

Remy Chevalier suggests that the U.S. Congress needs to put back into question the entire review process of patent law, and its consequences on environmental health, by imposing strict fines to who ever is caught buying energy patents for the sole purpose of keeping its protocol out of commercial circulation.

In this fourth version of Gary Vesperman's compilation of specific energy invention suppression cases, the body count rose to a disgusting high of as many as 17 innocent people who were brutally murdered just to ensure the global market supremacy of giant energy monopolies. 31 energy inventors and associates are known to have been threatened with death, and 5 energy researchers and associates have been imprisoned or falsely charged.

The Congressional bill should also include a provision to hunt down and imprison for many years the secret government/corporate energy invention suppressors and their hired bullies and assassins.

The U.S. Congress in 2005 gave the oil companies \$2.6 billion in tax breaks as a reward for \$190 million in campaign contributions. (Source: League of Conservation Voters)

Wilhelm Reich: Orgone Energy Motor

In the mid 1930s Wilhelm Reich, MD, began noticing an energetic connection that is shared by all living beings and had the clarity of mind to not dismiss the observation as unimportant. Dr. Reich called this energy "orgone" and worked for decades demonstrating its laws and studying its various manifestations.

Dr. Reich in 1948 got a "synchro" type of electrical spinner motor to run from both an orgone energy accumulator and an orgone-charged high-vacuum tube. James DeMeo and Nicholas Reiter have each written an article on the orgone energy motor construction and use, with eyewitness quotes and many construction details. DeMeo has also published a third article on the subject of electrostatic motors, which are powered by sources bearing some resemblance to what Reich used in conjunction with the orgone accumulator.

An assistant, either suspected to be secretly working for the U.S. Government or was simply an incompetent and thief, had helped with its mathematics and construction. This assistant then took some of Reich's money and the motor with him that winter on the pretense of working on further refinements. Instead he disappeared. None of his claims about his past including previous employment were verifiable.

The U.S. Government then campaigned for many years to thoroughly ban and burn Reich's books and any other printed literature that included the word "orgone". U.S. Government violations at the time included the warrant-less invasions and searches of the homes of people peripherally associated with Reich. In one such case, a home was searched, and Reich's books were confiscated from private bookshelves. School teachers and doctors who worked with Reich were fired from their jobs.

Reich died at the age of 60 after serving eight months of a two-year federal prison sentence. Reich had been falsely labeled a quack and a racketeer by the U.S. Government and the corrupt American medical system. (Sources: Emails from James DeMeo, <http://www.proliberty.com/observer/20030310.htm>, <http://www.orgonelab.org/cgi-bin/shop.pl/page=xpulse.htm>, <http://www.orgonelab.org/cart/xpulse.htm>, and http://pw1.netcom.com/~rogermw/Reich/orgone_motors.html.)

Energy invention suppression much too frequently involves energy inventors unjustly being deprived of their constitutional rights. Years ago James DeMeo, Ph.D., wrote a scathing well-referenced article "Anti-Constitutional Activities and Abuse of Police Power by the U.S. Food and Drug Administration and other Federal Agencies" (see <http://www.orgonelab.org/fda.htm>). The flagrant abuses by the U.S. Government he cites are clearly reflected by U.S. Government-sanctioned energy invention suppression terror tactics. At its end, he lists the pertinent constitutional rights which for over two centuries hundreds of thousands of Americans have defended with their lives as sacred:

The Constitution of the United States Bill of Rights, 15 December 1791

Amendment I: Congress shall make no law ... abridging the freedom of speech, or of the press...

Amendment IV: The right of the people to be secure in their persons, houses, papers, and effects, against unreasonable searches and seizures, shall not be violated...

Amendment V: No person shall be ... deprived of life, liberty, or property, without due process of law...

Bruce DePalma (Interview): A Peaceful Revolution against Energy Oppression

A University of California at Santa Barbara 1983 interview by Daily Nexus Staff Writer Evette Justus quoted Bruce DePalma, local physicist and scientist:

"A peaceful revolution can occur providing we can free ourselves from the oppression which is dominating us and controlling our day-to-day existence. This oppression is the necessity to make payments to a system which gives us the energy to heat our homes, transport ourselves, brings our food and fertilizer to grow our food, and makes the plastic that goes into our clothes. When we can be released from that we will have a choice. And this can be the only revolution – a peaceful revolution, and free energy technology makes this peaceful revolution possible." (Quote submitted by David Crockett Williams.)

How to Stop Energy Invention Suppression

Compiling energy invention suppression cases is the most disgusting project this writer, Gary Vesperman, has ever done. All too many times while writing these stories, I have recoiled in dismay at the meanness of the energy invention suppression bullies who for DECADES have conducted their vicious operations paid for by giant lying greedy energy monopolies and their secret allies in the United States Government.

Even if HALF of these suppression cases can somehow be found to be false, the conclusion is still inescapable that we have a very, very serious problem of which very, very few people are even aware.

Hundreds of billions of dollars of energy business are at stake. I can not think of another issue that is more fundamental to American politics than energy invention suppression.

Energy invention suppression indirectly impacts on the largest scale economics, national security, foreign policy, Middle Eastern oil wars, the environment, food production, preservation of beloved parks and wilderness areas, protection of endangered species from extinction, trade balances, climate change, conservation of scarce natural resources, company and personal bank accounts, and the health and safety of ourselves and our loved ones.

The perpetrators of energy invention suppression constitute the world's single most powerful economic force. They are secretly committing acts of high treason for which their leaders should be hunted down and severely punished. The Internet can educate and empower a widespread grassroots revolt against energy invention suppression. To stop paying hundreds of dollars a month of tribute to the energy tyrants as soon as possible, each of us millions of energy consumers must again and again identify and carry out specific organized actions – the combination of which hopefully will culminate in a peaceful overthrow of those traitors, restoration of full constitutional rights to energy inventors, and gaining our rightful energy freedom.

- In each energy activist's immediate geographic area, establish or join an Adopt an Energy Inventor Group to financially support and even physically protect a local energy inventor against harm.
- Petition the U.S. Congress to pass specific legislation against energy invention suppression such as the above suggested "Energy Inventor Protection and Energy Patent Declassification Act of 2007". One by one, each Congressperson must be closely questioned, monitored and held accountable for his or her actions concerning energy invention suppression. Government and corporate officials as well as Congresspersons who are found to be committing high treason by supporting often vicious energy invention suppression should be hunted down, quickly brought to trial and, if convicted, severely punished.
- Review and modify, where needed, existing federal and state laws and regulations which either intentionally or unintentionally suppress energy inventions. For example, in the suppression case described above of the Fish/Kendig Variable Venturi carburetors, the possibly corrupt California Air Resources Board forced a young college student to remove a Fish/Kendig carburetor from his Mercury "gas hog", even though it doubled mileage and reduced pollution.
- Educate and persuade local groups, companies, labor union locals, and government agencies to pass resolutions advocating energy invention freedom.

- Monitor energy research web sites such as www.keelynet.com, www.rexresearch.com, www.zpenergy.com, www.nexusmagazine.org, www.pureenergysystems.com, www.orgonelab.org, www.bob-dratch.org, www.teslatech.info, www.byronwine.com, www.commutefaster.com, www.freeenergynews.com, www.padrak.com/ine, www.cheniere.org, http://peswiki.com/index.php/Congress:Member:Leslie_R._Pastor, <http://www.atlantisrising.com>, <http://www.newenergycongress.org>, http://peswiki.com/index.php/New_Energy_Congress, <http://www.borderlands.com/freeenergy.htm>, <http://www.lenr-canr.org>, www.green-salon.com, <http://www.novainstituteoftechnology.com/>, <http://www.electrifyingtimes.com>, and <http://www.energysuppression.com>.
- Sell or give away millions of "End Energy Invention Suppression Now!" T-shirts, bumper stickers, yard signs, banners, etc.
- Subscribe to and buy back issues of alternative energy research publications such as Fusion Facts, Cold Fusion Times, Nexus, New Energy Times, Infinite Energy, Extraordinary Technology, Journal of New Energy, Borderland Sciences Research Foundation, New Energy News, Electrifying Times, Space Energy Journal, New Energy Movement, German Association for Field Energy, Swiss Association for Free Energy, and Canada's Planetary Association of Clean Energy.
- The mission of <http://www.energysuppression.com> includes a repository of energy invention suppression cases. Energy freedom activists may post notices relating to putting a stop to energy invention suppression. Energy freedom activists who organize a local "Adopt an Energy Inventor Group" will find resource materials and a place to announce and coordinate their anti-suppression activities.
- <http://www.energysuppression.com> will enshrine an honor roll of "Warriors for Energy Freedom". These are companies, university student groups, labor union locals, individuals, environmental organizations, and other groups who advocate restoration of full constitutional rights and adequate financial support to inventors of new sources of energy. A description of their actions, which can be as simple as a publicly declared corporate resolution, would accompany their listings. New nominations will be voted in by majority vote of the New Energy Congress.
- <http://www.energysuppression.com> will display an "Energy Invention Suppression Hall of Shame" listing the names of those who have been clearly identified as perpetrators of energy slavery. New nominations will be voted in by majority vote of the New Energy Congress.

The U.S. Congress and the environmental organizations quibble about raising automobile mileage standards a paltry few miles per gallon. Let's get real! Let's instead now begin this ultimate environmental crusade with millions of bumper stickers, meetings, state legislative resolutions, demonstrations, emails, yard signs, labor union boycotts, T-shirts, energy inventor adoptions, movies, live concerts, crusades, letters and phone calls to the U.S. Congress, web sites, television documentaries, sit-ins, college lectures, protests, and banners in the streets and on vehicles blowing in the wind...

End Energy Invention Suppression Now!

DISCLAIMER: Inclusion of any invention or technology described in this compilation of energy invention suppression cases does not in any way imply its suitability for investment of any kind. All investors contemplating any investments in these devices and technologies should first consult with a licensed financial professional. Prospective investors should exhaustively perform their own investigation of pertinent facts and allegations of facts. Investors should also ensure thorough compliance with regulations of the federal Securities and Exchange Commission and appropriate state securities divisions. For more information, see <http://www.zpenergy.com/modules.php?name=News&file=article&sid=1655>.

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 September 3, 2007

Thank you for your comment, Gary Vesperman.

The comment tracking number that has been assigned to your comment is SEDDSupp20011.

Comment Date: December 1, 2011 19:54:15PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDSupp20011

First Name: Gary
Middle Initial:
Last Name: Vesperman
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Address: 588 Lake Huron Lane
Address 2:
Address 3:
City: Boulder City
State: NV
Zip: 890051018
Country: USA
Privacy Preference: Don't withhold name or address from public record
Attachment: Energy Invention Suppression Cases September 3 2007.doc

Comment Submitted:

Attached is my compilation of 95 energy inventions that have been suppressed by the U.S. Government and others. Pages 12-13 have this:

Gerald Schaflander: Solar-Produced Hydrogen Turned into Liquid Hy-Fuel

During the 1970s Gerald Schaflander, with the Solar Electric Power Corporation of Culver City, California, and with financial help from some friends, built a pilot production facility in Menlo Park, California. Schaflander had developed gallium aluminum arsenide/gallium arsenide solar cells and was producing hydrogen with the cells' output, which was then chemically turned into a liquid fuel called Hy-Fuel. The fuel could be utilized in cars or trucks. It was not used as a liquid but as hydrogen gas, by cracking it and feeding the recovered hydrogen gas through a special carburetor.

Schaflander and his scientists had found from their own experiments that silicon will not work. It deteriorates in the desert heat and becomes only about 2 percent efficient. Having found silicon cells unsatisfactory, Schaflander's scientific team perfected gallium aluminum arsenide/gallium arsenide solar cells. They also found a way to produce such cells on a semi-automated basis, slashing costs. Some of the photovoltaic cells used to power NASA spacecraft cost as much as \$5 a watt to produce; Schaflander's automated process reduces the cost to 27 cents a watt.

The prototype of a commercial Hy-Fuel production facility on 1000 acres of leased land near Yuma, Arizona comprised of two lines of slanted solar panels that gather the sun's rays. Behind them were rounded, cylindrical "parabolic concentrators" that intensify the energy collected by the panels and focus it on photovoltaic cells. The cells produce electrical energy, and electrolysis then splits the hydrogen atoms from water. The hydrogen gas so produced is turned into a stabilized liquid similar to ammonia. The liquid Hy-Fuel is fully substitutable for fuel oil or for gasoline in automobiles, tractors and other vehicles. These are connected by wires and tubing to a small pumping station and rounded storage tanks.

This Yuma solar energy farm was the creation of Consumers Solar Electric Power Corporation of Culver City, California. On July 1, 1980 the firm had its first commercial tank load of 250 gallons of Hy-Fuel ready for delivery at only 50 cents a gallon, and was producing more Hy-Fuel. With an option on leasing another 10,000 acres and given financial support, the facility could be cranked up to full production on the entire 11,000-acre tract in six months. According to Stephen Wright, president of Consumers Solar and its scientific expert, with eight hours of continuous Arizona sunlight a day, such an energy farm would produce 3.8 million gallons of Hy-Fuel a day.

Hy-Fuel production could be increased considerably by substituting Soviet-developed high-efficiency crystal lattice solar photo-voltaic cells (see below).

A unique co-generation system would turn the waste heat produced by the process into low-pressure steam that could be used to drive turbines producing electric power for the utilities. Schaflander estimates that his company's energy farm could produce electricity at a capital cost of \$690 per kilowatt. The capital-cost figures for fossil-fueled and nuclear-powered plants are \$1,200 and \$1,400 per kilowatt, respectively. Note that these are 1980 figures.

Conversion of present engines to hydrogen fuel can be accomplished in a few hours. The process involves removing the gasoline tank and installing a new tank capable of holding the slightly heavier hydrogen hydride mixture. A “cracker” would be positioned in the front of the car next to the motor to convert the ammonia-like Hy-Fuel into a gas mainly composed of hydrogen. This gas would flow into a new carburetor to which a fuel regulator is attached. Certain other solenoid valves and vacuum and pressure switches would be wired into the car. The hydrogen-powered vehicle would then be ready to roll.

There is no question that Hy-Fuel works. Schaflander had converted eighteen Chevrolet engines to his revolutionary fuel and had driven them across the continent, getting about twenty miles to the gallon. Tests show that Hy-Fuel’s emissions are far cleaner than gasoline, obviating the need for costly emission devices such as catalytic converters which poison roadsides with toxic platinum dust particles. Hy-Fuel is also more stable than gasoline – far less likely to explode in case of an accident.

All this was developed without a dime of federal tax money. In 1978 Schaflander challenged a U.S. House of Representatives Energy Committee to let him test his device on a selected fleet of U.S. Government cars. Although he asked for no up-front money and had promised, “If we can’t deliver, we don’t get paid,” the U.S. Government turned him down.

Schaflander was harassed by oil company-inspired opposition, including telephoned death threats to his 79-year-old mother and quite “official” opposition from the U.S. Postal Service. His company was essentially driven out of business. The whole story is described by a long article that was published in the October 4, 1980 issue of The Nation. There is much detail on the suppression, but little data on the actual process used. (Source: “The Hydrogen Alternative: Somebody Doesn’t Like Hy-Fuel” Fred J. Cook, The Nation, October 4, 1980, pp. 305-311)

(End of excerpt)

This Draft Solar PEIS should precisely and honestly compare the cost-effectiveness of solar-produced hydrogen into liquid “Hy-Fuel” as described above with conventional solar energy collection and transmission methods such as photovoltaic and solar thermal concentrating.

This Draft Solar PEIS should thoroughly and honestly examine the scenario where the U.S. Government reverses its policy of suppressing the above described solar energy utilization method and insteads vigorously develops and commercializes solar produced hydrogen into liquid “Hy-Fuel”.

ENERGY INVENTION SUPPRESSION CASES

Compiled by Gary Vesperman with the help of numerous contributors

Introduction

In their efforts to improve the well-being of their fellow humans, inventors often suffer poverty, slander, and suppression. Inventors of energy devices in particular have been threatened by large energy corporations who are allied with the United States Government and seek to enslave people in subtle ways. The tactics used against energy inventors include “legal” imprisonment on false charges, harassment by the IRS, and outright criminal death threats, beatings, bribery, burglary, vandalism, and arson. At least a few inventors have been murdered if they were not dissuaded by other means.

Sometimes, however, alleged energy inventions actually have been scams, or were tested incorrectly, and their inventors then claimed to be victims of a conspiracy. Many inventors merely have been ignorant of the laws of nature – the history of “perpetual motion machines” provides ample proof of that fact. Many otherwise brilliant inventors have been poor businessmen who signed defective contracts or whose personalities prevented successful negotiations. Some have failed to persevere: it can take decades to bring an invention to the marketplace, and the vicissitudes of life interfered with their plans. Others unfortunately died of natural causes before they achieved success.

Adding to the practical difficulties of pulling out of thin air new energy inventions that have never before been thought of, testing prototypes of some of these energy inventions can be frustrating due to a weird quirk of nature. Thomas E. Bearden, Ph.D., reports that certain types of energy inventions interact with their local vacuums. Thus their coefficient of performance can vary from place to place, due to the local vacuums themselves differing. A machine would produce over-unity energy in one location; then inexplicably quit after being moved to another location!

Dr. Bill Tiller, former head of the Materials Science Department of Stanford University, developed a unique detector which required that he “grow” its proper pattern in the local vacuum interaction environment. Experimental results from the detector helped Bearden understand changes in interaction between a local vacuum and a novel machine.

All too many times, however, the conspiracy to suppress new energy inventions has been very real. For energy invention suppression updates, see <http://www.energysuppression.com>.

Energy Invention Suppression Case Statistics

Number of Energy Invention Suppression Incidents – **95**

Number of Dead, Missing, or Injured Energy Inventors, Activists, and Associates – **20**

Number of Energy Inventors and Associates Threatened with Death – **32**

Number of Energy Researchers and Associates Imprisoned or Falsely Charged – **5**

Number of Incidents of Energy Invention Suppression by the United States Government, Patent Office, Central Intelligence Agency, Federal Bureau of Investigation, U.S. Marshals, Army, Air Force, Navy, Bureau of Alcohol, Tobacco, and Firearms, Defense Intelligence Agency, S.W.A.T. Teams, National Security Agency, U.S. Postal Service, Department of Energy, Department of State, Securities and Exchange Commission, Food and Drug Administration, Department of Defense, Department of Homeland Security, Internal Revenue Service, Rural Electrification Administration, White House, Consumer Product Safety Commission, Small Business Administration, and Canada’s Royal Canadian Mounted Police – **59**

Number of Inventions Classified Secret by U.S. Patent Office – **5000**

Number of Incidents Involving Oil Companies – **9**

Names of Companies, Banks, State Agencies, Private Groups, and Universities Involved with Energy Invention Suppression – **Standard Oil, Zapata Petroleum, Atlantic Richfield, Exxon-Mobile, Shell Oil Company, General Electric Company, Yakuza, California Air Resources Board, Organization of Petroleum Exporting Countries, Wells Fargo Bank, Ford Motor Company, General Motors Corporation, Massachusetts Institute of Technology, Queen of England, Kollmorgan, World Bank, Rockefellers, Carlyle Group, and Bush Family**

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Nikola Tesla: Wireless Power and Free Energy from Ambient

Nikola Tesla invented the alternating current electrical system we use today, and dozens of other technologies. Many of his other inventions are fundamental to the modern electrical world. The US Patent Office has 1,200 patents from Tesla, and it is estimated that he could have patented an additional 1,000 or so inventions from memory! Nikola Tesla was undoubtedly one of the greatest scientists who ever lived.

Tesla's "Magnifying Transmitter", built in 1895 at Wardencliff on New York's Long Island, has been suppressed (largely by ignoring and disdaining it), but in recent years it has received new attention for its potential to power civilization with radio-broadcast electricity, possibly even without fuel. The project was financed by John Pierpont Morgan. But Tesla was not an astute business man, and he affected a disdain for money. It is popularly believed that when J.P. Morgan learned that Tesla's system would provide free energy, he stopped funding the work. As reported by Robert Nelson, (see his comprehensive energy inventions web site www.rexresearch.com) the fact of the matter is that, rather than arranging a comprehensive financial agreement for development of the system, Tesla simply dunned Morgan for relatively small sums of money at regular intervals. The personal nature of their financial relationship is evident to anyone who takes the time to read Tesla's correspondence with Morgan (not an easy task, as Tesla's handwriting is difficult to read). For more history, see Leslie R. Pastor's Introduction in http://peswiki.com/index.php/Site:LRP:Motionless_Electromagnetic_Generator. Tesla also built and drove a Pierce-Arrow car during the 1930's which ran on a free energy device without refueling.

Benjamin Fulford in a stunning early July 2007 interview by Jeff Rense (see interview transcript in http://bellaciao.org/en/article.php3?id_article=15376) claimed that his great-grandfather George Taylor Fulford was one of the richest men in the world. He also was the largest stockholder in General Electric. When he learned J.P. Morgan had abruptly backed out of supporting Tesla, Mr. Fulford pressured General Electric to step in. He was going to finance Nikola Tesla, but he was murdered by the Rockefellers in 1905. It was made to look like a car accident. And the family fortune was stolen by the Rockefellers. Benjamin Fulford's grandfather was only three years old at the time. His grandfather didn't know how to suspend his assets.

After Morgan died, his heirs and managers, who did not have a working relationship with Tesla, stopped supporting construction of the transmitter. The tower was demolished during World War II, allegedly because it could serve as a landmark for German submarines. Some modern conspiracy theorists have claimed that it was destroyed in order to suppress the technology. Perhaps so, but in any case, now we suffer with a monstrous grid system that is controlled at many levels, rather than enjoying the energy freedom Tesla had envisioned.

In a speech presented in 1988 on the subject of "Climate Change Factors, Ozone Layer Crisis, and Zero Point Energy Technologies" (see below for complete text) Adam Trombly reported information from a contact that Tesla was poisoned and died in 1943 the night before he was scheduled to go to Washington, DC to meet with President Franklin Delano Roosevelt. Tesla had intended to propose to Roosevelt that perhaps we should look carefully at the fact that we can get all the energy we need from any space we happen to be in. The U.S. Government's Federal Bureau of Investigation confiscated two truckloads of Tesla's written work after his death, much of which remains classified.

Robert Golka: High-Powered Tesla-Type Energy Tower

In 1981 in Wendover, UT, Robert Golka, a well-known Tesla researcher, was victimized by an attack on his workshop which has, for years, been in a deactivated Air Force hanger. His high-powered energy tower outside the hanger was partially destroyed. A witness said insulators and sections of the tower were laying around the base. In the meantime the rent on the Air Force hanger has been raised 1000 percent! These new difficulties now threaten to bring an end to his research with Tesla devices. (Source: <http://peswiki.com/energy/Directory:Suppression>)

Bruce DePalma: N-1 Homopolar Generator

Harvard-educated Bruce DePalma, who taught physics at the Massachusetts Institute of Technology for 15 years, invented the homopolar electricity generator, also called the "N-Machine", that could provide cheap, inexhaustible, self-sustaining and non-polluting energy. The N-Machine uses principles that flout conventional physics and are still not fully understood. A 100-kilowatt N-1 homopolar generator prototype sat in his garage. It could power his whole house. But DePalma was afraid to turn it on for fear the U.S. Government may confiscate it.

In early November 1980, the night before Bruce DePalma was scheduled to leave for Germany to be the featured presenter at Hans Nieper's Gravity Field Energy Conference in Hanover Germany, DePalma got a phone call from US astronaut Edgar Mitchell claiming "The CIA has information to the effect that if you go to Germany you will not be coming back. And you better watch out what you do there in Santa Barbara, or you might get your head blown off." Mitchell was "best friends with George H.W. Bush" – at that time directing the US Central Intelligence Agency (CIA). DePalma eventually left the USA to live in New Zealand.

BRUCE DePALMA: Free Energy Update 11/14/90. Audio cassette #A1009-90 \$9.00. Live on Something's Happening. Bruce DePalma, inventor of the "N Machine" (so-called "free energy") presents an update on its development including U.S. Navy development, a letter by U.S. astronaut Edgar Mitchell on the validity of the invention, and the forced imprisonment of DePalma's chief backer.

For more information about George H. W. Bush's involvement with the CIA, read the Truthout article "Bush Senior Early CIA Ties Revealed" in <http://www.truthout.org/docs/2006/010907P.shtml> (9 January 2007). Newly released internal CIA documents assert that the former US President's original oil company, Zapata Petroleum, was established in 1953 by joint efforts with Thomas J. Devine, a CIA staffer.

Devine and Bush visited Saigon early January 1968 shortly before the North Vietnamese launched their Tet offensive. Marshall Douglass Smith in his book *Black Gold Hot Gold – The Rise of Fascism in the American Energy Business* (see below) exposes how the war in Vietnam was not allowed to end until the very day that Standard Oil had completed using the US Navy to explore Vietnam's off-shore oil fields for ten bloody years at nearly no expense to the company. The war was needlessly prolonged by months of silly wrangling over the shape of the Paris peace negotiation table, and by Henry Kissinger's obfuscations.

?????: Mixed Chemical Stone

A mixed chemical stone was found in England and secretized by the Queen. It generated its own electrical sparks. This material appears to be a version of rocks which self-generate voltages such as those researched by John Hutchison, Thomas Henry Moray (see below), and Thomas Townsend Brown. The Queen's holdings are so extensive that it may be that she was not personally involved or even aware of the stone. The Queen may not have very much scientific understanding anyway.

April 7, 2006 Wells Fargo Bank announced they finally invested \$5 million of the \$1 billion intended for renewable energy. Where did they invest? In a mutual fund: Carlyle/Riverstone Renewable Energy Infrastructure Fund I, Limited Partnership. Funny thing, who are the 3 largest stockholders of Carlyle Group? The answer in order of largest percentage owned: (Source: Al Martin)

1. The Queen of England
2. Bush Family
3. Bin Laden Family

President George W. Bush's brothers Neil and Marvin Bush might be among the secret leaders of ongoing viciously thorough energy invention suppression. See <http://www.nogw.com/shadow.html>.

Andrija Puharich: Method and Apparatus for Splitting Water Molecules

One of the more interesting research projects in which energy researcher Leslie R. Pastor personally got involved with has been research involving 'water as fuel' dynamics. From the time of Jules Verne to the present 'water as fuel' has been man's quest, if not speculative goal, to discern, decipher and to design. It is well-known that water can be disassociated, and separated into its two components of hydrogen and oxygen. With the use of electrolysis, water is easily disassociated, giving off its properties, in the form of useful gases, but, in very limited quantities, depending upon the amount of current directly used to accomplish its disassociation. From Brown's (Rhodes) gas to 4-space, water is indeed mysterious, ultimately remaining the focus of countless experimenters and practitioners. And still it remains elusive just out of the reach of useful usage. Or has it?

Several recent experiments involving a variety of 'water as fuel' derivatives have ultimately surfaced, strongly indicating that 'hydrogen' based 'energy' structuring is fundamentally possible and will ultimately provide a means at accomplishing a very serious alternative to so-called 'fossil fuel' technologies. What remains to be seen, is whether the existing superstructure involving the monopolistic cartels of "global big oil" and "international nuclear-based companies" will allow any advancement towards 'market' restructuring, without their approval and cooperation.

Oil is just as easily ‘cracked’ and ‘restructured’ into ‘hydrogen’ formats. In fact, it is the goal of both of these factions to ultimately build a network of ‘novel’ nuclear reactors capable of providing ‘electricity’ and ‘hydrogen’ production derived from this combination, precluding any attempt to escape from their monopolistic designs of enforcing their ‘control’ paradigm.

The suppression of ‘water as fuel’ technologies invented by small independent inventors, therefore, takes on significance, since this would prevent further monopolistic dominance by the existing cartels, already dominating the existing ‘energy’ field.

Andrija Puharich (see <http://www.andrijapuharich.org/>) was granted U.S. Patent No. 4,394,230 for a "Method and Apparatus for Splitting Water Molecules." This method would reportedly split water molecules into hydrogen and oxygen with a net energy gain, and is essentially a perpetual energy device that many believe violates the first law of thermodynamics. Puharich was a very interesting gentleman, with friends in very high places, and led a very dynamic life, incorporating both, style and access, to some of the most powerful components of the political spectrum internationally. Puharich, being a friend of R. J. Reynolds (3rd), found support and protective acceptance, until he fell into disfavor with David Rockefeller, ultimately necessitating him to seek protection from another friend, the [then] Mexican President. Puharich capitulated, acquiescing to Mr. Rockefeller’s demands, promising not to engage in further ‘water as fuel’ research, thereby, stopping all attempts at his sanctioned assassination by the U. S. Government’s CIA.

<http://www.rexresearch.com/puharich/1puhar.htm>

<http://waterpoweredcar.com/puharich.html>

<http://www.zpenergy.com/modules.php?name=News&file=article&sid=1191>

<http://www.angelfire.com/ak5/energy21/puharich.htm>

<http://www.keelynet.com/keely/puhal.txt>

http://www.wasserauto.de/html/more_cars_.html

http://www.freie-energie.net/index/freie_energie/wasserautos/wasserautos.htm

Pastor mentions Puharich, in his initial introductory statement, because of Puharich’s direct relationship within the most significant references of power politics. Puharich was well connected, and respected within the most elite of global society. He was known academically, and internationally among the power elite. He therefore was a significant threat to those special interests involving a direct influence regarding energy sources as fuel derivatives. And his use of ‘water as fuel’ was a direct threat to one of the most powerful families on planet Earth. Puharich had to personally assure the Rockefeller family that he would no longer engage in further research or usage of ‘water as fuel’ to power combustion engines. (Source: http://peswiki.com/index.php/Site:LRP:Actual_Case_Histories_of_Suppression_Occurrences)

Neil Schmidt: Hydraulic Wind Turbine

Neil Schmidt stopped in Gary Vesperman’s office 12 May 1995 to discuss his invention of a hydraulic wind turbine. Schmidt had lived in Las Vegas for seven years. Nine years previous when he was living in the Seattle area, he went into a federal Small Business Administration office to apply for financial aid. The following day, he received a telephone call and was told it wouldn’t work and not to bother with it. He had provided the SBA office hardly more than a sketch so a hot argument erupted which lasted a half hour. The man ended up hinting death to Schmidt if he didn’t stop working on his invention. A couple of days later, Schmidt went back to the SBA office and walked around unsuccessfully trying to identify the voice he had heard on the telephone.

Neil Schmidt also has heard that another energy inventor living near his Washington residence had been shot in the head and blinded.

United Nuclear: Hydrogen Fuel System Kit

The United Nuclear Hydrogen Fuel System Kit converts late-model fuel-injected gasoline-powered vehicles to run on hydrogen. In addition to specific complete kits that are planned to soon be available for specific late-model cars and trucks, individual system components will be available for those who choose to assemble their own kits.

Included in the kits (and also available separately) is the company’s either solar or wind turbine-powered hydrogen generator that remains in the vehicle owner’s garage. The hydrogen generator manufactures the hydrogen fuel for the vehicle at virtually zero cost. Simply put, the vehicle’s owner never would have to buy gasoline again. Since there are no major changes made to the engine, a converted vehicle can still run on gasoline at any time.

Powering a vehicle by hydrogen is by no means a new idea, and in fact, almost all automobile manufacturers are currently developing a new generation of vehicles that run on hydrogen as opposed to gasoline. This new generation of vehicles essentially comprises of electric cars that use fuel cell instead of batteries to run the electric motor. Using a chemical process, fuel cells in these new vehicles convert the stored hydrogen on board, and the oxygen in the air, directly into electricity to power their electric motors. These new hydrogen powered electric vehicles are very efficient, and in fact are more efficient than any internal combustion engine. The problem is that these new vehicles are years away from production, are very expensive, and converting to using hydrogen fuel in this manner requires the purchase of a new (and expensive) vehicle. All hydrogen/fuel cell systems currently under development by large manufacturers require the purchase of hydrogen as would be for gasoline.

The United Nuclear Hydrogen Fuel System Kit is an intermediate approach that simply converts existing vehicles to burn hydrogen or gasoline. The stock gasoline fuel injection system remains intact and is not modified in any way. It is shut down while the hydrogen fuel system is activated. The company reportedly operates two test vehicles for which gasoline haven't been bought for two years.

The hydrogen gas is precisely metered into the air intake of the engine while the exhaust gasses are continuously analyzed for correct burn ratio. This allows the driver to switch between running on gasoline or hydrogen at any time. The engine itself is only slightly modified. The conversion makes substantial changes to the computer & electrical system, ignition and cooling systems. Since they never have to be removed, hydrogen fuel storage (hydride tanks) can be installed in virtually any available space within the vehicle.

Due to the fact that hydrogen gas burns so much faster than gasoline, engines with compression ratios greater than 9.5 to 1 are very susceptible to damaging pre-detonation (engine knock). For this reason, hydrogen conversions are not recommended for vehicles with turbochargers, superchargers, or compression ratios greater than 9.5 to 1. Also, because of the higher compression, different ignition system, and host of other factors, the Hydrogen Fuel System will not work on diesel engines.

The company's hydrogen generator produces hydrogen from electricity. The electricity can be common "household current". If the electricity is produced directly from solar power or wind power, the energy cost is zero. Electricity can be produced by Neil Schmidt's hydraulic wind turbine (see above), or by a number of other wind generators such as Number 47 of <http://iic.de/4643.html> which is a combined solar/wind electricity generator.

The most productive solar photo-voltaic cell seems to be the Soviet-developed high-efficiency crystal lattice solar photo-voltaic cells described below.

Las Vegas inventor Jeff Prescott invented a method of generating hydrogen by concentrating solar rays to heat pure iron in the presence of water. The iron oxide byproduct can be sold for paint and other uses. Questions remain as to the overall energy efficiency of his process, particularly in regard to refining and transporting the pure iron.

It does, however, take a substantial amount of time to produce sufficient hydrogen to fill even a small tank. As an example, it takes over 2 days of the company's hydrogen generator running at full power, 24 hours a day, to fill its smallest "short range" tank.

The tanks are filled with granulated hydrides which absorb hydrogen like a sponge absorbs water. Hydrogen is pressurized into the material. Hydrides have many advantages over ultra-cold liquid or pressurized gaseous hydrogen. One is that the density of the hydrogen stored in the hydride can be GREATER than that of ultra-cold liquid hydrogen. This translates directly into smaller and fewer storage tanks.

Once the hydride is "charged" with hydrogen, the hydrogen becomes chemically bonded to the chemical. Even opening the tank, or cutting it in half will not release the hydrogen gas. In addition, if incendiary bullets are fired through the tank, the hydride would only smolder like a cigarette. It is in fact, a safer storage system than a gasoline tank.

Then how do you get the hydrogen back out? To release the hydrogen gas from the hydride, it simply needs to be heated. This is either done electrically, using the waste exhaust heat, or using the waste radiator coolant heat.

The company's Hydrogen Fuel System kits heat the hydride tanks electrically. As soon as the hydride is sufficiently warm, hydrogen is released from the tanks, and the on-board computer detects the presence of hydrogen pressure. The fuel system remains in "Hydrogen" mode until the tank pressure begins to drop. If the tanks run out of hydrogen, the engine will seamlessly switch over to gasoline, which enables the car to run conventionally until the hydrogen tanks are refilled at zero cost.

Using hydrogen, the only exhaust products produced are water vapor and a tiny amount of nitrogen oxides. It's about as clean burning as you can get.

United Nuclear's first prototype was a 1994 Chevrolet Corvette that was converted to run on hydrogen. Using the Extended Range kit (2 sets of tanks), the driving range is over 650 miles per fill. As the hydrogen gas is produced using the company-furnished solar-powered hydrogen generator, the resulting fuel cost is near zero.

United Nuclear now has accumulated over 50,000 trouble-free miles on their prototype vehicles. They are currently fleet-testing their systems and are in final preparation for sales to the general public. They will fully guarantee and stand behind all their products and workmanship. Their conversion kits will initially sell for \$7,000 to \$10,000 each.

United Nuclear has developed every aspect of its Hydrogen Fuel System on their own, using their own funds and not a dime of federal tax money. They do not sell stock, and do not need investors.

Not unexpectedly, the corrupt U.S. Government has swooped in by utilizing its Consumer Product Safety Commission (CPSC) as a means of suppressing the pending commercial sale of United Nuclear's Hydrogen Fuel System Kit by confiscating the necessary chemicals used in this system from public use – possibly basing its action on false premises.

Currently, the CPSC is focusing on common chemical oxidizers such as perchlorate compounds, nitrate compounds, permanganate compounds, chlorate compounds, etc., along with a wide variety of other common chemicals and metals such as sulfur, aluminum, magnesium, titanium, zirconium, zinc, manganilim, benzoate compounds, salicylate compounds, antimony and antimony compounds, etc.

The CPSC now claims that this action is to stop the manufacture by United Nuclear of illegal explosive fireworks. If their true intention is to attempt to curtail the construction of these devices, there are only two chemicals which should be of concern: potassium perchlorate and German aluminum.

For those unfamiliar with exploding fireworks, they are all made from one material: flash powder. Flash powder is a mixture of potassium perchlorate, and a special ultra-fine aluminum powder known as German aluminum. These have been the only 2 chemicals used in the manufacture of every single exploding firework from firecrackers to M-80s from the 1960s to present times.

United Nuclear's Hydrogen Fuel System Kit is not yet available for sale. There are legal problems with several components of the unit which is preventing its sale. Until the legal proceedings are complete, the company won't be moving forward with the system. (Sources: <http://www.switch2hydrogen.com/>, <http://www.switch2hydrogen.com/>, <http://www.unitednuclear.com/legalactionletters.htm>, <http://www.wired.com/wired/archive/14.06/chemistry.html>, <http://nextconservatism.com/2006/11/14/>, <http://roquestatesmen.blogspot.com/2006/05/who-wants-free-energy-anyway.html>, and <http://peswiki.com/index.php/Directory:Suppression>.)

Daniel Dingel: Converts More than 100 Cars to Run on Water

Inventor Daniel Dingel, who lives in the Philippines, since 1969 has converted more than 100 gasoline cars to be powered by hydrogen derived ON DEMAND from plain water. Aluminum is used in the tank to suppress a possible explosion. The Philippines President is not interested because of an agreement with the World Bank. For a link to a movie about his water-powered cars, see Section 12-G of <http://www.byronwine.com/>. For more on the Philippines experience with the international bankers, see <http://www.indybay.org/newsitems/2006/04/10/18144521.php>.

Maker of water-powered car still fighting after 30 years

By Joey G. Alarilla (see http://www.wasserauto.de/html/inquirer_article.html.)

1969 was a landmark year for a number of reasons, including the conquest of space and cyberspace. Even as that year saw Neil Armstrong and Buzz Aldrin walking on the moon, so was the Internet born when its earliest incarnation, the United States Defense Department's Arpanet (Advanced Research Project Agency network), went online.

In the Philippines, 1969 was also the year that a Filipino inventor claims to have started tinkering with a revolutionary concept for the automotive industry. His idea: To power cars using hydrogen derived from ordinary water.

Today, 30 years later, inventor Daniel Dingel is driving around in the only water-powered car in the world, still complaining that Filipino government officials and scientists refuse to support his invention.

"They keep saying that the government is pro-poor, but what they do is sell off the resources and wealth of the Philippines. The government should really support the development of technology that would help the country pay its huge foreign debt," he said.

At the Inquirer parking lot last Tuesday, Dingel showed off his "concept car"- a red 16-valve Toyota Corolla with the small hydrogen reactor that he invented hooked up to its internal combustion engine (ICE). Dingel's hydrogen car has actually received media coverage since the late '80s or so, but to date his invention has not yet been patented and commercialized. Dingel attributed this to the influence of multinational companies, such as the oil companies. A conspiracy theory worthy of the X-Files, perhaps, but if Dingel's idea is real, then the truth is way out there.

How it works:

According to him, his reactor uses electricity from a 12-volt car battery to transform saltwater or ordinary tap water with salt into deuterium oxide or heavy water, which is chiefly used as a coolant for nuclear reactors. Deuterium is actually a hydrogen isotope with twice the mass of ordinary hydrogen, and heavy water is produced when the hydrogen atoms in H_2O are replaced with deuterium.

"The electricity from the battery splits the water into its hydrogen and oxygen components, and this hydrogen can then be used to power the car engine. Normally it takes temperatures of about 5,400 degrees Fahrenheit to generate hydrogen from water, but here I am just using an ordinary 12-volt battery," he claimed.

Just how this kind of chemical reaction is possible using an ordinary car battery is, of course, the secret behind Dingel's invention – and the kind of claim that leads people to dismiss him as a crackpot and charlatan. In fact, while hydrogen is being touted as a viable alternative fuel in the US and other countries, these prototypes do not make use of internal combustion engines but fuel cell engines, nor do they run on ordinary water but on liquid hydrogen.

For example, DaimlerChrysler unveiled in the US in March the hydrogen-powered NECAR 4 (New Electric Car), which is based on a Mercedes-Benz A-class compact car.

In these fuel cell cars, water is just a by-product of the reaction between hydrogen and oxygen ions, which produces the electricity to run the car's engine. In this sense, the fuel cell process is the reverse of Dingel's discovery. Also, Dingel claims that his reactor can work with any existing ICE-based car.

Dingel said some investors from Taiwan now plan to commercialize his car and help him get an international patent.

(End of excerpt)

Update (*Electrifying Times* (www.electrifyingtimes.com), Vol. 10, No. 2, 2007, page 22):

Dingel did get some of his international patents and was given a sizeable sum of money from yet unknown sources to keep his invention quiet. The secret formula for Dingel's technology as well as the late Stanley Meyer's water cell car is a certain resonant frequency and voltage that allows much lower energy to produce hydrogen and oxygen from water than the standard electrolysis method requires. Stay tuned.

This writer, Gary Vesperman, included a possibly similar invention in his somewhat obsolete compilation of "Advanced Technologies for Foreign Resort Project" which is in <http://www.icestuff.com/~energy21/advantech.htm>. It is copied as follows:

Water Engine. Hydrogen is formed by creating an underwater electrical discharge between two aluminum electrodes. Aluminum wire is fed against a rotating aluminum drum. A hydrogen-fueled 900-kilogram car runs 600 kilometers on 20 liters of water and one kilogram of aluminum.

The required high voltage can be obtained from the battery, a generator off the drive shaft, or two coils in parallel and fed from a conventional distributor.

The hydrogen gas fills a small buffer tank which in turn supplies hydrogen to the engine on demand. When the tank's pressure exceeds a predetermined level, the electrodes are separated so that hydrogen generation is interrupted. As the pressure drops to a certain level, the aluminum wire is again fed against the aluminum drum.

Ken Rasmussen: Water-to-Energy Electrolysis Process

Ken Rasmussen and his team have been working on a water-to-energy electrolysis process that turns out to have similarities to that of Professor Kanarev. Both use a pulsed signal, and both were seeing similar performance rates. Kanarev holds multiple patents, and is widely published.

Their work ceased after a member of the research team was threatened at gunpoint on 16 May 2006. Unknown to Rasmussen, his associate had faced a violent confrontation with 4 young to middle-aged white males in black suits driving a late model black Lincoln Town Car.

Shoving Glocks and Mac-10s in his face at a rural intersection, they told him extensive details about his family and threatened lives of him, family and all associates if he didn't stop work on the process immediately and NEVER go to the authorities. His associate, now scared for his own life and that of his family, complied. But similarly to Bill Williams' case (see below), when happy people start acting silent and paranoid, friends get suspicious.

In the good old days, big business bullies offered lots of money to buy somebody out and eliminate the competition. Stanley Meyer claimed before his suspicious death that he refused an offer of a billion dollars from Arab oil interests if he would stop work on his electrolysis process. (Meyer received at least eight patents in addition to US Patent 4,389,981 relating to hydrogen and oxygen gasses extracted from water for fuel.)

But to date, NOBODY has offered Ken's company a dime for their "yet bench top" technology. BUT somebody HAS threatened to KILL THEM. Would any skeptic out there care to explain that to Ken? Ken had been in discussion with several pre-screened, suitable investors, who were waiting on Ken's company to fix a final detail before showing them a live demonstration.

Enormous amounts of personal information thrown in their face behind the guns proved to Ken NONE of the prospective investors had anything to do with the violence we experienced. These thugs knew things Ken DIDN'T EVEN KNOW. Their boss has digital cell phone tapping technology at the very least. Other details were probably obtained by wire tapping neighbors and friend's phones too.

For any of Ken's previous business contacts reading this, please excuse the delay. The lives of Ken and his associates have been directly threatened if they were to complete the item they were intending to demonstrate. All progress is stopped.

Given the nature of oil or banking history, who do you think paid these hired gunmen to do the dirty work? Ken would appreciate some solid leads. Ken has to admit, oil has become intertwined with both banking and government over the years; so unofficial policies may have changed.

For more energy invention suppression details, see Ken's web site
<http://www.commutefaster.com/klooz.html>.

Bob Boyce: Brown's Gas Carburetor

Bob Boyce built a carburetor using hydrogen and oxygen previously split using proper frequencies. See http://www.greaterthings.com/News/Tilley/testimonials/related/Bob_Boyce.htm.

From: "Bob Boyce" <theghost@realmcity.com>
To: <sterlingda@greaterthings.com>
Sent: Monday, October 07, 2002 8:38 PM
Subject: GTcontact

Hello there

I just read your response to the message from someone asking why you're promoting a fraud (Tilley), and I must commend you on your response. There are a lot of closed-minded and narrow-minded people out there, most of whom were highly educated in traditional schooling methodology taught at most of the universities and colleges throughout the world. They get this doctrine shoved down their throats that if it's not documented in books and/or upheld by popular theory, then it's just not possible. Any attempt to demonstrate such technology usually falls on deaf ears and blind eyes because they refuse to adjust their thinking to accept that maybe something may be possible after all.

I learned the hard way about how society treats those that dare to do something different. I'm not seeking publicity or recognition for any research I did, just wanted to privately relate my experiences with you and ask that you please not publish or share this with anyone. (See link above. Sterling Allan must have subsequently obtained Boyce's permission to publish his story. Gary Vesperman)

I had an electronics business down in south Florida where I owned and sponsored a small boat race team through my business starting in 1988. We had a machine shop out back of my business for doing engine work, and I worked on engines for other racers and a local mini-sub research outfit that was building surface running drone type boats for the U.S. Government's Drug Enforcement Administration (DEA).

I delved into hydrogen research where I was building small electrolyzer type units that used distilled water mixed with an electrolyte. I would then resonate the plates for optimal conversion efficiency.

I discovered that with the right frequencies, I was able to generate monatomic hydrogen and oxygen, which when recombined, produces about 4 times the energy output of normal diatomic hydrogen and oxygen molecules since the process of combustion does not have to break apart the molecules first before recombining into water vapor. Diatomic hydrogen requires about 4% to air to produce the same power as gasoline, while monatomic requires slightly less than 1% to air for the same power.

The only drawback was storage at pressure causes the mono-atoms to start joining into diatomic pairs, and the mixture weakens, so it must be produced on-demand and consumed right away. I used modified LP carburetors on the boat engines to deal with using vapor fuel. I even converted an old Chrysler with a slant six engine to run on the hydrogen setup and we tested it in the shop.

I never published anything of what I was working on, and we always stated that our boats were running on hydrogen fuel, which was allowed, to avoid any controversy at the races. It wasn't until many years later that I found out what I had stumbled upon was already discovered and known as "Brown's Gas", and there were companies out there selling the equipment and plans to make it.

I had never tried to market anything, but I was plagued with trouble ever since I did the conversion to the old Chrysler and did a few test runs on it in the shop. My shop, which had never had any major crime problems before, suddenly was getting broken into, and pieces of equipment related to the hydrogen project were getting vandalized or stolen. I thought it might be that one of the guys that worked for me might have leaked something to someone and they were trying to either steal the technology or stop me from working on it. I ended up shutting down the research, getting out of it all, converting the boat engines back to racing fuel and selling off the race boats. The break-ins stopped, and I had no further trouble up until I totally closed the business and retired in 1991.

I was struck by lightning in 1995 and in 1997 I moved out of Florida, the lightning capital. I am now crippled with arthritis (which is common amongst lightning strike survivors), and recently I developed congestive heart failure/pulmonary edema. I may be weak in body, but I am determined to try to stay as active as I can. I am currently stripping down an old 1984 Dodge Aries with only 29K original miles so I can convert it over to electric operation.

I have been seeking all information I can find to be able to apply this unique charging arrangement that Tilley is using and to find out what type of electric motor would be best to use with it. I'm in the eastern TN area in the mountains so it must have enough power to climb the uphill grades and hopefully be able to regenerate on the downhill grades. So far I have found very little information on this. Any help you could provide to steer me in the right direction would be appreciated.

Thank you,
Bob Boyce

Stanley A. Meyer: Water Fuel Cell-Powered Car

Stanley A. Meyer invented a water fuel cell, which is not to be confused with the well-known fuel cells using membranes, etc. Meyer's device is supposed to break water into hydrogen and oxygen gases using less energy than that present in the bond itself. Furthermore, ordinary tap water requires the addition of an electrolyte such as sulphuric acid to aid current conduction; Meyer's cell functions at greatest efficiency with pure water.

More precisely, Meyer claimed his super-efficient electrolysis process produces 700% more energy than it consumes (for instance, by connecting it to an engine that would burn the hydrogen back into water) without raising the temperature of the water. Meyer assembled a car prototype powered by a water fuel cell.

Meyer's water fuel cell consists of stainless steel plates arranged as a capacitor – with pure water acting as the dielectric. A rising staircase of direct current pulses is sent through the plates at roughly 42 kilohertz, which is claimed to play a role in the water molecules breaking apart with less directly applied energy than is required by standard electrolysis. The mechanism of this reaction is undocumented.

Using his super-efficient hydrogen separator, Stanley Meyer claimed he could drive a water fuel cell-powered car from California to New York averaging 100 miles per gallon of water.

Meyer has demonstrated his fuel cell device before Professor Michael Laughton, Dean of Engineering at Mary College, London, Admiral Sir Anthony Griffin, a former controller of the British Navy, and Dr Keith Hindley, a UK research chemist. According to these witnesses, the most startling aspect of the Meyer cell was that it remained cold, even after hours of gas production as his system appeared to operate on mere milli-amperes, rather than the amperes that conventional electrolysis would require. The witnesses also stated:

"After hours of discussion between ourselves, we concluded that Stan Meyer did appear to have discovered an entirely new method for splitting water which showed few of the characteristics of classical electrolysis. Confirmation that his devices actually do work come from his collection of granted US patents on various parts of the WFC system. Since they were granted under Section 101 by the US Patent Office, the hardware involved in the patents has been examined experimentally by US Patent Office experts and their seconded experts and all the claims have been established."

Meyer received at least eight patents in addition to US Patent 4,389,981 relating to hydrogen and oxygen gasses extracted from water for fuel. The granting of a US patent under Section 101 is dependent on a successful demonstration of the invention to a Patent Review Board.

U.S. Patent 5,149,407: Process and apparatus for the production of fuel gas and the enhanced release of thermal energy from such gas

U.S. Patent 4,936,961: Method for the production of a fuel gas

U.S. Patent 4,826,581: Controlled process for the production of thermal energy from gases and apparatus useful therefore

U.S. Patent 4,798,661: Gas generator voltage control circuit

U.S. Patent 4,613,779: Electrical pulse generator

U.S. Patent 4,613,304: Gas electrical hydrogen generator

U.S. Patent 4,465,455: Start-up/shut-down for a hydrogen gas burner

U.S. Patent 4,421,474: Hydrogen gas burner

U.S. Patent 4,389,981: Hydrogen gas injector system for internal combustion engine

"It Runs on Water" is a video with Stanley Meyer demonstrating the water fuel cell in a car. Meyer claimed that he could run a 1.6-liter Volkswagen Dune Buggy on water instead of gasoline.

The basic problem with Meyer's invention, as reliably reported by Eugene Mallove in an Infinity Magazine article (see <http://www.rexresearch.com/meyerhy/meyerhy.htm>), is that he had never consented to conclusive tests. Skeptics point out that electrolysis of water, as explained by chemistry textbooks, requires more energy to break the hydrogen-oxygen bond than is regained by burning the two gases. Nonetheless Meyer's supporters suggest it is worthwhile to try to successfully replicate his process.

Stanley Meyer died after eating at a restaurant on March 21, 1998. Coroner William R. Adrion's autopsy report states that "Decedent supposedly at lunch with N.A.T.O. officials at a Cracker Barrel diner. The group made an opening toast with cranberry juice, immediately after which, decedent ran outside followed by his brother, then vomited violently and told his brother that he had been poisoned."

At the time of Meyer's death this writer, Gary Vesperman, sent out an email explaining that there is a type of stroke in the base of the brain that matches his brother's description of how Meyer died. The victim immediately becomes highly aggravated for a fraction of a minute or so. After the brain soaks up too much blood, its oxygen flow is shut down and the victim then dies.

Meyer's unusual death and its suspicious timing and circumstances understandably cause offerings of conspiracy theories regarding the possible poisoning of his cranberry juice by the oil companies and the U.S. Government. It apparently has not been verified who were with Meyer in the restaurant and exactly what they were celebrating.

The discussion below of Stanley's legal hassles is from <http://www.waterfuelcell.org/moreinfo.html>. If true, it cites more than one instance of intentional tampering with judicial due process – doubtless to discredit his water-fueled car invention. Either Stanley Meyer's water fuel cell did not in fact achieve his performance claims, or the United States federal government and Ohio state government should instead have been supporting Stanley's research.

Fraud charges:

It failed to work during a required demonstration of the water-fueled car in a 1990 court case. An Ohio court found Stanley Meyer guilty of "gross and egregious fraud" in a case brought against him by disgruntled investors. The court decided that the centerpiece of the car, his water fuel cell, was a conventional electrolysis device, and he was ordered to repay the investors \$25,000.

However, in their 1 December 1996 issue, the London Sunday Times published an article entitled "End of Road for Car that Ran on Water" by Tony Edwards. It upheld the court case, stating that three "Expert Witnesses" were not impressed and decided that the WFC was simply using conventional electrolysis. It stated Stan Meyer was found guilty of "gross and egregious fraud" and was ordered to repay the investors their \$25,000. It implied that Michael Laughton, professor of electrical engineering at Queen Mary and Westfield University, London was due to examine the car, but was not allowed to see it.

However, not mentioned was that this occurred in 1990 and that the WFC Water Fuel injector tech-base was still under U.S. National Security Review as in accordance to U.S. Patent Law and not available for public viewing. Also not mentioned were the many WFC patents, verified laboratory and university testing that supports the basis of WFC technology nor was the WFC appeal filing to dismiss Judge Corzine's ruling due to judicial default and other relevant information.

On 18 October 1995, a pretrial deposition hearing to inspect the WFC Dealership demonstration units (Variable-plate Electrical Polarization Process (VIC) Fuel Cell and Rotary Pulse Voltage Frequency Generator Tubular-Array Fuel Cell) was held in the office of the plaintiff's attorney, Robert Judkins. Present were the plaintiffs, their attorneys, plaintiffs expert witness, Michael Leverich (Electronics Engineer), Stan Meyer, Dr. Russel Fowler, WFC witness and defense attorneys Judge Roger Hurley and James Detling, as well as a deposition recorder.

During the deposition, Attorney Judkins attempted to have the WFC dismantled prior to implementing proper test procedures, which Stan Meyer refused. Michael Leverich confirmed that his initial measurements of the WFC Fuel Cells showed that it operated exactly as the WFC documentation stated it should, as so recorded on WFC Deposition Video Tape.

However, he then added an unknown white substance (powder) for additional testing. Stan objected to this, since the WFC Fuel Cell uses plain tap water and does not require a chemical additive. The plaintiffs also admitted that, during their observances at WFC Dealership Seminars, tap water was always used without any chemicals added to the water. Despite Stan's objection, plaintiff measurements were taken of this chemicalized water-bath and recorded. This illegal act of tampering with WFC Evidence of Records was witnessed by WFC Cameraman, Dr. Russ Fowler, and all others who attended Plaintiffs Deposition To-Test.

In 1996, Stan Meyer gave oral testimony before the court demonstrating the WFC Fuel Cell "Mode of Operability" by using the Voltage Intensifier Circuit (VIC) to produce voltage of opposite polarity to separate and disassociate the water molecule into its component gases, hydrogen and oxygen. However, the court audio sound recording equipment seemed to malfunction and was switched off. Judge Corzine said proceedings should continue without it. This was a violation of judicial protocol, since the recording system is used to verify testimony given during the trial and as such becomes "Evidence of Records."

After his oral testimony, Stan expected Attorney/Judge Hurley to start bringing forth WFC witnesses and counter arguments. Instead, Attorney/Judge Hurley spoke up, stated he had to leave for a pre-planned vacation and said that there was no more testimony to be given and waived the right of the defendant to give a case summary of the WFC facts brought before the court. Stan Meyer immediately stated he would protest, and Judge Corzine ended the hearing.

Stan wrote a "Request to Retract" fax-letter to the Sunday Times on 2 December 1996. He attached WFC documentation on the filing with the Disciplinary Counsel. He further stated that Judge Corzine had no right to turn off the court audio sound recording equipment, nor to rule against U.S. Patents, or overrule Government and University lab reports in the public domain concerning the mode of operability of the WFC Technology. Furthermore, Stan pointed out that no US Federal "Cease and Desist" order has ever been issued against WFC since the WFC Technology has been fully legalized under US Patent Security Law 35 USC 101 and other US Federal regulatory Acts. His final statement was that "WFC is here to stay" in contradiction to the Sunday Times statement.

Stanley Meyer's twin brother Stephen Meyer has warned per his email below that the above is not wholly true. Attempts by Gary Vesperman to obtain Stephen's corrections have been unsuccessful. Stephen's web site www.hydrotechgroup.com still does not include any information which could clarify Stanley's apparent suppression troubles and suspicious death.

From: Stephen Meyer [mailto:appli-tech@msn.com]
Sent: Wednesday, March 14, 2007 12:18 AM
To: altenergy2007@gmail.com
Subject: RE: Fwd: Terry Sisson on Stanley Meyer; Xogen

Hi Guys, go to my web site www.hydrotechgroup.com

Oh! Gary Vesperman's write up is really bad and does not reflect true events about Stan and is completely out of context in many areas. It is my hope that this article is corrected before publishing. Stephen Meyer his twin...

Stephen Meyer
Appli-Tech@msn.com
Office Phone: 1.612.374.1609

Frank Roberts: Water Car

Frank Roberts is active on the Yahoo water car chat board. He was gone for a while. Then he showed up with this story that was emailed to the Yahoo water car chat board on October 4, 2005. His location is unknown. He is trying to rebuild what he had from memory, but is having a difficult time at it.

Subject: I'm Back

Hello to everyone in the water car group from Frank Roberts

To the older members of the group I say hello; to the newer ones I'm a member who had a working water car and was preparing to go cross country and see some of the members, etc. My last message was about a year and a half to two years ago, I'm not sure. At that time I reported to the group that my office was invaded by authorities and all my paper work was photographed and some taken. My van that I was working on for a carbureted vehicle was burned in the middle of the night, and my fuel injected Taurus was taken. I suffered a chemically induced stroke and am now in a nursing home. I have lost part of my long term and short term memory. My paralysis is pretty much gone, and I now have internet access in my room. I have a lot of catching up to do on the progress of the group. I no longer have my lab and all its resources but will try to contribute from experience and expertise. I look forward to hearing from the group. It's good to be back on line.

Best Wishes,
Frank Roberts

Andrew Leech (Reporter): Suspicious Deaths of Inventors in Australia

From: Andrew Leech
To: sterlingda@pureener gysystems. com
Sent: November 02, 2006
Subject: BJ Proton Cell

Hello, I'm Andrew Leech from Floppy Sponge Automation in Melbourne, Australia. I've been a keen experimenter in a number of energy areas for some time now, both privately and through FSA. I'm especially interested in the Joe Cell and could help in a setting up a reliable demonstration model of the Proton Cell variant as well as helping to spread and promote the technology... [Deleted]...

I personally believe if we can have development undertaken relatively quietly through supportive channels such as PES Network, and produce a number of engines running this way privately, then distribute them quietly over a large area (Colin at FSA has numerous contacts right across Australia, Malaysia and Taiwan), when it is announced publicly it will already be out there too widely to be hushed up. I've heard reliable confirmations of suspicious deaths on inventors in Australia, so don't want to take the threat lightly. If we can have a large group of replications all announced simultaneously we have a chance of getting around that threat... [Deleted]...

Regards,
Andrew Leech
Floppy Sponge Automation
12 Birch Ave Dandenong Nth,
Vic, Australia 3148
<http://www.floppyspongeonline.com>

Gerald Schaflander: Solar-Produced Hydrogen Turned into Liquid Hy-Fuel

During the 1970s Gerald Schaflander, with the Solar Electric Power Corporation of Culver City, California, and with financial help from some friends, built a pilot production facility in Menlo Park, California. Schaflander had developed gallium aluminum arsenide/gallium arsenide solar cells and was producing hydrogen with the cells' output, which was then chemically turned into a liquid fuel called Hy-Fuel. The fuel could be utilized in cars or trucks. It was not used as a liquid but as hydrogen gas, by cracking it and feeding the recovered hydrogen gas through a special carburetor.

Schaflander and his scientists had found from their own experiments that silicon will not work. It deteriorates in the desert heat and becomes only about 2 percent efficient. Having found silicon cells unsatisfactory, Schaflander's scientific team perfected gallium aluminum arsenide/gallium arsenide solar cells. They also found a way to produce such cells on a semi-automated basis, slashing costs. Some of the photovoltaic cells used to power NASA spacecraft cost as much as \$5 a watt to produce; Schaflander's automated process reduces the cost to 27 cents a watt.

The prototype of a commercial Hy-Fuel production facility on 1000 acres of leased land near Yuma, Arizona comprised of two lines of slanted solar panels that gather the sun's rays. Behind them were rounded, cylindrical "parabolic concentrators" that intensify the energy collected by the panels and focus it on photovoltaic cells. The cells produce electrical energy, and electrolysis then splits the hydrogen atoms from water. The hydrogen gas so produced is turned into a stabilized liquid similar to ammonia. The liquid Hy-Fuel is fully substitutable for fuel oil or for gasoline in automobiles, tractors and other vehicles. These are connected by wires and tubing to a small pumping station and rounded storage tanks.

This Yuma solar energy farm was the creation of Consumers Solar Electric Power Corporation of Culver City, California. On July 1, 1980 the firm had its first commercial tank load of 250 gallons of Hy-Fuel ready for delivery at only 50 cents a gallon, and was producing more Hy-Fuel. With an option on leasing another 10,000 acres and given financial support, the facility could be cranked up to full production on the entire 11,000-acre tract in six months. According to Stephen Wright, president of Consumers Solar and its scientific expert, with eight hours of continuous Arizona sunlight a day, such an energy farm would produce 3.8 million gallons of Hy-Fuel a day.

Hy-Fuel production could be increased considerably by substituting Soviet-developed high-efficiency crystal lattice solar photo-voltaic cells (see below).

A unique co-generation system would turn the waste heat produced by the process into low-pressure steam that could be used to drive turbines producing electric power for the utilities. Schaflander estimates that his company's energy farm could produce electricity at a capital cost of \$690 per kilowatt. The capital-cost figures for fossil-fueled and nuclear-powered plants are \$1,200 and \$1,400 per kilowatt, respectively. Note that these are 1980 figures.

Conversion of present engines to hydrogen fuel can be accomplished in a few hours. The process involves removing the gasoline tank and installing a new tank capable of holding the slightly heavier hydrogen hydride mixture. A "cracker" would be positioned in the front of the car next to the motor to convert the ammonia-like Hy-Fuel into a gas mainly composed of hydrogen. This gas would flow into a new carburetor to which a fuel regulator is attached. Certain other solenoid valves and vacuum and pressure switches would be wired into the car. The hydrogen-powered vehicle would then be ready to roll.

There is no question that Hy-Fuel works. Schaflander had converted eighteen Chevrolet engines to his revolutionary fuel and had driven them across the continent, getting about twenty miles to the gallon. Tests show that Hy-Fuel's emissions are far cleaner than gasoline, obviating the need for costly emission devices such as catalytic converters which poison roadsides with toxic platinum dust particles. Hy-Fuel is also more stable than gasoline – far less likely to explode in case of an accident.

All this was developed without a dime of federal tax money. In 1978 Schaflander challenged a U.S. House of Representatives Energy Committee to let him test his device on a selected fleet of U.S. Government cars. Although he asked for no up-front money and had promised, "If we can't deliver, we don't get paid," the U.S. Government turned him down.

Schaflander was harassed by oil company-inspired opposition, including telephoned death threats to his 79-year-old mother and quite "official" opposition from the U.S. Postal Service. His company was essentially driven out of business. The whole story is described by a long article that was published in the October 4, 1980 issue of *The Nation*. There is much detail on the suppression, but little data on the actual process used. (Source: "The Hydrogen Alternative: Somebody Doesn't Like Hy-Fuel" Fred J. Cook, *The Nation*, October 4, 1980, pp. 305-311)

John Andrews: Water-to-Gasoline Additive

In May 1974 John Andrews, a Portuguese chemist, demonstrated a water-to-gas additive before Navy officials which allowed ordinary water to be added to gasoline without decreasing the combustibility of the gas and would drive the cost of gasoline down to 2 cents per gallon. When Navy officials finally went to his lab to negotiate for the formula, they found Andrews missing and his lab ransacked.

Phil Stone: Engine Runs on Water

During the 1950's, Phil Stone, a retired Florida college physics professor, had a patent for a device to run an engine on water. The U.S. Government then unfairly classified his patent, and this prevented him from developing his device. The United States Patent Office has classified 5000 patents, an unknown number of which relate to energy. Their helplessly shackled inventors will be jailed for 20 years if they work on, develop, make, sell, write about, or even simply talk about their inventions.

Bill Williams: Joe Cell-Powered Truck

(Excerpted from http://pesn.com/2006/04/13/9600257_Bill_Williams_threatened/, written by Sterling Allen, Pure Energy System News)

Joe Cell Truck Builder Threatened, Destroys Plans --- After announcing that he had successfully built a truck that runs on Joe cell technology, drawing energy from water and orgone energy, Bill Williams said he was approached by two men who demanded that he stop his research, threatening him with dire consequences if he didn't. Others are keeping it alive.

USA -- A couple of weeks ago, Bill Williams told a discussion list that he successfully ran his truck on a device known as the Joe cell. The power was far greater than the regular combustion engine -- and the energy was free.

The Joe cell is said to draw on orgone energy. The fairly simple device uses electrically charged water as the "gate" or medium through which the aetheric energy is drawn from the surroundings and transferred to the automobile engine.

Bill had posted images and rough descriptions, and was in the process of disclosing in greater detail how he had accomplished this, when he was confronted last week by two unidentified individuals who told him to cease all of his alternative energy work or there would be dire consequences.

On April 11, 2006, Bill gave the following account of what happened just a few days after announcing his success.

"I was on my way home Thursday last week [April 6, 2006] and was about 3 miles from the ferry project. I stopped to check the post connection point on the Cell. I was standing in front of my truck, and this late model 2005 or 2006 Ford Explorer pulled up and parked diagonally in front of my truck.

"The driver got out of the rig and walked around in front of their rig and approached me. At about the same time, the passenger opened his door.

"The driver stated that they wanted me to stop working on all forms of alternative energy. He also stated that we know everything about me, my family, and all my projects past and present.

"At about that time the passenger reached and held up a file that was about 2 or so inches thick. He opened it up and showed me telephone transcripts, emails, messages from the groups that I had belonged to.

"They knew where my kids worked, the times they are at work; also my wife's working hours, my grandkids' school, etc. They knew everything.

"The driver said that if I did not stop working on this (he then opened up the left side of his jacket and showed his weapon that was holstered) that there would be other consequences.

"He also stated that he wanted me to post that I was no longer working in this field and to destroy all my work, i.e. cells, drawings, lab journals, everything!

"At that point he walked around and got into the rig. I shut the hood and got the hell out of there. They followed me for about 2 miles and then must have turned off somewhere."

After a few days of contemplation, Bill decided to abide by the demands of those who threatened him. He destroyed the cell and all data and documentation and disabled the website on which he had posted plans. Four days after that incident, Bill wrote the following message to the group:

"I thought I was strong but when illness to the family comes into play, I have failed. I am truly sorry. I will not be working in any form of alternative energy field anymore. [...]"

"I destroyed my device tonight along with my written data and lab notes as per specked out."

Thomas E. Bearden, Ph.D.: Motionless Electromagnetic Generator

In March 2002, Stephen L. Patrick, Thomas E. Bearden, James C. Hayes, Kenneth D. Moore, and James L. Kenny received U.S. Patent No. 6,362,718 for the Motionless Electromagnetic Generator (MEG), a scalar energy device that produces over-unity (AKA "Free Energy"). In conventional terms, the device has a Coefficient of Performance (COP) of 5.0.

Tom Bearden offers this brief description of how the Motionless Electromagnetic Generator works:

First the MEG uses a proven technique (the Aharonov-Bohm effect) which the nanocrystalline core furnishes freely. Recall again that memory characteristics of materials is one thing (from Prigogine) that allows direct and intentional violation of the second law of thermodynamics.

This free initiation of the Aharonov-Bohm effect in turn engineers the surrounding vacuum outside the core, by adding extra energy density to it in the form of a curl-free A-potential. Sharp perturbation (the rise time and decay time) of the input pulses that perturb the core-confined B-field, also perturb that section of the A-potential still in the core, so that a disturbance of dA/dt passes outside the core and on outward into the external altered vacuum with its extra energy.

There the equation $dA/dt = -E$ applies, and so in the external activated space real E-field energy pulses are formed which radiate back into the MEG core area due to the minus sign. This means they travel in opposite direction to the outward-traveling perturbation dA/dt .

Hence this shows the receipt by the MEG of excess electromagnetic energy freely transmitted back into it from the external altered space, which means that the MEG gets considerable excess E-field energy input from the surrounding vacuum. By adjusting perturbation rise times, etc., one can adjust the magnitude of the E-field energy pulses returned to the MEG from the external vacuum environment. Thus the MEG is an asymmetric Maxwellian system of the kind arbitrarily discarded by Lorentz in 1892, and still arbitrarily discarded by present EE departments, professors, and textbooks.

Comprised of strong magnets, coils, nanocrystalline cores, and a controller unit with the electronics, the MEG would be able to power an electric vehicle without battery recharging by the power grid.

For a detailed explanation (including clear drawings) of how the MEG works, see Dr. Bearden's paper "Engineering the Active Vacuum: On the Asymmetrical Aharonov-Bohm Effect and Magnetic Vector Potential A vs. Magnetic Field B." This paper is available at the link <http://www.cheniere.org/techpapers/On%20the%20Aharonov-Bohm%20Effect1.doc>.

In that paper, Dr. Bearden points out that electrical engineers – and even the usual physicist – are unaware of how an electrical circuit is actually "powered". For an explanation and a diagram showing (1) where the energy pouring from the generator terminals actually comes from and how, and (2) why the normal electromagnetic systems self-enforce $COP < 1.0$ by killing their own source of this free energy flow faster than they power their loads, see Figure 2, Operation of a Symmetrical Electrical Power System, in the foregoing paper.

Note that there are more than 20,000 papers in the hard literature on the Aharonov-Bohm effect used by the MEG, and that Aharonov-Bohm effect is quite well proven in physics, both theoretically and experimentally. But the effect does not even exist in the electrical engineering model! Since the MEG is deliberately designed to use that effect, the operation of the MEG can only be understood by one who understands the Aharonov-Bohm effect, its generalization to the Berry phase, and the further generalization to the geometric phase. Specifically, any electrical engineer – using only mainstream electrical engineering theory – can not and will not be able to understand the MEG's operation.

There are several sources of the special nanocrystalline cores which contain the "B" field needed to effectively operate the MEG. Dr. Bearden reports in <http://www.cheniere.org/correspondence/020504.htm> that the nanocrystalline cores originally were purchased as Metglas amorphous alloys from the former Division of Honeywell that made them. He believes that Honeywell actually got them from India. That Division of Honeywell was just about demolished by General Electric (GE) in its sudden attempted buyout of Honeywell (vetoed by the European community). GE suddenly moved it across country, wiping out half its staff and scientists, etc. Then GE withdrew. With the Division in shambles, Honeywell then sold it off to Hitachi. He doesn't know what's happened since then

(Sources: <http://jnaudin.free.fr/meg/megv21.htm>, http://peswiki.com/index.php/Site:LRP:Motionless_Electromagnetic_Generator, and http://peswiki.com/index.php/Site:LRP:The_Suppression_of_the_M.E.G._by_General_Electric. For additional information, order Dr. Bearden's books and videos from www.cheniere.org.)

Thomas E. Bearden, Ph.D. (Reporter): J.P. Morgan Emasculated Electrical Engineering Theory

Thomas E. Bearden, Ph.D., in an August 5, 2007 email to Gary Vesperman and three other energy researchers, offers an insight into what really happened more than a century ago when the foundations were laid for eventually providing electricity to billions of people. In the 1880s and 1890s Nikola Tesla (backed by Westinghouse, a decent man) destroyed the great dreams and preparations of John Pierpont Morgan and Thomas Edison for moving the world into DC electrical power, requiring a DC power plant about every two miles, for example. Instead, with the support of Westinghouse, Tesla gave the world the much more practical AC power systems, where the electric power is much more easily transmitted over transmission lines to distant destinations, without the serious losses as DC transmission entails.

This and Tesla's clearly enunciated intention to give the world clean free electromagnetic energy from the "active medium" itself, brought J. P. Morgan to regard Tesla as his mortal enemy, to be destroyed or curtailed at any cost. Then with the near-bankruptcy of Westinghouse, the only person Tesla could turn to for financing was J. P. Morgan himself. The university attended by Morgan in Germany was the heart of the Hegelian method, which uses the technique of funding and backing one's own enemies as well as one's supporters, to gain influence over – and eventually control of – both. So when Tesla approached Morgan for financing, Morgan readily agreed – but only after Tesla signed over a 51% controlling interest in his (Tesla's) patents.

Tesla did so, and that put control of Tesla, his patents, and his great new project directly under Morgan's control. Morgan then simply advanced Tesla only part of the money needed for his tower project, and when Tesla predictably ran out of funds, Morgan simply refused to give him any more. Very shortly this completely crushed Tesla, reducing him to effective bankruptcy, living in a hotel room, and existing on the patience and literally the charity of others. Tesla never recovered from this blow, but eventually died in that hotel room. Many of Tesla's inventions – such as radio – were stolen from him. After Tesla expired in 1943, Marconi's inventions – e.g. – were officially declared as take-offs of Tesla's inventions by the U.S. Supreme Court.

Isn't it significant that essentially none of our scientific history books credit Tesla for being the actual inventor of the radio, but instead give credit to the theft of Tesla's radio discoveries by Marconi? What does that say about the "official" ethics of the scientific community?

But Morgan was not only ruthless, but thorough. In the latter 1880's, etc., when Tesla was gung ho to give us free energy from the active medium, Morgan also anticipated the future of this "energy freely extracted from the active medium" problem that had suddenly risen in Tesla's work. At the time, there were less than three dozen "electrodynamacists" in the entire world. Maxwell had died in 1879, and those who despised quaternions (Heaviside, Hertz, Gibbs, etc.) immediately chopped Maxwell's 20 quaternion-like equations in 20 unknowns into a very much smaller vector subset containing only four equations. Maxwell's theory was never accepted during his own lifetime, but only begrudgingly and very slowly after (eight or nine years after Maxwell's death) Hertz performed speed-of-light measurements showing Maxwell was correct.

The real Maxwell theory has never been routinely taught in electrical engineering, which contains only a pale shadow of it. For the full Maxwellian theory, see James Clerk Maxwell, "A Dynamical Theory of the Electromagnetic Field," Royal Society Transactions, Vol. CLV, 1865, p 459. Read Dec. 8, 1864. Also in The Scientific Papers of James Clerk Maxwell, 2 vols. bound as one, edited by W. D. Niven, Dover, New York, 1952, Vol. 1, p. 526-597. Two errata are given on the unnumbered page prior to page 1 of Vol. 1. In this paper Maxwell presents his seminal theory of electromagnetism, containing 20 equations in 20 unknowns. His general equations of the electromagnetic field are given in Part III, General Equations of the Electromagnetic Field, p. 554-564. On p. 561, he lists his 20 variables. On p. 562, he summarizes the different subjects of the 20 equations, being three equations each for magnetic force, electric currents, electromotive force, electric elasticity, electric resistance, total currents; and one equation each for free electricity and continuity. Most electrical engineers have never even read Maxwell's theory, even though they were falsely informed that they had studied (and mastered) "Maxwell's theory."

Free download of that original Maxwell theory can be made directly from the ZPE website, at links

http://www.zpenergy.com/downloads/Maxwell_1864_1.pdf
http://www.zpenergy.com/downloads/Maxwell_1864_2.pdf
http://www.zpenergy.com/downloads/Maxwell_1864_3.pdf
http://www.zpenergy.com/downloads/Maxwell_1864_4.pdf
http://www.zpenergy.com/downloads/Maxwell_1864_5.pdf
http://www.zpenergy.com/downloads/Maxwell_1864_6.pdf
<http://www.zpenergy.com/downloads/Diagram.pdf>

Barrett (one of the co-founders of ultrawideband radar) comments on the curtailing of Maxwell's theory as follows:

"[T]he A field [for the potentials] was banished from playing the central role in Maxwell's theory and relegated to being a mathematical (but not physical) auxiliary. This banishment took place during the interpretation of Maxwell's theory... by Heaviside... and Hertz. The 'Maxwell theory' and 'Maxwell's equations' we know today are really the interpretation of Heaviside... Heaviside took the 20 equations of Maxwell and reduced them to the four now known as 'Maxwell's equations'. [Terence W. Barrett, "Electromagnetic Phenomena Not Explained by Maxwell's Equations," A. Lakhtakia, ed., Essays on the Formal Aspects of Electromagnetics Theory, World Scientific Publishing, River Edge, NJ, 1993, p. 11.]

Actually it was worse than that! Heaviside hated potentials (which today we know are primary), thought they were mathematical conveniences only, and that they should be "murdered from the theory". Quoting from B. J. Hunt:

"In a letter to Oliver Lodge in 1893, Heaviside referred to his own work and stated that it represented '....the real and true 'Maxwell' as Maxwell would have done it had he not been humbugged by his vector and scalar potentials.' [B. J. Hunt, *The Maxwellians*, Ph.D. dissertation, The Johns Hopkins University, Baltimore, MD, 1984, p 317].

Heaviside also thought (as did all others at the time) that a thin material fluid ether filled all space, so that nowhere in all the universe was there a point where mass was absent. For that reason, the electrodynamicists – including Heaviside – thought there were force fields E and H in space, when today we know such electromagnetic force fields exist only in charged matter (matter is a component of force, by the equation $F = d/dt(mv)$). Quoting Feynman:

"...in dealing with force the tacit assumption is always made that the force is equal to zero unless some physical body is present... One of the most important characteristics of force is that it has a material origin..." [Richard P. Feynman, Robert B. Leighton, and Matthew Sands, *The Feynman Lectures on Physics*, Addison-Wesley, Reading, MA, Vol. 1, 1964, p. 12-2].

For a commentary on even the unsatisfactory condition of the original Maxwell's theory, Cornille states it this way:

"Even today, Maxwell's equations are given as granted, their validity being justified by experiments. In fact, there is no demonstration of Maxwell's equations from first principles since the mechanical approach used by Maxwell has been abandoned in favor of a new non-mechanical entity: the electromagnetic field. Of course, Maxwell's equation[s] can be obtained from a variational principle but they are derived from an action appropriately chosen in order to recover them. ... Maxwell's equations raise a certain number of fundamental questions which have not been answered in a satisfactory manner to date." [Patrick Cornille, "Inhomogeneous waves and Maxwell's equations," Chapter 4 in *Essays on the formal Aspects of Electromagnetic Theory*, Ed. A. Lakhtakia, World Scientific, 1993, p. 138-139.].

But it made no big splash, and the Heaviside severely truncated equations were "chosen" as the basis equations for the new "electrical engineering" that was beginning to be set up in a few universities here and there. Morgan apparently had the "new" equations (for the new electrical engineering being born) checked via group symmetry (adopted in 1870, so therefore well known by the very few leading electromagnetic scientists of the world at the time) to see if the "new" science/equations contained any of those "systems taking excess free energy from the active medium" – in short, containing any of Maxwell's asymmetrical systems present in the full Maxwellian theory. In short, Morgan was determined not only to suppress Tesla, but also to suppress any future "young Tesla" who might be stimulated to see and develop "free energy from the active medium" Tesla systems. The review of Morgan's scientific advisors was not good; the "new" and truncated Heaviside equations were still not totally symmetrical, which meant some of those dirty old asymmetric Maxwellian systems were still there.

Morgan, of course, just directed that it be "fixed". And Lorentz was the fellow chosen or arranged to do the job; in 1892, Lorentz arbitrarily symmetrized the Heaviside equations – just to "make them easier to solve algebraically", so the story went. He thereby firmly excluded all asymmetrical Maxwellian systems from the standard electrical engineering model, from its very birthing.

Lorentz was a great scientist in his own right, but also was fond of appropriating and using other people's work and taking credit for it himself. For example, the whistle was finally blown on this aspect of Lorentz, by the great electrodynamicist J. D. Jackson. See J. D. Jackson and L. B. Okun, "Historical roots of gauge invariance," *Reviews of Modern Physics*, Vol. 73, July 2001, p. 663-680. Even the symmetrical regauging used by Lorentz (and credited to him generally) was first done by Lorenz (without the "t"), as Jackson and Okun show.

To see the original Lorentz "suppression" paper applying symmetrical regauging, see H. A. Lorentz, "La Théorie électromagnétique de Maxwell et son application aux corps mouvants," [The Electromagnetic Theory of Maxwell and its application to moving bodies], *Arch. Néerl. Sci.*, Vol. 25, 1892, p. 363-552. [Also in H. A. Lorentz, *Collected Papers*, The Hague : Martinus Nijhoff, vol. 2, pp. 168-238, esp. p. 168.] This is the work that Lorentz cites later (in 1895) for his proof of the symmetrical regauging theorems (the two equations of symmetrical regauging).

This is what arbitrarily eliminated (from standard electrical engineering) the use of “Tesla” asymmetrical Maxwellian systems that do receive excess electromagnetic energy freely from the active medium – and thus can function at a coefficient of performance (COP) > 1.0 precisely similar to a windmill-driven electrical power system or a solar panel powered electrical power system. A real system with real losses will always have efficiency (total useful energy or work output divided by the total energy input from all sources) of less than 100%. But if it asymmetrically receives (freely or nearly freely) excess energy from its active environment, then its coefficient of performance (total useful energy or work output divided by the total energy input by the operator only) can permissibly exceed 1.0. No laws of nonequilibrium thermodynamics are violated, as are no laws of physics.

Two persons – Oliver Heaviside and John Poynting – independently and simultaneously discovered the flow of electromagnetic energy through space in the 1880s and early 1890s; before then, the concept does not appear in physics. Poynting only considered a very tiny part of the “total electromagnetic energy flow pouring from the generator terminals and flowing through space outside and along the external conductors (of the external circuit)”. That tiny part is the small fraction of the energy flow – the linear part – that gets diverged into the conductors to “potentialize and power up the electrons” and the external circuit. Heaviside also discovered a giant curled electromagnetic energy flow component in addition to the diverged little component. The nondiverged curled electromagnetic energy flow component is more than a trillion times greater in energy magnitude than the feeble Poynting component.

Well, again it would simply not do (in Morgan’s relentless view) for our young future electrical engineers to know and be taught that the generator actually outputs more than a trillion times as much electromagnetic energy output as the mechanical energy input one furnishes to crank the shaft of the generator. That would mean it would just be a matter of time before some young budding genius would discover how to trick some of that giant curled Heaviside component into diverging into the conductors after all, thus producing Tesla “energy from the external active medium” systems after all.

So again, Morgan would have issued orders to “fix it!”

And so Lorentz was arranged once again to do the dirty work. In 1900 he stated that this giant curled Heaviside component “does nothing”, since it does not interact, and so it “has no physical significance”. And he arbitrarily just integrated the entire energy flow vector (containing both the diverged Poynting energy flow component and the usually nondiverged Heaviside giant curled energy flow component) around a closed surface assumed around any volume element of interest. Thereby Lorentz misinformed us that this nondiverged giant energy flow had “no physical significance” and taught us to just deliberately cancel it as a matter of course.

In his August 16, 2007 email to Gary Vesperman and Leslie Pastor, Thomas Bearden adds:

For additional rigorous mathematical demonstrations, see the following:

M. W. Evans et al., "Explanation of the Motionless Electromagnetic Generator with O(3) Electrodynamics," *Foundations of Physics Letters*, 14(1), Feb. 2001, p. 87-94. Quoting: “...the fundamental operational principle of the MEG is explained using a version of higher symmetry electrodynamics known as O(3) electrodynamics, which ... has been developed extensively in the literature. The theoretical explanation of the MEG with O(3) electrodynamics is straightforward: Magnetic energy is taken directly ex vacua and used to replenish the permanent magnets of the MEG device, which therefore produces a source of energy that, in theory, can be replenished indefinitely from the vacuum. Such a result is incomprehensible in U(1) Maxwell-Heaviside electrodynamics.”

M. W. Evans et al., "Explanation of the Motionless Electromagnetic Generator by Sachs's Theory of Electrodynamics," *Foundations of Physics Letters*, 14(4), 2001, p. 387-393.

M. W. Evans et al., "The Aharonov-Bohm Effect as the Basis of Electromagnetic Energy Inherent in the Vacuum," *Foundations of Physics Letters*, 15(6), Dec. 2002, p. 561-568.

T. E. Bearden, "Extracting and Using Electromagnetic Energy from the Active Vacuum," in M. W. Evans (ed.), *Modern Nonlinear Optics*, Second Edition, 3 vols., Wiley, 2001; Vol. 2, p. 639-698.

A quote of interest is: "This has led to one of the greatest ironies in history: All the hydrocarbons ever burned, all the steam turbines that ever turned the shaft of a generator, all the rivers ever dammed, all the nuclear fuel rods ever consumed, all the windmills and waterwheels, all the solar cells, and all the chemistry in all the batteries ever produced, have not directly delivered a single watt into the external circuit's load. All that incredible fuel consumption and energy extracted from the environment has only been used to continually restore the source dipole that our own closed current loop circuits are deliberately designed to destroy faster than the load is powered."

T. E. Bearden, "Energy from the Active Vacuum: The Motionless Electromagnetic Generator," in M. W. Evans (Ed.), *Modern Nonlinear Optics*, Second Edition, 3-vols., Wiley, 2001; Vol. 2, p. 699-776.

M. W. Evans, T. E. Bearden, and A. Labounsky, "The Most General Form of the Vector Potential in Electrodynamics," *Foundations of Physics Letters*, 15(3), June 2002, p. 245-261.

For a rigorous proof that removing Lorentz's 1892 arbitrary symmetrization of the Heaviside-Maxwell equations does indeed provide usable energy currents from the vacuum, see M. W. Evans et al., "Classical Electrodynamics without the Lorentz Condition: Extracting Energy from the Vacuum," *Physica Scripta*, Vol. 61, 2000, p. 513-517.

To see the horrible falsities (as pointed out by eminent scientists such as Nobelist Feynman) being taught in electrical engineering in all our universities, see my paper "Errors and Omissions in the CEM/EE Model," available at <http://www.cheniere.org/techpapers/CEM%20Errors%20-%20final%20paper%20complete%20w%20longer%20abstract4.doc>. This paper was favorably reviewed by the National Science Foundation; for the NSF letter see <http://www.cheniere.org/references/NSF%20letter%20Bearden.jpg>.

Here is a little exercise that is revealing to think about:

Take a common permanent magnet and sit it on the bench. Lay an electret across it so the E-field of the electret is at right angles to the H-field of the magnet. Then by the ordinary Poynting theory already accepted and contained in every basic electrical engineering textbook, that silly thing sits there and continuously pours out a steady Poynting stream of real electromagnetic energy flow S , given by $S = E \times H$.

The CEM/EE folks just shrug and walk away from that embarrassing problem. A typical comment is one by Buchwald:

"[Poynting's result] implies that a charged capacitor in a constant magnetic field which is not parallel to the electric field is the seat of energy flows even though all macroscopic phenomena are static." [Jed Z. Buchwald, *From Maxwell to Microphysics*, University of Chicago Press, Chicago and London, 1985, p. 44].

He states it, but does not pursue its implications at all.

Scientists such as Van Flandern do point out that a so-called "static" electromagnetic field is actually a nonequilibrium steady state system, comprised of internal parts in continuous and steady motion. Quoting Van Flandern:

"To retain causality, we must distinguish two distinct meanings of the term 'static'. One meaning is unchanging in the sense of no moving parts. The other meaning is sameness from moment to moment by continual replacement of all moving parts. We can visualize this difference by thinking of a waterfall. A frozen waterfall is static in the first sense, and a flowing waterfall is static in the second sense. Both are essentially the same at every moment, yet the latter has moving parts capable of transferring momentum, and is made of entities that propagate. ... So are ... fields for a rigid, stationary source frozen, or are they continually regenerated? Causality seems to require the latter." [Tom Van Flandern, "The speed of gravity – What the experiments say," *Physics Letters A*, Vol. 250, Dec. 21, 1998, p. 8-9].

So there is no problem at all in establishing as large a continual free electromagnetic energy flow as one wishes. Anywhere, anytime. Simply make a dipole, or crossed E and H dipoles, then leave it alone. As Nobelist Lee pointed out, when you have a broken symmetry then something virtual has become observable. In other words, any electromagnetic broken symmetry can and does absorb virtual energy from the vacuum, integrate it coherently into quantum sized particles (photons), and emit those real, observable photons at light speed in all directions. This process – the solution to the long-neglected “source charge problem” – is what produces the steady-state or “static” electromagnetic fields. Such fields are actually continuous, free flows of real, usable electromagnetic energy.

The entire “free energy from the vacuum” problem is simply this: Given incredible “free electromagnetic energy wind” available and automatically provided from every electromagnetic broken symmetry (dipolarity) in the universe, how does one build a proper asymmetric “windmill” to intercept and collect some of that real, free, continuous “electromagnetic energy wind energy” and then separately dissipate it in its loads to power them? All our electrical engineers think, design, and build only symmetrical windmills, which use half their freely collected electromagnetic energy to do nothing but destroy their own source dipolarity furnishing the free wind! The other half is used (in the forward emf region) to power the losses and loads of the external circuit.

So half the “freely collected” energy is normally used (in the EE’s symmetrical circuits and systems) to destroy the wind source itself, and the other half is used to power the external loads and losses. Well, to keep the wind flowing, we have to keep “restoring” the internal dipolarity (broken symmetry) of the generator as fast as it is being destroyed. That is what “cranking the shaft of the generator” actually accomplishes; it doesn’t send a single joule of energy directly out onto the external circuit or power line! Note that the rigorous definition of work is the change of form of energy. When we crank the generator shaft, we input mechanical energy, which once the generator rotates is changed (courtesy of Nikola Tesla!) into rotating magnetic field energy inside the generator itself. In turn, this rotating magnetic field energy is dissipated totally inside the generator, to force opposite charges apart and thus to produce that magic source dipolarity with its broken symmetry. The broken symmetry of this internal dipolarity then absorbs virtual state energy from the seething virtual state vacuum, and transforms it to real, observable photons (real, usable electromagnetic energy) which it continually pours out. It is this stream of real electromagnetic energy flow that pours from the terminals of the generator and along through space outside the external conductors.

A tiny portion of this giant energy flow (the Poynting component) is diverged into the conductors to “power up the electrons” and thus power the circuit. A huge curled giant Heaviside component remains, but (in any special relativistic situation) is not diverged, does not interact, and does nothing.

But the generator actually outputs more than a trillion times as much total electromagnetic energy flow (in both the feeble Poynting electromagnetic energy flow component and the accompanying giant Heaviside curled electromagnetic energy flow component) as the mechanical energy that we physically input to the shaft of the generator.

The knowledge of Heaviside’s giant usually-nondiverged energy flow component is what Morgan also had “scourged” from the theory by Lorentz in 1900, so that all the future electrical engineers would think that they only produce the diverged Poynting component of energy flow and nothing else.

Very good modern classical electrodynamicists continue to ignore any and all curled energy flow components accompanying the Poynting linear flow component. Quoting Jackson :

“...the Poynting vector is arbitrary to the extent that the curl of any vector field can be added to it. Such an added term can, however, have no physical consequences. Hence it is customary to make the specific choice ...” [J. D. Jackson, Classical Electrodynamics, Second Edition, Wiley, 1975, p. 237].

Let us comment: Jackson is quite correct so long as the situation remains special relativistic. In that case, vector analysis holds and the divergence of the curl is zero. The curled giant energy flow component thus does not diverge or interact with anything.

But if the situation is deliberately made general relativistic or deliberately involves a properly synchronized general relativistic operation, then Jackson’s statement is false. In that case, a bit of that giant curled energy flow component does diverge after all, and comes into the circuit to help power it. In optical physics, the negative resonance absorption of the medium (NRAM) phenomenon (released by the Russians in 1967) is just such a process, though that is completely unknown to our optical physicists. But in the optimized narrow frequency experiments using laser input energy, the COP is actually $COP = 18$ as experimentally measured every year in all leading optical physics groups worldwide.

But none of them are allowed to say “excess emission”, but are forced to use the deliberately mind-numbing phrase “negative absorption”. Anyway, we proposed using that NRAM process to build heat amplifiers in steam boilers, so that with closed positive feedback the steam boiler can be made self-powering. This would immediately and dramatically lower the consumption of coal, nuclear fuel rods, natural gas, etc. in most of our electrical power plants already built and deployed. For a crude little paper on it, see Thomas E. Bearden and Kenneth D. Moore, “Increasing the Coefficient of Performance of Electromagnetic Power Systems by Extracting and Using Excess EM Energy from the Heaviside Energy Flow Component”. PPA, filed and obtained in Oct. 2005. Now released into public domain and freely given away to the public domain. It is available at <http://www.cheniere.org/techpapers/PPA%20Increasing%20COP%20by%20addnl%20extractn%20from%20flow1a.DOC>.

As you can see, our electrical engineers are deliberately (and unknowingly) trained to only build symmetrical systems that destroy their free energy wind input faster than they use some of it to power the loads, and that do not do anything “general relativistic” so that a part of that now-unaccounted giant curled Heaviside electromagnetic energy component also gets diverged (and thereby converted into an extra Poynting energy component). In short, our own electrical engineers, professors, and departments self-enforce $COP < 1.0$ performance and are thereby directly responsible for the world energy crisis, giant pollution of the biosphere, and the deaths of hundreds of millions of impoverished peoples world wide!

The thing is this: Our scientific community should fund and permit the bright young theoreticians and bright young professors to tangle with the technical problem of how to go about building asymmetrical interception and powering systems, once they easily assemble a free electromagnetic energy wind source for furnishing the input energy freely from the vacuum. Let them first remove the diabolical Lorentz symmetrization from their present Heaviside equations, and then ponder how to then build a nice “asymmetric windmill” that will intercept and collect some of that freely flowing electromagnetic energy, and will separately use (dissipate) it to power the external loads without disturbing the “crossed dipoles and their broken symmetry”.

Comment by Gary Vesperman: Was John Pierpont Morgan really that sharp a bean-counter?!! In spite of his demonstrated ruthlessness and his exploitation of the genius Nikola Tesla, we would have to give him credit for his conjunction of acute business acumen with his not inconsequential understanding of physics. Morgan left a legacy of energy invention suppression that endures to this day.

Frank Richardson: Magnetic Electrical Generator and Bladeless Steam Turbine

As told to Gary Vesperman by Frank Richardson, during the 1970’s four Nevada Test Site (NTS) technicians helped Frank Richardson, an NTS electrician, invent a magnet-based electrical generator that required no input power and also a bladeless Tesla-type steam turbine.

Richardson’s “Electromagnetic Convertor with Stationary Variable-Reluctance Members” (US Patent No. 4,077,001) uses two pairs of electromagnets to warp a permanent magnet’s magnetic fields back and forth across output field coils to induce a DC output voltage. Dr. Thomas Bearden’s motionless electromagnetic generator (see above) is based on the same principle.

The bladeless steam turbine has a closed-loop cycle that Richardson claimed is far more efficient than the electric motor in terms of converting electrical energy into rotational energy for application to a vehicle’s drive wheels. The water is heated with radio frequencies like a microwave oven into steam that is then forced through two disks in sequence. The electricity for the water heater came from the generator.

The two disks are perforated in such a manner as to prevent cavitation (bubbles) even at high rotational velocity. Since steam offers a 1,000-to-1 expansion ratio compared with gasoline’s expansion ratio of approximately 300 to 1, the turbine is extremely powerful. An 18-inch diameter prototype’s output power was measured at approximately 1,000 horsepower.

A Volkswagen Beetle was outfitted with these inventions and driven around without energy input.

Some people tried to steal these two inventions. Two of the technicians died under suspicious circumstances, and Richardson had to go into hiding until his recent death. It is Gary Vesperman’s understanding that the black helicopter people might have had nothing to do with this situation; just greed.

Gary Vesperman (Reporter): Energy Inventors are Buzzed by Black Helicopters

A few years ago one summer, an energy inventor's house was buzzed twice by a black helicopter. He said they appeared to be an older Hughes model painted black and with no markings. He asked a friend who is an air traffic controller at the local airport. His friend reported no radar sightings. One of the buzzings was witnessed by dozens of people although the inventor himself wasn't home. (Gary Vesperman has since then come across an article in his zero point energy literature which claims that the radar-absorbing coating on black helicopters and also black Stealth fighters and B-2 Stealth bombers is depleted uranium.)

Also about that time the energy inventor and some other people narrowly escaped a flip and crash in a private plane which had a cut on a tire. The cut was then hidden by rolling the plane.

Las Vegas UFO buff Tym Schofield was driving around the desert one year when some black helicopters swooped low over his car and gave him a really good scare. He was on his way home after appearing on a radio talk show.

A female Las Vegas resident met a former black helicopter pilot at a 1995 Christmas party. The pilot had become so disgusted he quit. Subsequently, the driver of a car attempted to run over the ex-pilot and killed his wife instead. Gary Vesperman tried to locate the pilot so he could interview him but was unsuccessful.

Bob Dratch, inventor of the thorium powerpack (see below), reports back in the late 90's during one of the winters he had picked up his son from the bus-stop. He went past his old machine shop which he had in an old farm house and continued up the hill to his house. As Dratch crested the hill top he noticed hovering below the ridgeline out of sight of "radar" from the flatlands a black helicopter with something that looked like a high-powered "shotgun-like" antenna on the nose. The copter was totally silent, black, numberless and pointing this "thing" at his shop. After having dropped off his child at home he went back down to his shop and found all his computers were OFF line, and not booting any more. Had his equipment just gotten zapped with an electromagnetic pulse? Was he being snooped on long range? Who knows?

The town was about 10 miles due west of Golden Colorado, and the mountain they were nearest is called Mount Tom. They were between Mount Tom and Dratch's shop, very close to the hilltop closest to him (within about 500 feet), but about 8 miles SE of the large mountain (Mount Tom), just clearing the hill's ridge and below tree line. He would not have seen them at his shop as at that altitude they were below tree line, but hovering silently. When he crested the hill that was when he was above tree line for a moment, and saw them there. He no longer has his shop at the old location as a few years after that all the water dried up in the wells. He supposes that is just a coincidence.

The black choppers now and then make a point of buzzing him, and/or hovering. But Dratch hasn't had any ground attacks – just this aerial stuff. Generally they tend to appear when he runs tests...

(The two black helicopter stories below were excerpted with permission from Erik Masen's article SUPPRESSION FROM HIGHER UP Inventors Beware! The Deadly Campaign Against Free-energy Devices, *Electrifying Times*, Vol. 8 No. 3 and also in http://www.electrifyingtimes.com/erik_masen_suppression.html.)

At the International Tesla Society conference in 1993, a videotape of an advanced generator utilizing tachyon waves was presented without the inventor's permission. This generator not only produces excess energy, but also exhibits time-warping characteristics. The tape was shown on a Friday afternoon, 3,000 miles from the inventor's home.

The very next day, U.S. Government's Federal Bureau of Investigation (FBI) and Bureau of Alcohol, Tobacco and Firearms (ATE) agents knocked on the inventor's door wanting to see the device. He politely told them no.

The following day, a black helicopter hovered above his house taking pictures of the inside. (These black helicopters and even some satellites apparently now have the capability of photographing every item inside a building.)

On a recent morning talk show featuring the U-2 spy plane, it was revealed that the plane's audio receivers are so sensitive they can pick up ground-level conversations from an altitude of 70,000 feet.

(The black helicopter stories below were told to Gary Vesperman at the 1997 International Tesla Society Symposium in Colorado Springs, Colorado by health physicist John W. Moreland, Ph.D., 1251 Smith Thompson Road, Bethpage, TN 37022 (near Nashville); voice 615-888-3428. Moreland publishes and sells 34 engineering and physics textbooks – mostly old books that he thought ought to be republished and made available. He has accumulated several yards of files on unconventional energy devices.)

It is reportedly possible to approach within a half-mile of a base east of Nashville, Tennessee which houses at least 100 black unmarked helicopters, some black unmarked C-130 transport airplanes, and black unmarked jeeps.

A county commissioner, whose jurisdiction includes Nashville and who owns a farm, became upset with black helicopters flying over his farm at night scaring and scattering his animals. He complained to Congress, the Department of Transportation, Federal Aviation Agency, etc. without satisfaction.

Some years ago, an inventor in another city had his house buzzed a few times by black helicopters. One night during a particularly aggravating buzzing, the inventor shot down the black helicopter which killed both pilots and demolished his house. He was arrested and charged with murder. At a hearing, his lawyer held up a Washington Post newspaper headline “Federal Government Claims Black Helicopters Don’t Exist”. The charges were dropped because black helicopters don’t exist.

So afterwards when another inventor in early June one year at 2 a.m. had his one-story house buzzed by a black helicopter 3 feet above his roof, he went outside with a flashlight and a pistol. He aimed the light at the pilot, ran the light along the fuselage and after finding no identifying numbers, told the pilot he doesn’t exist. He then disabled the tail rotor with his pistol. (He didn’t want to injure the two pilots.) The helicopter took off fishtailing from side to side. Since then he hasn’t been visited by black helicopters.

Black humor? It could be supposed that these two shooting incidents prove that it must conveniently now be legal open season on black unmarked helicopters. Keep in mind though that their pilots are only employees of the U.S. Government (see <http://www.nogw.com/shadow.html>) who are being paid to spy on, harass and buzz targeted American citizens, particularly energy inventors who potentially are able to put large energy industries out of business. Some of these black helicopter pilots may even be wondering about why they are participating in suppression of new energy inventions.

Erik Masen, in his article “Suppression of Quantum Leap Inventors”, *Electrifying Times*, 2007, Vol. 10, No. 2, wrote that some say that black helicopters are part of the Bureau of Alcohol, Firearms, and Tobacco which operates under the U.S. Treasury Department, which in turn operates with the U.S. Federal Reserve, which is a private corporation, which operates with the World Bank, over which the U.S. Government apparently has no jurisdiction. Thus, the black helicopters can do as they please.

Gary Vesperman (Reporter): Shielding Over-Unity Power Converters

A typical radio wave that is radiated out of an antenna comprises of transverse waves of electromagnetic energy. These transverse radio waves oscillate perpendicularly to the axis along which they are traveling.

The zero point energy field is an immensely energetic medium, omnipresent throughout the universe, of random electromagnetic waves with frequencies ranging from near zero to frequencies so extremely high as to be undetectable.

An over-unity power converter generates more output power than the input power it needs to operate. Hence its ratio of output power to input power is greater than one. That is, it is operating at “over-unity”. Its leftover output power is thus available to do useful work for “free”; hence the popular term “free energy” machine.

Some types of over-unity power converters are designed to extract energy from the zero point energy field. What’s interesting is that longitudinal waves of electromagnetic energy are emitted during the energy extraction process. That is, these longitudinal electromagnetic waves oscillate along the axis of their travel, not perpendicular to the axis like transverse radio waves.

Detecting these longitudinal electromagnetic waves requires special sophisticated instruments. The U.S. Government maintains a network of such instruments in orbiting satellites to monitor the entire earth for these signals. (This same network is also employed to usefully detect, locate by triangulation, and report lightning bolts in real-time which helps to justify the network’s enormous expense.)

If a longitudinal electromagnetic signal is picked up, it is assumed that an inventor is experimenting with a working over-unity power converter or generator. The location of the device is triangulated, and the inventor is then “visited”, liquidated or whatever by energy invention suppression hit squads in order to safeguard markets for gasoline and metered centrally generated electricity.

Copper-lined Faraday cages, normally used for shielding radio waves, are not adequate for blocking these signals from over-unity converters of zero point energy. One experimenter has suggested using bismuth.

The all-seeing Big Brother effectiveness of the U.S. Government’s zero point energy extraction detecting and tracking network has been demonstrated by one zero point energy experimenter’s complaint:

“I have not been able to locate any type of material that will shield this type of energy. The best advice is to work underground and operate only for brief periods of time 10 to 15 minutes at random times. Also heavy cloud cover, wind, rain and other thunderstorms are good for masking your experiments.

I had black choppers and power company trucks crawling all over me within 15 minutes when I discovered an over-unity effect in my shop. I think they would have been at my door if I had not shut the unit off when I did. They changed every ground and insulator on all the power poles for miles around my location looking for the source of the energy they had detected.”

This writer, Gary Vesperman, pieced together the above from various sources. David G. Yurth questions its accuracy per his July 7, 2006 email below.

Gary: You may want to consider the following with respect to your descriptions of both radio waves and the ZPE field phenomena.

Radio waves are indeed waves of electromagnetic energy. In some cases they are transverse, and in some cases they oscillate perpendicular to the axis along which they are propagated. But in the case of the CTHA antenna, for example, which is really a magnetic resonance oscillating antenna device, the wave form can be either spherical or hemispherical. In some cases, as in the case of the devices we demonstrated several years ago, the wave form can be narrowed to as little as .1 degree second in a semi-hemispherical form.

In most cases, RF waves radiate in a straight line from the propagation point – that is why, for example, RF devices used during the day have a range that is limited to less than 22 miles [on flat topology], unless repeater towers are provided at key points along the horizon. However, with the CTHA device, particularly when it is used on the surface of large bodies of water, and more particularly when used on the surface of salt water, the hemispherical wave form coheres to the surface of the water and is attenuated at only about 10% the normal rate of RF signals propagated through the air. In addition, because of the nature of water itself, extra low frequency radio waves are the only RF waves that can be relied on to propagate a signal through any appreciable distance of water. However, with the CTHA, this is not true. These devices have been shown to send RF signals through the water at much higher [VHF and UHF] frequencies than any other known devices, with minimal attenuation and virtually no distortion. Why they operate in this way is not known to science in general and to the US Navy in particular.

My notion about this is that the CTHA configuration propagates non-local field effects as well as linear ones. Because the non-local effects are neither understood nor optimized in the current technologies, what we observe is the effect of a non-linear wave propagation device used in applications which are typically linear. The Y-Bias manuscript explains how this works and why it is important.

Finally, the zero point is probably not *an immensely energetic medium, omnipresent throughout the universe, of random electromagnetic waves with frequencies ranging from near zero to frequencies so extremely high as to be undetectable.*

Rather, as the Y-Bias research suggests, the zero point is the interface between the physical vacuum and the 4-D physical universe we live in. It is not something extrinsic to the physical world we observe but is utterly intrinsic at the finest scales of organization. This insight is the reason the Y-Bias information is so important. What it means, for example, is that neither Tom Bearden’s MEG nor Correa’s orgone generator is really operating at the zero point or anywhere near it. Rather, what they are doing is tapping the quantum pump that operates within the organizational structure of all matter and energy at the fourth scale of development to liberate an infinite supply of electrons via one biased voltage schema or another.

What the Heavyside equations and Whittaker's formulation make clear [quaternions] is that every variety of physical material exhibits a quantum oscillating frequency. Modern science has only just begun to understand the importance of this concept so the literature is not yet replete with references to the quantum frequencies of all the elements and their isotopes. Nevertheless, when the quantum frequency of any material can be excited by an outside force which causes it to operate in a narrowly defined local in terms of a harmonic resonance, the dynamic properties of self-organizing criticality kick in to produce exponentially more powerful internal oscillations than would normally occur within the sub-atomic structure of the material.

We know this because when carefully prepared isotopes of certain rare earth materials are intercalated within the crystalline lattice structure of conductive thin films, and then exposed to permanent magnetic fields, the atoms of the isotope produce prodigious amounts of electrical voltage and current continuously, without consuming either the atoms themselves nor the materials within which the atoms are held in stasis in the lattice itself.

We have a prototype engine which is in its third generation now that has been operating continuously for 76 days. The data recorder shows that the power output has remained steady day and night throughout the test period. The mass of the material has not changed one iota in that time and neither has the composition of the substrate, the crystalline material or the original atomic isotopes themselves.

Bearden solved the source charge problem partially when he demonstrated that mass is organized and deconstructed at the zero point with a quantum frequency that absorbs a virtual photon from the physical vacuum and then liberates a real photon when two virtual charge ensembles combine to form the organized datum which is characterized at the second scale of organization. This operation goes on continuously within the heart of every iota of material found everywhere in the universe – it is this fact, born out by the Y-Bias analysis, that gives the lie to the Big Bang Theory. All primary particles were not created at the instant of the Big Bang – instead, everything about the cosmos is being recreated at a quantum rate all the time, at every address in the cosmos, continuously, as part of the autopoietic nature of this physical dimension.

So when any inventor tells you he is generating transverse waves of non-local propagation when tapping the zero point, you can write that research off as fundamentally flawed because the phenomena you are referring to has nothing at all to do with the zero point. --- Dave

(This writer, Gary Vesperman, recently edited David G. Yurth's ground-breaking 153-page physics monograph "Y-Bias and Angularity[©]: The Dynamics of Self-Organizing Criticality from the Zero Point to Infinity". I also edited Yurth's 380-page "Seeing Past the Edge" which explores and ties together such advanced scientific topics as nuclear physics, mind-matter connection, holographic universe, and the torsion field.)

Ph.D. Electrical Engineer: Advanced Form of Plasma-Discharge Energy

An inventor and a Ph.D. electrical engineer from one of our prestigious universities had made a breakthrough on an advanced form of plasma-discharge energy. They hired a hall in a mid-sized town in the U.S. to show off their new discovery. It was an impressive demonstration.

One day, his neighbors told one of them they had seen a black helicopter hovering over his house for several hours while he was away at work. Evidently, it was photographing his technology in the basement. A black van, with windows that you couldn't see into, also staked out their lab.

After three weeks of surveillance, a S.W.A.T. team of six kicked down the lab door, and with axes, destroyed half a million dollar's worth of equipment in one-half hour. The thugs forced the inventors' faces down onto the concrete floor, and, demanding to see the nuclear source, beat the inventors' heads against the concrete until they nearly choked on their own blood. They had no search warrants, just "S.W.A.T. TEAM" printed on the backs of their brownish uniforms.

The inventors were told to cease all further development, and the apartments owned by one of the inventors were condemned. The tenants were ordered to leave, and the Ph.D. electrical engineer is still being harassed by the IRS to this day.

Gary Vesperman (Reporter): Six CIA Agents at 1996 Tesla Society Symposium

When this writer attended an International Tesla Society Symposium in Colorado Springs, Colorado in 1996, I was told that the inventor of a new type of carburetor that can triple the mileage of a car has had his social security number taken away. Also attending the convention were at least one U.S. Government's Central Intelligence Agency (CIA) agent, identified by someone standing in the registration line behind him who happened to see his identification card, and another five CIA agents.

One of the CIA agents threatened a co-inventor of an electrical generator utilizing two types of radioactive waste as he was walking up to the podium to give his speech. However, this story needs further verification.

Gary Vesperman (Reporter): US versus Japanese Support of Cold Fusion

The leading cold fusion community website is <http://www.lenr-canr.org/>. The site features a library of papers on Low-Energy Nuclear Reactions (LENR) – also known as cold fusion. Chemically Assisted Nuclear Reactions (CANR) is another term for this phenomenon. The site features a library of more than 500 original scientific papers in Acrobat format, reprinted with permission from the authors and publishers. The papers are linked to a bibliography of over 3,000 journal papers, news articles and books about LENR.

In Japan, inventors are treated as national heroes and are lavishly supported. The Japanese government's annual R & D budget in cold fusion had been \$100 million per year (since greatly reduced). Japan has issued over 100 low-energy nuclear reaction patents. In contrast the U.S. Patent Office has so far approved only one cold fusion patent application out of 300. (This statistic is possibly out-of-date.)

Stanley Pons and Martin Fleischman: Cold Fusion

Much misrepresentation and falsification of evidence happened after Stanley Pons and Martin Fleischman announced in March 1989 that they had achieved fusion by electrochemical means. Several influential US laboratories (California Institute of Technology, Massachusetts Institute of Technology (MIT), Yale/Brookhaven) reported negative results on cold fusion that were based on shoddy experimental work and a misunderstanding of the Pons-Fleischmann claims. They gave a hostile hot fusion establishment the excuse it needed to conclude that the claims made by Pons and Fleischmann were bogus. In November 1989, a U.S. Department of Energy panel concluded the same after a shallow mock investigation of only seven months. Eugene F. Mallove, Sc.D., was the Chief Science Writer at the MIT News Office at the time. He played a part in exposing the MIT report as mistaken, possibly fraudulent, and resigned in protest over it in 1991. ... It is ironic that each of these negative results were themselves the product of the kind of low-quality work of which Fleischmann and Pons were accused. The difference was that the reports said what the hot fusion community wanted to hear. This was the legacy of the 1989 ERAB report, but that legacy must now be reversed – and it will be, however long that takes.

Dr. Mallove later founded and edited/published Infinite Energy magazine until in May 16, 2005 he was robbed and bludgeoned to death by a pair of pathetic drug addicts. The 1999 Issue 24 of Infinite Energy, in its 57-page special report titled "MIT and Cold Fusion: A Special Report", extensively documented that MIT violated the trust of its donors, employees and the public in the integrity of its scientific research into cold fusion.

In addition to suppressing cold fusion, MIT has also suppressed its solid-state lithium-ion roll-to-roll battery patents which would increase the efficiency and performance and lower the cost of electric and hybrid vehicles. See Remy Chevalier's report below on NiMH and solid-state lithium-ion batteries.

Chevalier does ask "Is it because MIT is cashing checks from the Rockefeller Bros. and the Ford Foundation?" So he may be hinting that, possibly based on inside information, MIT's suppression of cold fusion and its battery patents is due to its secret protection of the oil/auto monopoly.

Most people, including physicists, continue to be unaware that low-energy nuclear reactions are real, and have been verified in hundreds of experiments throughout the 1990s. In February 2002, the Space and Naval Warfare Systems Center of the United State Navy in San Diego released a 310-page report titled "Thermal and Nuclear Aspects of the Pd/D₂O System" that discusses the overwhelming experimental evidence that the cold fusion effect indeed exists. Dr. Frank E. Gordon, the head of the center's Navigation and Applied Sciences Department, writes in the foreword:

That "cold fusion" continues to be ignored by the scientific establishment, and, to add insult to injury, is being used synonymously with "bad science", usually in such expressions as "the cold fusion debacle", constitutes one of the greatest scientific scandals in human history, and a human tragedy. While wars over oil are being fought, a potential source of energy that could solve humanity's energy problems for all eternity is being ignored by all but a small community of researchers. At the same time, the dead-end "hot fusion" program continues to receive billions of dollars in public funds. If there is a scandal associated with cold fusion, this is it. (Source: "The Suppression of Inconvenient Facts in Physics – The Cold Fusion Scandal - Rochus Börner, Ph.D., *Cold Fusion Times*, Vol 12 No 2, August 2005. See also <http://www.std.com/~mica/cft.html>. Excerpted from "The Suppression of Inconvenient Facts in Physics" <http://www.suppressedscience.net/physics.html>. This paper compiles instances of suppression of honest examination of flaws in some of the major theories held inviolable by Western science bureaucracies. In addition to the supposed impossibility of cold fusion and low-energy transmutation, mainstream Western physicists hotly defend, in spite of "inconvenient facts in physics", relativity theory, the constancy of the speed of light, absence of signals traveling faster than the speed of light, quantum theory, big bang cosmology, impossibility of anti-gravity, commercial hot fusion, and the second law of thermodynamics.)

Mitchell Swartz: U.S. Patent Office Blocks Cold Fusion Patents

Mitchell R. Swartz, MD, Sc.D, has four electrical engineering degrees from Massachusetts Institute of Technology. He is an engineer and physician who has been inventing for decades, and has received many patents. Two of his previous patent applications went to the Board of Patent Appeals and were subsequently issued.

Yet, even with that extensive experience, never before had Swartz seen such misbehavior, systematic prejudice, conspiracy and disingenuous statements as has been demonstrated by the U.S. Patent Office regarding several of his patent applications involving lattice-assisted nuclear reactions, and devices which measure conditions leading to such reactions (often referred to as "cold fusion").

Regarding cold fusion, it is a real science, and Swartz and his fellow researchers have conducted solid, meticulous research for almost two decades. He recently gave lectures to the Defense Threat Reduction Agency and the Naval Research Laboratory, both of which recognized the utility of his work in cold fusion. No one from either erudite group (more than a hundred scientists and engineers) gave even one iota of the disparagement which, in stark contrast, has been doled out from the Patent Office without foundation on a weekly or monthly basis continually for more than two decades. Along with the disparagement, the Patent Office has been disingenuous to the federal courts and the Board of Patent Appeals, and has demonstrated not only a conflict of interest but also salient improper behavior.

The egregious behavior of the Patent Office with respect to cold fusion patent applications has ignored the U.S. Constitution and Congress' directive to "encourage progress and to encourage ingenuity with patentable statutory subject matter to include anything under the sun that is made by man". Supporting said Congressional directive, attention is directed to the fact that issuing a patent would normally be mandated because these processes involve the loading of heavy hydrogen into palladium and its generation to form helium and heat. Such transformation has been declared patentable by the federal courts.

The Patent Office's use of a two-tiered system to chronically discriminate against cold fusion violates many federal laws. Out of more than 300 cold fusion patent applications, the Patent Office has issued only ONE patent – and that single patent is believed to be the Patent Office's accident/mistake.

To illustrate exactly how the Patent Office methodically destroys cold fusion patent applications (and probably many other energy patent applications), Swartz describes two patent applications of his which had nothing to do with the cold fusion process directly, but were in fact methods of improving technologies of measuring loading of hydrogen into metals and of measuring heat production (calorimetry). They both just happen to be useful to cold fusion. The mere hint of application to cold fusion at the Patent Office was enough to warrant (as they see it) harassment, discrimination, and obvious deviation from normal procedure.

The Patent Office concocted several false reasons to scuttle his applications. For example, the Patent Office falsely claimed that Swartz had purported that there was "excess heat" in the invention of a method for improving the measurement of loading of hydrogen into metal. However, those two words were never even mentioned in the patent application. Swartz pointed out to the Patent Office their error, who then studiously ignored his Affidavit – timely filed and supported with many other Declarations supporting him.

The Patent Office's Decision to deny the calorimetry patent application refers to "cold fusion" eighty-six (86) times by inaccurately substituting the words "cold fusion" for the words and phrases "heat production", "activity", "electric power drive", "thermally monitoring", "thermal output", "optimum drive condition", and even for "multiring calorimeter".

Showing systematically hostile, abusive behavior to Swartz and his patent applications, the Patent Office would frequently ignore and not even officially log exhibits and declarations. For example, the Patent Office denied the validity and workability of his two inventions in spite of substantial peer-reviewed documentation of careful measured, professionally witnessed experimental results of actually working prototypes. The Patent Office was able to back up such denials simply by not bothering to log pertinent documents.

To avoid responding to what was filed which is actually required by law and custom, the Patent Office brazenly relied upon reference to art irrelevant to the actual specifications and claims. Responding to the initial denial of his patent application for a vibrating electrode for measuring the loading of hydrogen into metals, Swartz appealed to the Board of Patent Appeal. In their decision to again deny his patent application, the Board's Decision incredibly included only two (2) sentences pertaining to the actual invention. The remainder of the Decision's 28 pages comprised of a stale, totally irrelevant carbon copy attack on cold fusion and Drs. Pons and Fleischmann. This has been one of the Patent Office's typical distraction processes.

The Patent Office has routinely made many false statements in federal documents. For example, they falsely stated once "there is no disclosure..." involving temperature, and again for voltage. Yet the applications do discuss temperature or voltage, and Swartz in his July 30, 2007 letter to Gary Vesperman cited the actual pages where these parameters were discussed more than once.

These two inventions are only two of more than a dozen patent applications Swartz submitted to the Patent Office where the response has been disingenuousness, obstruction, and failure by the Patent Office to abide by a uniform standard consistent with their own rules.

In summary, it is important to remember that this is not an issue of a difference of opinion; it is about a two-tiered system to enable chronic discrimination (suppression) against cold fusion and probably many other energy inventions. It is about an agency of the U.S. Government thumbing their noses at the U.S. Constitution, at the U.S. Congress, at American security, and at American citizens. It is about an agency "losing" checks, "losing" pleadings, "losing" Exhibits, and failing to answer Declarations and pleadings over seventeen years.

The Patent Office remains quite comfortable and shameless as it viciously ignores Article I, Section 8 of the U.S. Constitution, the explicit directives of the U.S. Congress which funds it, and even its own rules. It is egregious and odious that some in the Patent Office use systematic disingenuity to rob inventors, and more importantly America itself of these American-crafted energy-related inventions. The cover-up of cold fusion is complete, as the applications are now transferred overseas to hurt the United States of America.

(Source: In his July 30, 2007 letter to Gary Vesperman, Mitchell Swartz backs up his allegations with specific citations of law, reference to ~140 pounds of over 300 indisputable papers submitted as evidence, legal briefs, etc. Swartz also mailed to Vesperman the August 2005 issue of *Cold Fusion Times* and a copy of a 39-page Petition to the U.S. Supreme Court for a Writ of Certiorari appealing a negative decision by the Board of Patent Appeals and Interferences. Having never before seen a U.S. Supreme Court legal document, I found the Petition fascinating to skim through. For instance, I counted 62 references to previous cases. I used to work as a technical writer preparing computer manuals for 18 Silicon Valley companies. The materials Swartz mailed to me confirm the suspicion I have had for a long time that patents demand the ultimate in technical writing.)

Robert Bass: Low-Energy Nuclear Transmutation

From: Don Quixote II <donquixote@radix.net>
To: Sir Arthur C. Clarke <blenheim@sri.lanka.net>
Date: Saturday, November 25, 2000 8:07 AM
Subject: A WARNING? My micropellet proposal to Japanese government

Have 3 people been assassinated because of the Cincinnati Group's discovery of a low-energy nuclear transmutation process that can be used, e.g., for radioactive waste remediation?

The original 14 addressees are all editors or investigative reporters

From: Bass, Robert W (IDS)

To: Adil Shamoo ; Barbara DelloRusso ; Eugene F. Mallove ; George Miley ; Hal Fox ; Jean-Francois Cazorla ; Jed Rothwell ; Jim Wilson ; Mitchell Swartz ; Pat Bailey ; Patrick Bailey ; Charles B. Stevens ; Elijah C. Boyd ; Marjorie Hecht

Cc: 'Xing-Zhong Li'

Sent: Friday, November 24, 2000 6:50 PM

Subject: My micropellet proposal to Japanese government

PREFACE: It is readily documented that the CIA and the KGB and the Mossad, etc. all have "sprays" which can be sprayed upon someone and cause him to die of apparently natural causes. One famous case occurred (not long after Chris Tinsley's death) in which Mossad agents were caught red-handed spraying a Hamas activist in Jordan, and King Hussein told the Israeli Prime Minister that if they didn't send the antidote quick there would be hell to pay; but it wasn't the Mossad which sent the antidote to Jordan, it was the CIA! (They sent a doctor from the Mayo clinic [who had been previously accused of being a collaborator with the CIA] to revive the victim.) (The "Hamas activist" was apparently Hamas' Syria-based political chief, Khaled Mashaal. As Mashaal lay dying in a Jordanian hospital, King Hussein pressured Israel to provide the antidote in return for releasing the Mossad agents. Gary Vesperman)

So much for people who say that political assassinations by democratic governments are paranoid fantasies.

Hal Fox,

Dr. Li approached me semi-publicly after the American Nuclear Society (ANS) meeting, where he heard me talk about the CG's LENT process. He said that he hadn't wanted to spoil my presentation by saying anything negative, but he wanted ME to know that he himself did NOT believe the CG claims and that he could NOT confirm the claims based on his own experience and that yet he liked me and wanted me to know "the truth." (By the way, did you know that Dr. Li has 35 Ph.D.'s working for him full-time on cold fusion in China with Chinese government support?!!)

Dr. Li said that he had gone to your lab in Utah and watched you and Dr. Jin run the experiment with a "good" gamma ray detector. However, he claims that when the thorium begins to precipitate out, the solid angle of the detector remains unchanged, but the thorium is moving out of that fixed solid angle, so that the radioactivity SEEMS to be decreasing but it is a false alarm.

He said that he took the "before & after" fluids that you gave him back to China and had them tested but with negative results. (But Li did admit that the straight-line graph I showed could not be explained by his negative assumptions and was "affirmative evidence on the side of the CG.")

Don Holloman of CG says that the 7-man team of Francesco Celani et al in Italy tested the CG LENT-1 device so thoroughly that "data reduction" took 37 volunteer undergraduates "months" to complete. In their publication they claim that they achieved both complete "radiometric balance" AND complete "chemical balance" of the before-process and after-process results.

However, Celani's boss died in midlife of alleged "natural causes". And you know that Stan Gleeson of the Cincinnati Group seemed to be perfectly well when he suddenly died at age 48 of "a stroke." George Miley told me that when at ICCF-8 he asked Celani why he didn't follow through on this type of LENT work (which Chris Tinsley was starting in England [having emailed me about Stan's open-beaker LENT test] just before he dropped dead at age ~50 of "natural causes"), the reply of Celani was: "THREE PEOPLE have died, and I don't want to be the fourth!" George Miley thought that Celani was talking about radiation-sickness danger, but that is not what Celani has in mind! The proof that Celani is open to conspiracy theories is that he is on the masthead of the LaRouche magazine and *they* don't merely *suspect* conspiracy, they have been *jailed* by a U.S. Government conspiracy!

Lawrence Hecht shook my hand at the American Nuclear Society meeting after having just got out on parole after 5 years of a multi-decades sentence for "selling securities without a license" which was not [even] a crime in VA when he sold "political loans" to LaRouche supporters but [despite that] the Secretary of State of VA (who 2 days later was made a Judge as payoff for her cooperation) after studying the matter for 2 weeks decided that Political Loans are indeed 'securities.' (One of Hecht's colleagues is still in jail [illegally] with a 77-year sentence.)

The barbaric nature of a 77-year sentence for a technical infraction is self-evidently PROOF of evil at work: Pres. George Bush's stockbroker brother [Neil Bush of Silverado Bank in Colorado] was REALLY guilty of the same infraction, but he was merely *fined* \$1,000 and told to "be more careful" and "don't do it again"!

I feel that my own life has been threatened in writing, indirectly by the British government. Here's why: Nobel Laureate Brian Josephson agreed to show at the historic Cavendish Lab the Mallove cold fusion video which I had hand-carried to him. Dr. Josephson even published in Gene's Infinite Energy magazine a *letter* saying he was going to show the video publicly!

But when there was a conference there and many important scientists present, suddenly Josephson reneged! He told me in writing that he had first showed the video privately to a Very Important Person (I suspect Sir Brian Pippard, J's own teacher, after whom TWO buildings at Cambridge are named!); then he, Josephson, was "convinced" by said VIP that it is "for the best" that the public be "allowed to continue to believe" that the whole CF/LENR thing was a delusion!! I tried to get J to say why *he* had agreed. He replied (with copies of his email to me both to Gene and to Yeong Kim at Purdue) that it was for reasons of military security; "they" are afraid that terrorists or rogue nations will learn how to make vest-pocket H-bombs (This is why physicist Fred Zimmerman of the US State Dept. is helping Park with his campaign to outlaw cold fusion meetings.).

When I replied to J that my own theory of deuterium crystals could be used to make "fusion micro-pellets" or "micro-bombs" and that I had sent a copy of my proposal to the Japanese government before they terminated their NHE program, J replied to me that I had better "keep your bright ideas to yourself".

In case I pass away prematurely of "natural causes" I am going to copy the preceding paragraph and send a copy to Gene Mallove and include below a copy of my "microbomb" proposal to the Japanese government. My MSD "bright idea" which J says I should keep to myself has been spread all over the world by Internet since late 1997. So it's too late to suppress the idea by suppressing me.

Best personal regards,
Bob

Dr. Bass is an unusually innovative physicist. Hot fusion requires millions of volts or the equivalent. Hal Fox's cold fusion apparatus requires almost 5,000 volts. Bass's process only takes 17.5 volts to ignite!

Bob Dratch: Thorium Powerpack

Bob Dratch's thorium powerpack would generate electricity at approximately one-tenth of the cost of current methods of producing electricity. Thorium is sufficiently abundant that the entire planet can be powered for millennia. After ten years of continuous operation, a trace amount of U-233 is produced. U-233 recovery to re-purify the thorium is easily accomplished. Thorium thus lasts a long time when recycled and consequently is a very efficient energy source. After extraction from ore, thorium does not require energy-intensive enrichment as is the case with uranium.

A thorium-powered reactor is inherently safe. It doesn't run the risk of "meltdown" or explosion nor can even a dirty bomb be created. Its nuclear reaction simply stops when its neutron exciter is turned off.

The simplest and smallest "table top-sized " neutron exciter design is something close to the size of a 4-D cell flashlight, and starts at about 500-kilovolt neutron output. In fact this smallest most cost-effective system can run off 4 D cells for its power.

A thorium powerpack's neutron excitor does not use radioactive flux components as conventionally done for portable systems. Instead it relies on Dratch's invention of a novel method of resonant phonon pair cleavage using specifically designed nuclear lattice holo-forms (holographic waveforms) to induce neutron imbalance in a host atom where the host atom then attempts to establish "balance" through the liberation of neutrons. Dratch demonstrated the first model of this novel design back in 1966.

Commercial thorium powerpacks can be developed with 50 or 100 kilowatts of output for home use, and up to 1 megawatt for industrial use. They actually are "power amplifiers" with power outputs of 60 times over input power. Maintenance would be minimal.

Predictably, Dratch complains of harassment and even death threats for nearly three decades. He and his family do not enjoy any peace or security, and the police and district attorneys are allowing the threats to continue. That is what really stinks. It seems like there is more than meets the eye behind the scenes going on.

The same death threats and suppression are applying to every piece of technology Dratch has been working on, not just the thorium system. The thorium system has the most impact he believes to the cartels. Dratch had one small section on cold-fusion, which he had published before Pons et al did theirs, and again it used properly shaped sonic fields to do the separation. The scanning system was the basis again for obtaining the proper waveform patterns.

Dratch supposes his problems appeared after he demonstrated his inventions at the Global Sciences Conference and during his workshops since the late 1980's. He has some ideas about who the perpetrators are on the international scene, but nothing really firm. It does tie into Russia and the Middle East. At one point during an early workshop there was a Chinese scientist attending, who worked for the Chinese government and identified himself as such.

To develop his driving patterns for the neutron generation function Dratch uses his scanning system which seemed to have been the initial crux of where the recent bout of suppression started (that was pioneered in 1985, developed by 1988, and in full use by 1990).

Dratch unfortunately has a few more stories about being harassed and death threatened to him and his family by stalkers trying to get proprietary technologies. One stalker has been arrested and taken off his property. The stalkers got away without being brought to justice. The courts instead wanted to cite Dratch in contempt for dare showing that the stalkers were harassing and threatening him. Since that time back in 1992 the same stalking has gone on; there has been email and phone harassment; and the DA's office and police don't do a thing.

Dratch writes about his technologies on his website <http://www.bob-dratch.org>. Among the topics Dratch covers are energy stuff, anti-gravity stuff and consciousness altering stuff.

The earliest suppression was when Dratch's patent application was stolen out of the patent examiners' room and handed off to cronies to develop and exploit. Dratch was the one who designed the equations and concept of the Global Positioning System (GPS) – that was back in the very early 1970's. As best as Dratch can determine the Department of Defense was who the information he submitted at the Patent Office was directed to. That loss and damages is insurmountable to him. He has proof that his equations which were submitted at that time during filing are the same equations used to this day for the GPS equation. Tracing the evolution of GPS will reveal all the parties involved if one can get past the suppression and cover-ups. It then went to a private professional working for the U.S. Government for their own version of the "patent" and assigned it back to the government. In the early 1970's Dratch was offered \$150K by them to sell out to them. He refused saying this is worth billions. Little did he know it was worth trillions.

In the mid-1980's Dratch designed a bio-sensory system that seemed quite capable of sampling fields and generating data signatures making up that object scanned. He continued to evolve the technology. It took on many forms. In about early 2001, he was contacted by the U.S. Air Force to modify that system to locate underground unexploded ordinance. The USAF got at his expense about \$180K worth of consulting and demonstrations doing a bench test showing that his technology would work. They promised a series of further steps leading to contracts. They then disappeared after they apparently felt they had enough "proof" that the concept works. Dratch subsequently was told that they had handed over the research he did to a professor in Denver who to this day still hasn't solved the missing pieces that they weren't able to figure out.

After having given a demonstration of the sensory technology in the early 1990's Dratch was stalked, harassed, and death threats were made to him and his family to the tune of "Give them the technology or else". At one point two of the stalkers came on his property armed with knives and were trying to either kill him or his family, to carry out their threat. The sheriff came and hauled them off. When the trial came up, the judge let them WALK out free with no penalty; just a slap saying don't bother Mr. Dratch again. The judge threatened Dratch with contempt of court for having even brought this to his attention. That was in 1992. Since then Dratch has been regularly harassed and continually threatened. The police still refuse to go after the stalker and threatener. They are using extortion now as the current level of threat. Dratch has been to the DA's office of two states, and been in contact with numbers of police officers to no avail. The threats and harassment continues to this day including making complaints to the phone company who do nothing to stop such when they use the telephones.

Over the last two years Dratch has been working to develop a very unique and powerful handheld and truck-mounted sensor capable of discovering "Saddam's weapons of mass destruction" as well as many other chemical and biological weapons systems. Providing assistance, a former military officer has tried to retrieve documents which were available to any contractor. But Dratch and the officer were prohibited as they aren't part of their crony system of preferred contractors. They needed specific signatures which the U.S. Government has on hand to calibrate their system to what it had to look for (the chemical agents). Having the signature isn't the formula, it is a roadmap that says contamination or a toxic situation is present. So troops and civilians are prevented from having Dratch's technology in a low-cost form.

After having spoken enough about the innovation, one of the crony groups has published that they have a working sensor based on the technology that Dratch had divulged to the former military officer, and that they are going to charge big bucks for that innovation. So that is suppression again of getting technologies out in a way where Dratch can carry out more work.

IPMS: Thorium-227 Electricity Generator

The I.N. Frantsevich Institute for Problems of Materials Science (IPMS), Kiev, Ukraine, from 1951 through 1991 secretly employed 6600 of the most brilliant theoretical physicists in the entire Soviet Union to work for nearly 50 years with complete freedom. They were able to develop whole new sciences, technologies and materials unknown in the West.

Their models of non-linear quantum mechanics, plasma physics, atomic engineering, nuclear physics and related mathematical and theoretical constructs, which made their development possible, are so unique that they challenge the validity of the most fundamental assumptions embodied in the Copenhagen Interpretation model currently held in general acceptance in the West.

For example, Western-developed particle/wave quantum mechanics is described by Einstein's $E = MC^2$. The Soviet nonlinear model of quantum mechanics is described by the formula $E = M_{KV}$ [Energy = Mass @ rest as a function of a mathematical constant].

Einstein's theory of relativity assumes that the speed of light is constant. However, measurements have shown that the speed of light has slowed down 7 per cent over the past two centuries. (See http://worldnetdaily.com/news/article.asp?ARTICLE_ID=39733.) Einstein's famous equation is therefore not based on the real world of peer-reviewed experimental results. Consequently the more correct Soviet model has enabled numerous technical advances not even dreamed of by Western science.

Among several energy inventions developed by the IPMS are free-standing thorium-227 isotope electric power generating plants. They can be small enough to power a single home and large enough to power whole communities. They also can operate for up to 18 years without ever requiring refueling or maintenance.

Arrangements to commercialize these useful energy inventions by joint ventures of the IPMS and more than a dozen private sector companies were repeatedly sabotaged by the U.S. Government's Defense Intelligence Agency and others. (Source: David G. Yurth, *The Anthropos Files: Tales of Quantum Physics from Another World – 2nd Edition*, 2007)

Howard Rory Johnson: Magnatron – Light-Activated Cold Fusion Magnetic Motor

During the late 1970's Howard Rory Johnson, a brilliant inventor in Elgin, Illinois, combined light-activated cold fusion with a new type of magnetic motor into a "Magnatron". His prototype Magnatron produced 525 horsepower but only weighed 475 pounds. It could propel a large truck or bus 100,000 miles on about 17 ounces of deuterium and 1.5 ounces of gallium before being recharged. This was years before either Pons and Fleischman or Dr. James Patterson entered the scene with their cold-fusion technology.

Johnson discovered the light-activated cold fusion portion of the Magnatron by accident when as he was developing a new type of electronic circuit using deuterium oxide and gallium, he noticed the two materials were producing energy on their own. He could not figure out what was triggering the energy production for some time until he finally discovered it was light.

The Magnatron's flow of deuterium (an isotope of hydrogen) is controlled by magnetic tunnels. At the point where the deuterium strikes the gallium (a heavy metal electron donor), a beam of light from a diffraction prism forces their fusion. That controlled reaction results in the fusion of two atoms forming a new atom. In the process, electricity is released, and that is what powers the magnetic motor. The Magnatron is sealed, however, so 'light' is provided from photon energy produced from coils tied directly to the motor. It is more or less a pulse-generated system.

A photon is a football-shaped particle of electromagnetic wave energy. Its energy content is a product of its frequency f and Planck's constant h . When an electron in orbit around the nucleus of an atom drops to a lower, less energetic orbit, a photon containing the energy equivalent to the electron's energy drop is emitted. This explains why light and other forms of electromagnetic energy such as gamma rays and radar are sometimes observed as particles and other times as waves. The heated filament of a light bulb is an example of photon production.

There is no way to explain, using contemporary electrical theory, how his relatively small motor could produce such tremendous horsepower. Utilizing his own new electrical-magnetic energy theory, involving a process he called "attract-attract", Johnson exploited the magnetic field. He used the top and bottom rotors in his motor. First, the top rotor attracted, released; then the bottom rotor attracted, released. The action of attraction, alternating between upper and lower magnets, used the windings to complete the attract field.

Robert Nelson's compilation of articles about the Magnatron provides much more technical detail on the Magnatron than the foregoing. (See <http://www.rexresearch.com/magnatron/magnatron.htm>.)

Johnson constructed his prototype Magnatron's 525-horsepower magnetic motor without any of the hardware that is presently used in present state-of-the-art electric motors. Conventional motors use the accepted principle of attract-repel, an energy form that doesn't utilize the magnetic field to its greatest advantage. For comparison, a typical 500-horsepower electric motor has wires exiting it that are the size of a garden hose.

The sealed self-contained Magnatron has no wires. Thus, other than the Magnatron's infrequent refueling with small amounts of deuterium and gallium, the stand-alone Magnatron uses no input power. The Magnatron's entire output power is conveyed by its magnetic motor's rotating shaft.

Fuel for the Magnatron is plentiful: deuterium is derived from water, and gallium is extracted from abundant aluminum bauxite. Commercially available pure gallium is still scarce and expensive. It may well be possible, however, to cheaply transmute another less expensive element into gallium. See Gary Vesperman's list of over two dozen methods of neutralizing radioactive waste in <http://iiic.de/docs/GVComparison.htm> which includes possible transmutation methods.

The Magnatron uses no fossil fuel in its operation, and it emits no pollution. The magnetic motor's RPM is 8,000 with a gear ratio of 2:1. Lubrication for the sealed motor is synthetic motor oil which does not need changing and does not need a filter, because foreign materials such as carbon and varnish are not introduced into the system, as they are in the internal combustion piston engine.

This writer, Gary Vesperman, attended the 3rd International Symposium on New Energy in Denver, CO (April 25-28, 1996). I remember being impressed by Gerald Orłowski's lecture "Magnatron, Fusion Magnetic Motor", during which he provided substantial technical information on the Magnatron.

Orłowski reported that, "Some inside information revealed that OPEC had been keeping track of all competitive technology", and Johnson was #1 on their hit list! Johnson was about to manufacture the motors through a nationwide dealership. Some motors still exist, but the owner wants several million dollars for them."

This writer Gary Vesperman knows of very few inventions of new energy sources which are reasonably large stand-alone energy producers. Besides the Magnatron, they include Oleg Gritskevitch's hydromagnetic dynamo, and Electron Power Systems' micro-fusion reactor, which employs stable high-density plasma electron spiral toroids. Almost all inventions of new energy sources are, or claimed to be, relatively small over-unity power converters that convert input power to greater amounts of output power. Bob Dratch's thorium powerpack is an exception (see above).

At the September 14, 2005 public meeting in Green Valley Ranch casino regarding the proposed Regional Fixed Guideway traversing Las Vegas, Nevada, this writer Gary Vesperman submitted comments suggesting possible power sources for the train, including descriptions of the hydromagnetic dynamo and the micro-fusion reactor (<http://www.rtcsonthernnevada.com/rfg/documents/September2005PublicMeetingMinutes.pdf>, pp. 19-77).

No wonder the Magnatron's inventor, Rory Johnson, was rumored to have been "Number One" on Organization of Petroleum Exporting Countries (OPEC)'s hit list.

The following is an excerpt, slightly edited, from Orlowski's lecture transcript where he tells about his unwitting personal involvement with the U.S. Government's suppression of the Magnatron:

"After I saw the Magnatron motor, my life changed. I was no longer a happy camper working by myself in a wonderful, fully equipped research machine shop for the Greyhound/Armour Corporation in Arizona. While on a business trip, I saw this motor running in the Magnetron, Inc.'s showroom located in Egin, Illinois.

"During my 15 years of electric motor repair, among the hundreds of motors I repaired, I rewound a 500 HP electric motor. That motor had wires exiting it that were the size of a garden hose. The Johnson motor being shown had NO wires. Surely this motor was unreal, a con-job to get money for dealerships. Yes, there he was, Rory Johnson standing next to his sealed self-contained electric motor.

"Upon returning to the Greyhound Towers and telling them what I had seen, they instructed me to call Mr. Johnson. Greyhound wanted Johnson to put forth a plan to install a motor in one of their buses for testing purposes.

"I called Johnson. He was delighted that a Greyhound employee had seen the motor running, and replied that the testing idea was acceptable. He would set a time frame for just when a bus should be delivered to him.

"Two years went by, with no business proposal from Johnson. Then, his former business partner, Mike Marzicola, called to say Johnson had passed away. He wanted me to work with him to get one of the motors running. I flew to Orange County, CA, saw the motor, took pictures, and put forth a plan to Greyhound. Subject to a contract with Marzicola, one of the old worn motors would be brought to the research shop. I would then very carefully reconnect the generator wires that Johnson had cut off prior to moving from Egin, IL to California.

"Discussions with Marzicola brought out that the U.S. Government (given the authority by the Congress of 1952) had issued a GRAB order to take Johnson's motors. Rumor has it, the DOE is run by US oil companies and OPEC, and they want no competition, period. Because of this grab order, Johnson had cut the generator wires. He had then put his 'total shop', with motors and all, on several U-Haul trucks and left Illinois in the middle of the night. He went to California to re-establish his business. But before he could get a motor running, he passed away.

"Surely, Greyhound would agree to let me re-start one of Johnson's motors. The wonderful proposal put forth to Greyhound was rejected by mail. Very agitated, I went to the top office at Greyhound demanding an explanation. I was met at the door with the comment, "We know why you are here." Knowing the potential savings to the bus company, surely they could have only one reason for rejecting the proposal. They must have believed I was not qualified to start up the motor.

"Greyhound's top legal advisor stated he was present when the Greyhound board met and discussed my written proposal. He stated the following, "At NO time was the thought put forth that you would not succeed. In fact, we discussed all of the hardware designed and constructed by you, and started the conversation from what happens when Greyhound has a running motor. We contacted a State representative who felt this motor should not be allowed to be used in 4,000+ buses. The loss in tax dollars for fuel alone would be a very huge sum." He then asked me to leave, stating he was sorry that he had to tell me the reason the plan was rejected.

"Telling Marzicola of the rejection, I offered to personally put in a few thousand dollars toward the parts to get one motor running. In return, I would be assigned the dealership for the Phoenix metropolitan area. We signed legal papers in exchange for the money agreed on, and went to work. (I still have the signed dealership.)

“The first thing I noticed was that someone had been working on repairing the motors. Three motors already had new commutator assemblies installed. Each assembly consisted of 3 commutator assemblies on one insulated tube with a metal case to secure it to the shaft.

“One motor still had the old worn commutator assembly, as it had not yet been repaired.”

Orlowski goes on to describe his reconstruction efforts and includes interesting technical details about the Magnatron’s structure and theory.

Johnson did not know that OPEC tracks all potential competition to its oil business and that he was reportedly number one on OPEC’s hit list. His first mistake was publicizing, in many magazines, his plans to manufacture and distribute his revolutionary motor.

Erik Masen has spoken with a few people who even signed up for distributorships. Erik Masen had included Johnson and his Magnatron in his energy invention suppression anthology (see http://www.electrifyingtimes.com/erik_masen_suppression.html).

In 1979, Johnson placed his engine in a Buick Electra and was preparing to drive it around the country to sign up more distributorships when the US Department of Energy and the State of Illinois teamed up to prohibit his company Magnatron, Inc., from producing and selling Magnatrons. They first placed a gag order on all the people in the company by using the Secrecy Act of 1952. Secondly, the State of Illinois immediately requested the company to provide information about all of their employees, distributors, stockholders, investors, suppliers, etc. They asked questions that blatantly deny anyone’s constitutional rights to privacy. The pressure from the State of Illinois became so overwhelming that Johnson decided to move his entire business to California in the middle of the night.

After a year of hearing nothing but silence from Johnson, Greyhound agents tried to contact him – only to be notified that he had passed away unexpectedly. This is a particularly troubling part of the story, since he had been in his early fifties and in robust health. Later, Greyhound learned that shortly before he died, Johnson had inexplicably moved out of his laboratory in the middle of the night and taken all of his motors and technology to California.

Bob Bass, in his report copied above on low-energy nuclear transmutation, claims that the CIA, the KGB and the Mossad, etc. all have "sprays" which can be sprayed upon someone and cause him or her to die of apparently natural causes. One speculation is that Johnson’s death – apparently due to heart failure – had been artificially induced by such a spray.

In a January 20, 2007 email to Gary Vesperman, Terry Sisson reports:

“Hi Gary,

“I visited Magnatron, Inc., in July 1979. I wish I would have taken a photo. Placards were placed over every inch of the large windows in the front of the building listing all of the questions the State of Illinois requested his company to provide. He wrote, “When has the government ever had the right to ask this of any company.” I peeked in the front window and saw one of his motors mounted on an engine stand. Nobody appeared to be there so I walked around to the rear of the building. I found the rear garage door open and could see the Buick Electra inside. I was about to approach nearer when a man emerged. We talked, but he quickly informed me that due to a US gag order he was unable to talk about anything. I managed to get his phone number and called him from time to time for years following. He was an assistant of Rory’s and he kept the information very close to the vest. He did tell me that it was real and it worked, yet not how it worked.

“About 1984, I began to call all the Johnsons in the phone book in Elgin. I finally got a hold of Rory’s son. He too said that it was real, but I got nowhere. Around 1992, I met Jerry Orlowski, and he told me his experience as the employee of Greyhound who was sent to investigate the technology, since he wound electric motors for several years. Jerry was very upset about the whole incident, particularly Greyhound’s Board of Directors refusal to utilize the technology after he found the technology to be authentic. Jerry even witnessed the government’s seizure of the motors in California. --- Terry Sisson.”

Energy invention suppression-pertinent quotable comments from Johnson:

“There have been very few startling things that have come from a large organization. You don’t get anything practical out of a government-sponsored laboratory such as Fermi and Argonne.”

Johnson believes watching a budget as required by government-funded programs stifles creativity and the ability to take a chance.

The US Department of Energy (DOE) is termed a rip-off by Johnson. "Right now our government is not looking for energy in any form. A tremendous amount of money is spent (on DOE) every year and so far I haven't seen anything out on the road or helping heat your home or helping reduce the cost of your utilities or anything else." (For example, the DOE's glamorous multi-billion-dollar hot fusion research program seems to be fundamentally a public relations ploy which allows the DOE's numerous highly paid bureaucrats to have lots of fun making themselves look useful without posing any serious competition to the oil and power industries for at least decades, and may always be for decades. Gary Vesperman)

Howard R. Johnson: Permanent Magnet Motor

Howard R. Johnson has developed a device resembling an electric motor which produces work without electrical input, using only permanent magnets for motive force. The basic principle of his magnetic motor is that its magnets are arranged in such a manner that its magnetic flux is always unbalanced, thus producing a continuous rotational drive. For patent descriptions, detailed theories and diagrams, see <http://rexresearch.com/johnson/1johnson.htm>. Two links to additional information can be found in <http://www.web-space.tv/free-energy/>. More information apparently is available from the "Permanent Magnet Research Institute", P.O. Box 199, Blacksburg, Virginia 24063.

Johnson spent six years fighting the patent office to accept the reality of his magnetic motor. In April 24, 1979 Johnson finally got a US patent – 4,151,431 – for a Permanent Magnet Motor that starts itself and would deliver 5 kilowatts from permanent magnets. Jet Propulsion Labs built a prototype 5-kilowatt generator.

In his January 20, 2007 email to the New Energy Congress, Ken Rauen reported:

Howard Johnson got his patent because he DEMONSTRATED one in the courtroom. The judge ordered the USPTO to give him a patent. I saw a copy of the court document while in Gene Mallove's employment. Unfortunately, the whereabouts of that document is unknown, as Gene was not a good file keeper, and he is not around any more.

What was demonstrated was a roller skate on a linear track, fitted with magnets, and a line of magnets over the tracks. The track was slightly sloped up, so gravity could not be attributed for the motion. Since it flew off the track end and was not jerked back, it had to have net energy imparted to it.

Ken Rauen

That demonstration looks similar to the prototype of Stewart Harris' theory of magnetic instability (see below).

Johnson's other two patents are No. 4,877,983 for Magnetic Force Generating Method and Apparatus, and No. 5,402,021 for a Magnetic Propulsion System. In all Johnson is connected with more than 30 patents in the fields of chemistry and physics.

The following suppression account is an edited consolidation of information from an exchange of emails between Gary Vesperman and Al Witherspoon, a long-time associate of Howard Johnson. June 2006 Al had read on the Internet Vesperman's third version of this compilation (now in its fourth version) of energy invention suppression cases and had then emailed Vesperman. Al is a businessman and the inventor, in one week, of a crucial part of the Hubble Space Telescope that had stymied other engineers for months.

To refresh memories for Al's story, Al and Howard had some pleasant visits August through October 2006. Howard is now 92 years old but still healthy with a keen memory.

Al's involvement with Howard's project was not from a technical standpoint but rather from the standpoint of technology suppression. Al had never taken the time to write this up. He thinks that it's about time. Al has been holding back his suppression story for nearly thirty years.

Howard Johnson actually began his work on this motor in the 1930's. When he first started the project and conceived the idea on paper, the materials needed for the construction of the motor had not yet come into existence. However, he told Al that he knew that someday they would become available, and then he would be able to construct it.

The suppression of the motor is occurring by the general methods in addition to Howard's own suppression due to his warranted mistrust of fellow scientists. Things have come up missing and promises not kept.

When Howard first introduced the development of his permanent magnet motor there was a nearly immediate world symposium organized and held at Virginia Polytechnic Institute and State University. A number of scientists came from all over the world to attend this event. There was quite a buzz in the air about this new technology prior and existing through some finite time during the event. Al met and conversed with a number of them. A couple of them were actually quite friendly. The rest were seething with egomania and the disinterest of speaking to whom they assumed was a local hillbilly.

It was not a conference. It was merely a one-sided presentation of the technology and there was no entertainment of questions. The rules of the event were such that questions were to be saved for the end of the presentation. At the end of this presentation, the speakers quickly vanished at the moment of the last word. A couple of questions were addressed, but the respective replies were only "I don't know" or "I cannot say at the present time".

The primary focus seemed to be entirely that of debunking the notion of such a device. There was absolutely no positive attitude in the air with the exception of a few attendees who expressed the hope for the further investigation and development of the technology. Most attendees were nearly laughing with skepticism. One who Al spoke with was emphatic with his opinion that the device was viable.

Al recorded the event on audio, but there seems to be no record of it now. Al does not know what Howard did with it. When Al visited him summer of 2006 he could not remember the specifics of the tape or where it might be located at the present time.

Also at the symposium there were a couple of people making an apparently 'approved' video tape of the presentation. There were no other apparent attempts to videotape the event.

Al was the last of the attendees to exit the event. He watched what was done with the video tape.

A man took the video tape downstairs and then discretely gave it to another man. This 'other' man then went to his car and drove away. Al followed him until he arrived at Inland Motors Division of Kollmorgan Corporation in Radford, VA where precision drive motors and systems are manufactured. He got out of his car and went into the building.

Al asked the guard if he knew this man and he said that he was not an employee but was a U.S. Government inspector from Washington, DC. From this point on there is no more information about the identity or the purpose of his actions.

Some months later Al confronted the directors of the symposium. Their words to him were such that they had apparently reconsidered their position of belief concerning the technology. A little later Al found that these directors were under the direct employ of Kollmorgan and also by virtue of the fact that they stood to receive sizeable renewal grants for their respective departments.

Do you suppose that it was Kollmorgan who wanted the technology to be suppressed? After all, they stood to gain by creating disinterest such that they could quietly and anonymously pursue it for their own use without the threat of competition.

A couple of weeks later the house across the street from Howard's house which had housed a few of the working class became occupied by two agents from the National Security Agency. Al acquired the nature of their identity by unusual means. Besides this, they stuck out like a sore thumb, dressed similarly to Mormon missionaries but older in stature. They stayed there for about one year. Periodically Al went by there to see what they were up to but only saw them outside once.

They likely saw Al at Howard's place on numerous occasions but never spoke to Al and reportedly spoke to Howard only once. The nature of the conversation that Howard had with them supposedly had nothing to do with technology but was apparently just everyday common chit chat.

Al wondered what they did all day. He got to thinking that they probably sat around doing what all government officials do, smoking dope without exhaling while watching cartoons without exhaling. Please overlook Al's slight humor.

Then one day they were simply GONE. Al asked the owner of the property who they were. He said that they were Electrolux vacuum cleaner salesmen. Al almost busted out laughing. Al's great uncle was one, and Al has seen several at his front door, but never those that dressed like these guys.

During their stay Al received a rather strange phone call one day in April 1979. A man simply asked for Al, and Al simply said hello, thinking that it was likely one of his customers or a telemarketer.

He quickly identified himself in such a way that Al could not understand his name. When Al asked who was calling he simply replied by asking Al if Al was acquainted with Howard and how long. He was very nice and thus Al answered him due to Al's probable youthful naivety. He then simply said "Thank you" and hung up. Caller ID or the *69 features were not available yet at that time.

On three occasions after this between 1980 and 1983 Al's house was broken into in a nondestructive and undetectable manner, meaning that the method of entry was not discernable as being unauthorized. However it was very apparent that someone had been rummaging through the house in ALL the rooms including the garage and basement. No valuables were ever taken. At the time there was some jewelry, other precious stones, silver, gold and a letter from Robert E. Lee in relatively plain view which at that time were valued well over \$100,000. These were likewise never touched. Since then these items have been removed to a safety deposit box.

Whoever broke in never found any devices or related documentation. However, Howard's house, as far as Al knows, was never invaded until early 2006. Al and Howard have no idea who did this, but there were no prints to be found. They only took documentation which had nothing to do with the technical aspects of the motor or its design. The documents were related to contractual agreements concerning the disclosure of the technology.

In 1985 Howard reported to Al that he had struck a deal with General Electric. For fifteen million dollars the company had purchased an exclusive (but not 'sole') license to make, manufacture, market and utilize the motor. By 1986 General Electric had built a very, very large working model the size of a house. It is not being used and is kept hidden in a building under armed guard somewhere in the United States. (However, it doesn't quite make sense that the company would build such a very expensive large motor when a much smaller, cheaper motor should be adequate for experimental studies. Gary Vesperman)

Al never asked Howard what he did with the proceeds. A reliable source did tell Al that the agreement with General Electric was such that they give the \$15 million to a certain charity.

Since that time there has been no other publicly known activity with the motor by General Electric. Al suspects that the company is using it to get paid by the oil industry to keep it under wraps – industrial/technological extortion or protecting the world, or possibly both. However, this notion is merely a notion and surely speculative.

Al's guess is that General Electric could simply and easily make a substantial amount of money by keeping things quiet while at the same time using it as a card to play when the time is right. Al knows exactly how they could do such.

Howard and Al have found that American and Japanese magnet manufacturers are mysteriously very reluctant to provide the needed magnets. In the report below on "Yasunori Takahashi: Magnetic Wankel Motor" John Moreland explained that the secret to the enormous strength of the Takahashi magnets, at 25,000 gauss the most powerful magnets ever developed, is that they contain uranium. The U.S. Government forbids importing radioactive materials.

Throughout the past twenty-eight years approximately, there have been some reported attempts to construct the motor. Al has NEVER seen one in the possession of any individual outside of the Permanent Magnet Research Institute.

Finally: Howard, by claim and Al's personal opinion, has sufficiently disseminated the technology to the point such that the motor can be replicated. Replication of the motor has apparently achieved little known success. There are reasons for this lack of success.

There seems to be little doubt that this device or similar devices have been built. They are relatively easy to build and do not require any sort of special magnet type in order to be functional. Actually, ordinary magnets are better from the standpoint of the homebrew versions. Very powerful magnets are difficult to keep seated in place. Also, experimenting with super-strong rare-earth magnets without special equipment and training can easily cause injury.

The notions that are reflected in comments made by others as to the theory of operation are not correct by any means. The energy required to charge the magnets have nothing to do with the energy delivered by the motor. Many would say that this is most interesting and important.

Al has found, in the process of examining various cases, that few individuals if any, have the correct blueprints. Also, the blueprints are not a whole lot of help unless a person has a clear understanding of certain principles of magnetism. Though this motor can be successfully constructed with "off-the-shelf" components and not to mention being done so in a crude fashion, the apparently ability of most is not sufficient to attain a working model of the rotary motor.

Al has seen theoretical speculation concerning certain magnetic principles by "respected" members of the HJ Motor Group that further suppress the successful application of the technology. Though likely not intentional it is nevertheless the result of careless thinking and poor technological vocabulary. Such practices propagate inaccuracy and inability to produce any viable results and end up merely creating a vicious circle resulting in lost art and the downward spiral of success.

Al discussed this matter with Howard during one of their visits. They were able to arrive at some conclusion perhaps, but that of which will not presently be disclosed. Al needs to think about it a little more.

As far as participation by other individuals:

To date, there has been no person that has kept their word concerning certain aspects of disclosure. There have been no individuals that have kept up other agreements directly related to the use and dissemination of the technology. Some individuals have replicated Howard's research in various ways, including the distribution for gain, in such a manner as to claim it as being of their own origination. This may include the distribution of nonfunctional blueprints. As far as Al knows, Howard has only and repeatedly been the victim of greed and egotistical lust.

To date, not one single person has ever commented on Al's advice for making the motor work. This show of apparent ignorance eludes Al's belief.

At this point in time Al does not believe that Howard is highly inclined to divulge any more information to the general public or prospective co-participants. The royalties due on his recent book have not been paid either. This situation will change with the publication of his new book containing advanced theory. Those who have any sense, in my opinion, will be well advised to read it.

And as for Al himself: He is presently looking for a few good men. To date Al has only been in contact with one or two individuals who have shown even a spark of integrity. At the present time, there are only two individuals actively involved with the Permanent Magnet Research Institute.

Howard's parting and publishable comment from their meeting of October 10th was simply as follows and quite closely matches his exact words: "If you can't believe what you see, then there is little else that I can do for you."

Al thinks that it's not always the government that suppresses technology. Sometimes it's the individual who bites off his or her own nose to spite his or her face. That is, the government does not need to directly suppress the technology because the citizens are doing a splendid job all by themselves.

However, it should be noted that it is plausible that negative elements hide behind the veil of our good society WHO serve the purpose of being suppressing agents.

It is not necessarily our government which doles out the suppression. They often get blamed for a lot of things which are merely the bad direction of a small individual or group within.

Maybe the distribution of incorrect information is being done by the implant of a suppressing agent(s)?

Virginia Polytechnic Institute and State University does not help Howard though he lectured there for a while. Most of the technologists there are quite jealous of Howard and for whatever reasons seem to be a major contributing factor to the suppression of the technology. The college is where the first world symposium took place. Al was sent there to eavesdrop and record the presentation which was largely an attempt to discredit his work. Al spoke with some of the scientists who attended the symposium. Most were quite skeptical, both about the technology and the true intentions of the lecturers. Some even left in laughter. There were a few who expressed that they sincerely hoped that the technology would come to perform, regardless of any negative opinions.

However, this apparent suppression may have been done with Howard's ultimate blessing since such a discrediting would likely draw attention away from his work yet get the ball rolling for world curiosity and open some minds. Making money at this sort of thing was a hopeful wish for Howard since he is by no means a wealthy man. Aside from this he just wanted to help the world. He reminded Al, however, that not all good things are good for mankind and that the introduction of such technology to the world would indeed be disruptive. After considering his comments over a period of nearly thirty years, Al has come to realize that Howard's concerns may warrant some serious consideration.

Al intends to see Howard again sometime to find out by some gentle fashion if this early suppression indeed was his intention, or if it simply occurred inadvertently. Also Al plans to find out whatever else he can since time is short and Howard, being 92 years old, may not be here for very much longer.

As mentioned above, this account of Al's suppression story is a consolidation of emails exchanged between this writer, Gary Vesperman, and Al Witherspoon up until mid-October 2006. However, I have emailed Al a few more questions. But since then I haven't been able to contact Al by phone and email.

For instance, it is not clear to me whether the two National Security Agency agents had rented a house across the street from Al's house or Howard's house. How were they able to still acquire needed magnets which they weren't allowed to buy? Exactly what did happen at Oak Ridge and Howard's involvement in the development of the atom bomb? What were the real reason and circumstances relating to the Science and Mechanics article? What happened in 1941 at the U.S. Patent Office 37 years before Howard actually commenced construction? What are the details regarding the construction of the generator at Jet Propulsion Labs? What's this about snowflakes and honeybees?

Stewart Harris: Theory of Magnetic Instability

The theory of magnetic instability is a magnetic principle which appears to be the embryo of a valid free energy device. It was invented by Stewart Harris. He applied for a patent in 1978, and it was rejected. Dr. Marion Bowman from Washington, DC traveled out to Mr. Harris' home in Las Vegas, Nevada to witness the operation of the device. He was impressed and returned to Washington enthusiastic about its applications.

Shortly after the demonstration, all copies of the patent application and other information subsequently disappeared from the US Patent Office in Washington, DC. In addition, Mr. Harris' home was broken into and his original drawings, papers, applications, and correspondence were stolen. For some unknown reason, they left behind the prototype. Coincidentally, Mr. Harris lives just a few blocks from the office of Film Funding, Inc., where this writer, Gary Vesperman, used to work in Las Vegas.

For some time I had Harris' prototype on my desk which I delighted in demonstrating to visitors. A horizontal three-inch-long roller cylinder of about five stacked 1-inch diameter disk-shaped magnets rolls UPHILL, without energy input, between two similar four-inch-long cylinders of about ten stacked 1-inch disk magnets placed in parallel with each other and taped onto a cardboard ramp (try 30 degrees up from the horizontal).

Radio Shack sells disk magnets, but they are a little too strong. The horizontal cylinder rolls uphill a little too fast. Try weak disk magnets instead, or strong magnets that are made weaker by thermal or mechanical shock.

I had noticed while playing with Harris' device that the roller cylinder would hang up at the top of the incline. But if the cylinder was immediately picked up and placed back at the bottom of the incline within 60 seconds, it would accumulate enough additional rotational angular momentum of unknown origin to fall over the top of the incline.

At the International Symposium on New Energy that was held in the Denver Hilton South, Denver, CO (25 – 28 April 1996), I asked Dr. Harold Aspden if his “Aspden effect” is the same as the roller cylinder’s temporary accumulation of additional rotational angular momentum. He said it is not. However, Aspden and I decided that it appears to be such an interesting etheric energy phenomenon it should be investigated further.

This is what would make a fine project for a grade school science class: Try magnetic disks of various sizes and strength. For each particular size/strength, carefully record various time delays between the time the rolling cylinder is taken off the top of the incline and placed at the bottom of incline. There might be some type of “half-life” whereby the roller cylinder’s residual additional rotational angular momentum decays with time until the roller cylinder hangs up again at the top of the ramp.

Lester J. Hendershot: Hendershot Magnetic Motor

During the late 1920's Lester J. Hendershot, while working on a new type of aviation compass, stumbled across a method of generating energy. The "Hendershot magnetic motor" made headlines and attracted such big name investors as Charles Lindberg. Hendershot, while attempting to establish a true magnetic north compass, found that by cutting the same line of magnetic force north and south, he had an indicator of the true north and that by cutting the magnetic field east and west, he could develop a rotary motion. He wove together a number of flat coils of wire and placed stainless steel rings, sticks of carbon and permanent magnets in various positions as an experiment. Based on this principle, after two years of trial and error, he built a magnetic motor that would self-rotate, to his surprise, at a constant speed of 1800 rpm while producing 45 horsepower.

Hendershot changed directions and decided to build a generator on the same principle, after deducing that a magnetically-powered motor was not as practical as a magnetically-powered generator. Hendershot had discovered that the Earth’s rotating magnetic field could be used to provide power to motors and generators, much like Nikola Tesla’s discovery that the Earth was a huge capacitor, capable of providing significant amounts of electrical power. Simplified, Hendershot believed that if one were to cut the lines of force of the Earth’s magnetic field, one could harness this to provide direct power to generators and motors. Nikola Tesla attempted to do just that, when he built his “magnifying transformer” at Shoreham, Long Island, NY.

To read the first hand accounts of Hendershot’s historical encounters, see the following research links:

<http://www.time.com/time/magazine/article/0,9171,880984,00.html>
<https://secure.netsolhost.com/nuenergy.org/alt/RadonFuel.htm>
<http://www.clubusenet.com/thread/262719.html>
<http://www.borderlands.com/freeenergy.htm>
http://www-tech.mit.edu/archives/VOL_048/TECH_V048_S0041_P004.pdf
<http://www.clarabow.net/articles/ourreaderswrite.html>
<http://www.freepatentsonline.com/20070007844.html>
<http://www.rexresearch.com/feg/feg1.htm#hendershot>

Hendershot ran into political difficulties in promoting his device, attempted to take his business to Mexico, and finally faded into obscurity having taken a "couldn't refuse" payoff to never work on his device again. (Source: <http://www.srsi.org/sr2/Heat/fed.htm>)

In 1961 Dr. Ed Skilling, from Columbia University, successfully replicated and tested a Hendershot free energy device, out of which he got 300 watts. Skilling had been associated with Hendershot and learned of the device through him. The generator was self-resonant at 500 kHz.

James Watson: 8-Kilowatt Battery-Popper Motor

Thomas E. Bearden, Ph.D., has provided a significant 'account', dated 1999, regarding James Watson located at <http://www.cheniery.org/misc/battery%20poppers.htm>, copied as follows with some editing:

James Watson successfully replicated Bedini's battery energizer (with direct advice from Bedini). Watson made improvements and modifications, and eventually was able to build one and adjust it as he wished. He demonstrated an 8-kilowatt battery-popper motor at the first International Tesla conference in Colorado Springs in 1984.

Later Watson was moving toward development and marketing.

Then Watson and his entire family disappeared. Neither Bedini nor I could locate him. Neither could his financial backer, the late R. J. Reynolds III. This was a researcher and friend whom I was in contact with several times a week. Then bingo! Nothing further.

He [Jim Watson] abruptly and completely broke off all communication with everyone. A squirrely message was left on his answering machine for a few days, saying he had moved (but not in Jim's voice). Then it too was removed. And that was that.

Eerily, it seems that if you call the police in the town where Jim Watson lived, they will tell you he still lives there on the same street in the same house. At least that's what they told a friend of mine who checked a few months ago, which is years after Jim and his family originally disappeared. And that check may be the oddest thing of all. The police implied on the phone that Jim and his family never disappeared. Everything fine. A-OK. And that's a bald-faced lie. He and his family did disappear. No one could find them, regardless of how they tried. His financial backer couldn't even find him.

The clear implication is, stay away from that one. Somebody "from the dark side" may have made Jim the "offer he could not refuse". One may never know what really happened, whether or not Jim ever surfaces again — or has already surfaced again and is living there very, very quietly. But Jim's entire over-unity motor effort ended abruptly, even though highly successful. And even though the motor was almost ready to be put into production.

Watson has not been seen at an energy conference since that sudden mysterious disappearance. No one has had a phone call from him. I have not found anyone I trust who has seen him again.

You have not seen a Watson over-unity power system go to market. You almost certainly never will.

Yet Watson's device was perfected to the point where he could make the things like pretzels, adjust them readily, and they worked every time. They could have been put into mass production very easily. Obviously that made him a grave threat to the energy cartels around the world.

At rare intervals, the energy cartel does suppress an invention and an inventor by making the inventor "an offer he cannot refuse", in Mafia terms. Presently the going price when that offer is made is \$10 million. You take your \$10 million, quit all research, quit your contacts, and you live. But you live very quietly, although you live very well financially.

The engineers who measured Watson's 8-kilowatt machine there in Colorado Springs are still alive. And they know what they measured.

There's one other little thing. At that same International Tesla Conference in Colorado Springs, the folks who were in charge (for the energy barons) of suppressing all successful over-unity devices in the Western world were also there when Watson demonstrated his 8-kilowatt device. There is a certain effect which happens in a battery sometimes for a large over-unity battery popper unit like that, if the device is "for real". Time-reversal operations and wave transductions can occur, resulting in time-excitation charging inside the battery materials, in a negative time charge sense (remember, the over-unity operation is a negentropic operation). After a machine of that type and with that particular internal effects has been used to furnish energy for quite a while, you can make a definitive test on it. Simply hook it to a normal battery charger for that size battery, and start to charge it. You then may find to your surprise that the power will just seem to "disappear" in that battery, without charging the needle one iota, for 16 to 48 hours or longer, and in a rare case for two weeks.

The reason is that wave transduction occurs of your charging spatial energy into time-energy, and so you have to furnish rather enormous energy to get a little bit of that negative-time charge reversed. After you fill that seemingly "bottomless pit", then suddenly the negative time-charge will have been eliminated, and at that point the battery will start to charge up in quite normal fashion.

It is significant that Watson's battery was stolen right out of the machine. Whoever did it, almost certainly knew how to test it to find out if Watson's generator was actually a true over-unity device. If so, then they tested it and found that indeed it was genuine.

And there was only one group there who would have known that little tidbit.

Hitachi Magnetics Corporation: Magnet Motor

Engineers at Hitachi Magnetics Corporation have come right out and claimed that a motor run by magnets is feasible and logical, but the politics of the matter make it impossible for them to pursue developing a magnet motor or any device that would compete with the energy cartels.

Among the obstacles to free energy are the big banks who own or finance the energy industries. Peter Lindemann, D. Sc., offers an analysis of these obstacles in <http://www.wanttoknow.info/newenergysources> or <http://www.spiritofmaat.com/archive/feb2/lindemnn.htm>. Lindemann suggests that the four forces suppressing new energy devices are the world's wealthiest families and their banking institutions, national governments striving to preserve national security, deluded inventors and con men, and the unspiritually motivated behavior of all the rest of us.

Floyd Sweet: Vacuum Triode Amplifier

Floyd Sweet had invented an advanced, solid-state, magnetic power converter called the "vacuum triode amplifier". If it could somehow be made stable over a long duration, it potentially offers an exceptionally high ratio of output power to input power in the range of one million. The somewhat unconventional physics of the device is explained in <http://rexresearch.com/sweet/1nothing.htm>. The site also describes efforts to suppress Sweet's research and development efforts:

Two people from Australia, who claimed they wanted to help Floyd, stole his notebook and promptly asked John Bedini for help in replicating the VTA based on the notebook contents. John recognized the notebook as belonging to Floyd and promptly asked them to leave. However, the notebook was never recovered.

Sweet received many death threats over the phone and some threats face to face. A well-dressed gentleman in an expensive suit, tie, hat, and hundred-dollar shoes approached Sweet on the sidewalk of the street where he lived and introduced himself as Cecil Brown. Brown showed Sweet a photograph of Sweet inside his apartment. Brown then told Sweet that he represented a conglomerate that did not want Sweet's device to appear in the world at this time. Brown further stated that sometimes unfortunate things happen to people who do not comply with the wishes of others. Brown then retrieved the picture and departed.

Gary Vesperman's file titled "Bearden web site on electrical energy" includes these three excerpts written by Tom Bearden:

"A particularly good higher group symmetry electrodynamics, in this author's opinion, is the $O(3)$ electrodynamics founded by Evans and Vigier and further expounded by Evans {[xxxviii]}. Evans has shown that $O(3)$ electrodynamics is a part of the Sachs unified field theory electrodynamics {[xxxix]}.

Thus $O(3)$ electrodynamics can be used not only for modeling "normal" electrodynamic but also for modeling "exotic" unified field theory. Further, it can be used for engineering, so it permits the development of a drastically extended electromagnetic technology which can eventually engineer many new phenomena {[xl]}, including anti-gravitational effects {[xli]}. At least one highly successful antigravity experiment was performed by Sweet, in an experiment designed by the present author {[xlii]}. The weight of an object was steadily reduced by 90%, on the laboratory bench."

"Sweet was fired at from about 300 yards by a would-be assassin, using a silenced rifle. Being old, he stumbled and fell on the steps just as the assassin pulled the trigger. The bullet snapped right by his ear, where his head had just been. Thereafter, Sweet was always deeply paranoid about taking the unit outside his own apartment or continuing to develop it. I personally worked with Sweet for some years." (End of Bearden's report) Dr. Bearden provides more details on Sweet's interesting device in http://peswiki.com/index.php/Site:LRP:Tom_Bearden_Remembers_Walter_Rosenthal_%26_Floyd_Sweet.

John Bedini: 'School Girl' Motor and Battery Energizer

John Bedini, Idaho, designed the 'school girl' motor and battery energizer. Some years ago, three thugs came to his home and beat him severely. For a time he went underground and retracted all information on his devices. See <http://www.icehouse.net/john34/bedinibearden.html>.

Two Inventors: Model T Ford Generator with Magnets Added

About ten years ago, two very clever backyard inventors took a magnetic, electricity-generating flywheel off a Model T Ford, attached stationary magnets in a spiral arrangement to the outside, and developed a self-generating motor-generator, using the pulsed varying distance magnetic spiral principle. This generator continually produced 1600 watts of power with no other input. They demonstrated their generator at UCLA – confounding the professors, students and other observers.

Evidently some heavy-handed U.S. Government/corporate types were in the audience, however, because the inventors never made it home from their demonstration. They were found dead along the highway. Their trailer, containing the generator, had disappeared.

Apparently the Japanese now have the technology, which they are calling the "Magnetic Wankel" motor. (Excerpted with permission from Erik Masen's article "SUPPRESSION FROM HIGHER UP Inventors Beware! The Deadly Campaign Against Free-Energy Devices", *Electrifying Times*, Vol. 8 No. 3, and also in http://www.electrifyingtimes.com/erik_masen_suppression.html.)

Yasunori Takahashi: Magnetic Wankel Motor

Yasunori Takahashi, the famous Japanese inventor who developed the Beta video cassette recorder, has retrofitted his newly developed, super-powerful "YT" magnets into his 15-horsepower Magnetic Wankel motor scooter, claiming he can obtain 15 horsepower from a few amperes of electricity. If the U.S. Government allows the Japanese to export these scooters to America, we will see a further trade deficit in Japan's favor.

Rumor has it, however, that the U.S. Government refused entry to the Magnetic Wankel motor (in Mazda vehicles) several years ago, just as it blocked Honda's super-high-mileage, gas-powered cars at about the same time. Such protectionism may be "good for business" (at least for the oil companies and domestic auto manufacturers), but it hurts others and punishes the environment. (Excerpted with permission from Erik Masen's article "SUPPRESSION FROM HIGHER UP Inventors Beware! The Deadly Campaign Against Free-energy Devices", *Electrifying Times*, Vol. 8 No. 3 and also in http://www.electrifyingtimes.com/erik_masen_suppression.html.)

At the 1997 International Tesla Society Symposium in Colorado Springs, Colorado, John W. Moreland, Ph.D., a health physicist, lectured on his experiments with radiovoltaic electrical generators. (Compare with photovoltaic generators such as solar panels.)

Paul Brown lectured separately on similar work based on converting cosmic rays to electricity. Brown had been working mainly to recreate T. Henry Moray's generator.

Brown and Moreland found a strange quirk of ether physics involved with their over-unity electricity generating devices. It had been assumed by many, including Gary Vesperman as the basis for his advanced self-powered electric vehicle concept, that part of the output can be picked off and fed back directly to the input. The longest Moreland has been able to get his generator to run is three weeks. Then the generator dissipates like a cat getting tired of chasing its tail.

Brown and Moreland were still experimenting with voltage splitting, etc. Moreland said they may eventually have to take a generator's input and output out of the same time domain. For example, simply connect separate batteries to a generator's input and output.

After talking with Moreland this writer, Gary Vesperman, got to thinking that for the self-powered electric vehicle, we could have a computer monitor battery charge levels and from time to time switch around between several sets of batteries. Simultaneously at all times, one battery set is being used for the motor, another set for the generator input, a third discharged set connected to the generator's output, plus possibly some spare batteries.

When chatting with Moreland about electric vehicles, I mentioned the Takahashi over-unity motor mystery. June 1997 Hal Fox had sent me a copy of a 10-minute video showing Takahashi demonstrating his prototype over-unity magnetic motor, also known as a Self-Generating Motor (Magnetic Wankel) with a drive belt turning an alternator. The motor is shown connected to a battery for starting the motor, and the battery is then shown disconnected. Two headlights, connected to the alternator's output terminals, remained illuminated after the battery was disconnected.

A motorbike using the Takahashi over-unity motor was sent in 1996 (?) from Japan to England and then to Mark Goldes in Sebastapol, California for testing. Goldes found that the motorbike had limited range, and the magnets were unremarkable. Nobody could understand why a man of Takahashi's stature and wealth would try to pull a scam.

Moreland explained that the secret to the enormous strength of the Takahashi magnets, at 25,000 gauss the most powerful magnets ever developed, is that they contain uranium. The U.S. Government forbids importing radioactive materials. For some reason, the radioactivity of the Takahashi magnets is being kept secret from the U.S. Patent Office until the Takahashi motor patents have been granted. So Takahashi had to substitute ordinary magnets for his super magnets in his motorbike motor.

Thomas E. Bearden, Ph.D., understands that Takahashi's magnetic Wankel motor has been suppressed by the Japanese Yakuza mob. (Source: http://peswiki.com/index.php/Site:LRP:Suppression:_Alternative_Energy_Systems:_%E2%80%9CNovelt_y_of_Fact%E2%80%9D_Freely_Derived_Sources)

This writer, Gary Vesperman, didn't follow Moreland's explanation during his Symposium lecture how certain radioactive materials can enhance the magnetic field strength of a magnetic material. I had planned to write him for a reference that I could study. Unfortunately I lost touch with Moreland afterwards – mainly because his web site www.aztecpub.com never was active.

Teruo Kawai: Motive Power Generating Device

The key statement of Teruo Kawai's US Patent 5,436,518 for his "Motive Power Generating Device" is as follows: "Electric power of 19.55 watts was applied to the electromagnets at 17 volts and 1.15 amperes. ... an output of 62.16 watt was obtained." Dividing the output power by the input power yields a coefficient of performance of 3.19.

Thomas E. Bearden, Ph.D., explained the Kawai device's operation, placed his explanation on the Internet, and Kawai and party came to Huntsville, Alabama to see him and his associates. At Kawai's urging, they negotiated an agreement with him that they would manufacture and market his systems worldwide; he already had build a closed-loop, self-powering system in Japan. Kawai would fund the entire project.

Their agreement was verbally reached on a Thursday afternoon, late. That night a jet arrived posthaste from Los Angeles, with a Yakuza on board. The next morning Kawai and his party were in fear and trembling, and the Yakuza was in total control. Kawai no longer controlled his own company, his invention, or his own fate. Needless to say, the Yakuza coldly cancelled the agreement, point blank. This happened in front of Bearden and four associates. So there are five witnesses. The Yakuza and party quickly packed up the two Kawai engines that were in the possession of Dr. Bearden and his associates, and departed. No Kawai engine will ever be permitted on the world market. Several other Japanese COP>1.0 electrical power systems have also been suppressed by the Yakuza. Many such incidents — including murder — have occurred over the last decades, right here in the United States. Others will happen. (Source: <http://www.spiritofmaat.com/archive/mar2/bearden.htm>)

Dr. Bearden, inventor of the Motionless Electromagnetic Generator (see above), himself has been the subject of suppression efforts, including death threats. (Source: http://peswiki.com/index.php/Site:LRP:Suppression:_Alternative_Energy_Systems:_%E2%80%9CNovelt_y_of_Fact%E2%80%9D_Freely_Derived_Sources)

Johan Grander: Magnetic Motor

Johan Grander of Austria developed a revolutionary magnetic motor, but was turned down by the Austrian patent office with the excuse: "Inventions which are detrimental to products in existence may not be granted a patent." (Erik Masen, "Suppression of Quantum Leap Inventors", *Electrifying Times*, 2007, Vol. 10, No. 2)

IPMS-Kiev and Arzamas-16: Super Magnets

The evolution of the Soviet view of the material world was reflected in the formulation of a new model of nonlinear quantum mechanics as an implicit function of consciousness. For instance, water is more than just H₂O. Experiments prove water can be affected in measurable ways by subtle influences such as music or whether a person's thoughts are hate-filled or life-enhancing. A more correct understanding of materials has thus enabled super magnets to be developed.

In conjunction with research jointly conducted at the highly secretive laboratories at Arzamas-16 in Khazakstan, IPMS-Kiev has developed a family of magnets with energy characteristics equal to or exceeding those of the best conventional iron-boron-neodymium types, but with the all-important feature that they operate with equal or greater efficiency at extremely high temperatures, up to 250 degrees centigrade. These magnets are so powerful that they have been successfully used to conduct extensive research in a perpetual zero gravity environment. All these experiments have been performed without the use of cryogenics.

Joint ventures of the IPMS with more than a dozen private sector companies to develop inventions were repeatedly sabotaged by the U.S. Government's Defense Intelligence Agency and others. (Source: David G. Yurth, *The Anthropos Files: Tales of Quantum Physics from Another World – 2nd Edition*, 2007)

General Motors Corporation: EV-1 Electric Car

Rodger M. Ward was a two-time winner of the Indianapolis 500, National Stock Car Champion, and multiple winner of the USAC Racing Championship. In 1993 Ward registered with the State of Nevada a Small Corporate Offering Registration (SCOR) for his American Electric Car Company, Inc., whereby 200,000 shares of common stock were offered for sale at \$5 per share. This writer, Gary Vesperman, wrote most of the SCOR's disclosure document/business plan.

Ward's company had developed a new type of automatic transmission that will reduce the power required to propel the car and will allow a longer driving range between charges. His company also had developed a very efficient vacuum system to energize equipment such as power steering, power brakes, door locks, and windshield wipers that would ordinarily require electricity from the batteries used to power the electric motor. In addition, his company had added an extra lead-acid battery to supply power to such accessories as the radio, heater, air conditioner, headlights, and taillights. Thus the power drain of the accessories is isolated from the power used for the electric motor.

Most interestingly, Ward's company had the right of first access, via Las Vegas-based Ashurst Technology Corporation, to a new type of battery invented by the I.N. Frantsevich Institute of Problems of Materials Science, Kiev, Ukraine. Most types of batteries rely on electrochemical reactions. The Ukrainian crystal lattice battery stores the charges in crystalline layers of a sheet-like material similar in appearance to mica. Due to nonlinear quantum mechanic effects, the electrical characteristic of each crystalline layer is that of a capacitor as thin as less than one molecule.

Since capacitance is inversely proportional to thickness of the separation between the layers, the practical consequence of the crystal lattice battery is to electrically function in a manner similar to that of a giant capacitor.

The positive contrasts of the crystal lattice battery with the lead-acid battery are so striking as to justifiably portend a potential revolutionary advance for the electric car industry.

Ward's company initially planned to use twelve 86-pound lead-acid batteries weighing a total of approximately 1000 pounds. These lead-acid batteries were to be replaced with ten 20-pound crystal lattice batteries which would weigh a total of only about 200 pounds and thereby noticeably enhance driving performance.

Lead-acid batteries provide up to approximately 120 miles on a four to five-hour recharge. The crystal lattice batteries could provide up to 400 miles on a one-hour recharge. The crystal lattice batteries can supply constant voltage for up to 94% discharge. Since there is no heat nor waste product buildup as with electrochemical batteries, the crystal lattice batteries can easily last many hundreds of extremely rapid charge/discharge cycles.

The crystal lattice batteries operate well in the temperature range of -40 to +60 degrees centigrade. A side benefit of the crystal lattice batteries is that they are made only of materials which are environmentally friendly, plentiful, and inexpensive.

While the IPMS did provide test samples about the size of a large flashlight battery, they were not able to deliver on their promised 20-pound crystal lattice batteries. The U.S. Government's Defense Intelligence Agency had sabotaged the Ashurst Technology/IPMS joint venture. So the American Electric Car Company, Inc., lamentably failed to bring to market Ward's potentially revolutionary electric car.

Rodger Ward and Gary Vesperman became good friends. (BTW, he drove in city traffic, cutting in and out, etc., like the famous race car driver that he is, not like a normal driver!) Ward explained why the major automobile manufacturers as well as the oil companies suppress electric cars. Only 60% of their total profit is made when a car is sold. The dealers and manufacturers make the other 40% of their profit selling and replacing high-priced parts such as mufflers, fuel pumps, etc. Electric cars are too simple, durable and easily maintained. See his biography at http://www.motortrend.com/features/auto_news/112_news040707_ward/.

The significant profit advantage of gasoline cars over electric cars may be why as portrayed by the movie "Who Killed the Electric Car?", General Motors Corporation didn't fully support and eventually scrapped its EV-1 Electric Car. To be fair, GM claims that it refused to sell its EV-1 Electric Car because it would be unable to ensure the safety and life of the vehicle after parts makers stopped supplying components. GM also claims that the EV-1 had difficulty running uphill and didn't offer air conditioning. GM does claim that its upcoming Volt electric/gasoline car will be more advantageous than the EV-1. Because the Volt will still have a gasoline engine, the Volt should be complicated enough for GM to retain profit margins when maintenance labor and replacement parts are sold.

The complicated gasoline-powered car is fundamentally unreliable and unnecessarily expensive to fuel and maintain. It has required heroic engineering efforts to partly overcome its inherent impracticality.

Within about a year after writing the disclosure document for Ward's company's SCOR, this writer also wrote Nevada SCOR's for Natural Environmental Solutions, Inc., (NESI) and Aimrite Systems International, Inc. NESI had acquired the rights to Frank Richardson's magnet-based electrical generator that required no input power and also a bladeless Tesla-type steam turbine (see above). Aimrite Systems had patented computer-controlled hydraulic shock absorbers and a computer-controlled air ride suspension system. I have ridden a test bus equipped with an Aimrite suspension. Nice ride.

I introduced Rodger Ward to prolific Las Vegas inventor Alvin Snaper. Snaper has 600 patents, processes, and innovations such as the type font ball in the IBM Selectric typewriter and Tang the orange juice drink. Ward became enthusiastic with Snaper's demonstration of a prototype of Snaper's invention of a compressed air-driven air conditioner/heater. It relies on the principle of a vortex tube. Air whirled in a vortex tube separates with the cold air molecules collecting in one portion of the tube, and the warm air molecules collecting in another portion of the tube. The cold air is expelled from one end of the tube, and the warm air is expelled from the other end. It can be switched between providing 90% cold air and 10% warm air, or 10% cold air and 90% warm air. The metal tube is about a foot long and a half-inch in diameter with a two-inch long compressed air intake tube perpendicularly attached about three inches from one end. The intake compressed air requirement specifications are 7 CFM at 40 PSI. The volume of air expelled is twice that of a refrigerant-type automobile air conditioner while requiring only one-fourth the horsepower. Also, no warm-up period is required as with conventional air conditioners or heaters. Its efficiency is nearly 30%.

Alvin Snaper also had invented a low-temperature nondestructive process for increasing the durability of vehicle parts and tools with diamond or titanium nitride. A few years later, Snaper invented a high-performance nickel-iron battery very suitable for electric vehicles.

The Ukraine's IPMS had also invented a basalt/carbon fiber foam which is extremely strong yet lighter than fiberglass. A test vehicle made with basalt/carbon fiber foam parts was reportedly the only vehicle ever tested that can cut through a cast-iron London taxicab in a collision. (See below: "IPMS: High-Temperature Gas Plasma Detonator".)

Just for fun, I then combined these technologies into an "advanced self-powered electric vehicle concept". A current version with more details and additional technologies is available in the category "Speculative Advanced Electric Vehicle Concept" (<http://www.iiic.de/docs/GVShortSummaries1-46a.htm>). In addition, at a public meeting (14 September 2005) held in Green Valley Ranch Casino, Henderson, Nevada, regarding the proposed Regional Fixed Guideway traversing Las Vegas, Nevada, I submitted suggestions for possible power sources for the train, most of which also seem suitable for self-powered sources for vehicles (see <http://www.rtcsonthernnevada.com/rfg/documents/September2005PublicMeetingMinutes.pdf>), pp. 19-77).

The Pulsed Abnormal Glow Discharge (PAGD) reactor uses high-density charge clusters to produce useful positive AC-to-DC electrical power conversion gains such as 483%. It's an over-sized glass vacuum tube which is constructed and electrically driven within a narrow range of DC voltage so that it operates with negative resistance.

Dr. Paulo and Alexandra Correa, "New Energy Electric Power – Now! Pulsed Abnormal Glow Discharge Technology," Infinite Energy: Cold Fusion and New Energy Technology Volume 2, No. 7, March/April 1996, p. 18. Gary Vesperman's compilation of "Advanced Technologies for Foreign Resort Project" in <http://www.icestuff.com/~energy21/advantech.htm> includes a chapter on the PAGD reactor.

US Patent 5,416,391 for Electromechanical Transduction of Plasma Pulses. US Patent 5,449,989 for Energy Conversion System. US Patent 5,502,354 for Direct Current Energized Pulse Generator Utilizing Autogenous Cyclical Pulsed Abnormal Glow Discharges. Paulo N. and Alexandra N. Correa, Ontario.

The Correas have demonstrated 1-kilowatt outputs and have run motors under load with these PAGD reactors. GM was interested in the PAGD reactor, as the company's electrical engineers loved it. Upper management killed it, and told the Correas, "The electric car is window dressing."

IPMS: Energy Storage/Battery Devices

During the summer of 1984, airborne intelligence surveillance teams of the United States Air Force, operating out of specially configured and equipped Boeing 707 airframes (called AWAC's) electronically detected (and then shortly thereafter photographed) bursts of coherent light of enormous power originating in the vicinity of Dushambe, Turkministan. The bursts of light, a brilliant blue-green color, lasted just a few seconds and were shifted almost to the ultraviolet end of the light spectrum. The "laser" beams were directed upwards out of the atmosphere towards American military communications satellites.

At precisely the same time the AWAC's detected and photographed the laser bursts (they were referred to in that jargon by American military analysts but later proved to be something almost entirely different), several of the satellites essential to America's global military command and control communications systems became inexplicably inoperable.

The Defense Intelligence Agency, under the direction of the National Security Council and assisted by the National Security Agency, escalated its surveillance of the remote site in the Ural Mountains from which the bursts first originated. For several months, during a concerted campaign of uninterrupted observation by AWAC's and American spy satellites, no additional bursts were observed or reported. Then, without warning, in the middle of the night nearly seven months later, AWAC's crews operating just outside the territorial airspace of Afghanistan detected similar laser bursts of lower intensity during a period of intensive localized ground warfare.

The Afghanistan bursts were apparently aimed at targets under attack by Soviet infantry units. The laser bursts continued in a sustained, localized but obviously mobile attack pattern, as frequently as four or five times per hour, until nearly sunset of the next day. Photographic evidence gathered at the time by the AWAC's crew, and later corroborated by photographs taken at the actual site of the fire fight and forwarded to the U.S. for analysis, showed that the targets of the laser bursts were ammunition and fuel supply depots located in the remote desert. Several of the ammunition and fuel caches had apparently been destroyed during the attack, as demonstrated by the evidence of explosions, fire, smoke and residual infrared heat patterns detected, photographed and electronically recorded on-board the AWAC's.

All this information was transmitted (via encrypted communications bursts, routed through the military Global Command Control satellite system) to the National Security Agency (NSA), located at Fort Meade, Maryland. Analysts there recognized that they were looking at evidence of a weapons system which had never been observed before. They did not know what had produced the laser bursts. But they did know that the technology which made such a thing possible was not available to the countries participating in the NATO Convention. They were terrified at the implications of such a development.

Within hours, the information was packaged into classified documents and conveyed to the Joint Chiefs of Staff. The Joint Chiefs examined the information while they were being briefed by the AWAC's crews which had witnessed and recorded the events. After the briefing, the crews were dismantled, and their various members stationed far away from one another, with orders never to discuss the events they had witnessed. Officially, the laser bursts never had occurred.

Secretary of Defense Frank Carlucci took delivery of the packet at his residence in Falls Church, Virginia, three days later, at a private, secret meeting held in the middle of the night. No one has yet adequately explained why the Joint Chiefs waited three full days to brief the Secretary. Early the next morning, he was driven in a specially prepared bulletproof limousine to the White House. He personally delivered the information to the new President of the United States, Ronald Reagan. The content of the Secretary's report had an immediate, measurable impact.

It was this series of events which principally precipitated the Strategic Defense Initiative, a program of military defense and reprisal based on America's state-of-the-art satellite-borne laser-optical and particle accelerator technologies. The S.D.I. system was intended to provide the U.S. with a meaningful deterrent to further aggressive use of the technology developed by the Soviet Military.

There was only one problem with this system, aside from the fact that its astronomical costs almost bankrupted the American economy: it did not work. S.D.I. was designed to respond to a kind of technology which was not achievable in the West, and which could not be explained by any of the models, materials, technologies or sciences known in the West.

In 1985, the top-secret military version of the space shuttle, code named Atlantis, embarked on a special orbital mission. One of its mission assignments was to retrieve, examine or photograph the military spy satellites which had been disabled by the laser bursts recorded in 1979-84. The results of this investigation have not been declassified or released in any but the most censored version to the public. What we do know for certain, as a matter of publicly available non-classified information, however, is that each of the disabled satellites appeared to have had at least one, and in some cases as many as four or five precisely measured holes, approximately the size of an American silver dollar, melted completely through them from the outside.

The photographs taken of the satellites show evidence of intense heat, charring and carbonized residue evenly distributed around the perimeter of each hole. The evidence is clear and unmistakable – the satellites were disabled by a coherent beam of some sort, characterized by such intense energy that it was possible to melt consistently measured holes through the exterior and interior components of American military satellites, after having passed through the atmosphere of the planet and into space for as many as 325 miles. Such a thing has scarcely been dreamed of by the American military, much less put into any but the most nominally effective operational form.

After more than ten years of political, economic and technological wrangling, and after the expenditure of more than one hundred twenty billion dollars in largely ineffectual research and development efforts, it is inescapably clear that no amount of money or political pressure, no amount of geo-political posturing or economic sanctions was going to compel the disclosure or replication of the technologies which produced the results photographed over the Carpathian Mountains and the Afghanistan deserts. The Soviets had developed a weapons system which was so revolutionary that it could not be explained, replicated or defended against.

The Reagan Administration's lack of specificity about the nature of the implied threat to which S.D.I. was supposed to respond subjected the Administration, the Defense Department and the R&D proponents of the most prominent American aerospace corporations to an endless barrage of charges by the Press and the Congress. They were characterized as being disingenuous and accused of being unreasonably secretive during successive appropriations battles in the Congress.

The truth of matter is that the Administration and the Pentagon were not being disingenuous at all. They simply could not admit to the American public that they were attempting to develop an effective response to a weapons system which they did not understand and could not replicate.

There are a number of issues intrinsic to this set of circumstances, along with several dozen others which, though less well known or economically dramatic, are no less important from a technological standpoint. It is certain that the implication of these technologies has not been lost on those multi-national corporations whose entire capital structure may be threatened by the new sciences, technologies and materials which have been developed in secret laboratories, hidden in caverns excavated beneath the Carpathian Mountains, in the former Soviet Union.

Over the past decade the West has enjoyed occasional gratuitous glimpses into the heart of Soviet science. Attempts to disclose or discuss these developments in the press have been ruthlessly suppressed by powerful special interests vested in both the public and private sectors.

The science which underlies the series of events recounted here remains at the outer limits of the most advanced technology of which the West is capable. The questions posed by the military and corporate analysts about this laser beam weapons system are far-reaching in their scope and implications. Some of them are illustrative:

1) **New Model of Quantum Mechanics:** The sciences and models of quantum mechanics which produced such stunning recent developments in the West as the laser and maser make quite clear how much energy is required to create a beam of coherent light powerful enough to penetrate the atmosphere, retain its coherence in spite of atmospheric diffraction (and other effects described in quantum mechanics as “thermal blooming”), and melt a two-inch hole clear through a satellite made of the most sophisticated alloys ever produced in the West. Except for limited short-distance demonstrations conducted with industrial grade lasers used in cutting operations, there is no known combination of materials or technologies extant in the West to make such a thing possible.

2) **New Materials:** The materials necessary to create an electrical charge large enough to power a device capable of producing such a beam certainly do exist. In quantum mechanics the term large enough does not make sense, but we can agree for the purposes of this discussion on the effect of it as represented by such commonly accepted constructs as frequency, voltage, current and ionic flow rates [as distinguished by the phenomenon of resistance].

Hydroelectric plants and large, fixed-base nuclear power plants are capable of producing enough energy to theoretically power such a device. But the energy bursts in both the Carpathians and the Afghan desert were generated by sources which moved from one location to another. In order to do that, several additional considerations must be addressed:

a. **Portability:** The power source would have to be transportable or be capable of storing sufficient energy to repeatedly power such a device. Western technology cannot produce either a portable power production unit or energy storage system capable of the performance requirements everyone agrees must be met to make the weapons system work, either in the laboratory or in the field. System portability was the most puzzling feature of the NSA/DIA report.

When carefully analyzed, the computer-enhanced enlargements of the photographs taken by the spy satellites and AWAC’s crews failed to provide evidence of any tracks which could be attributed to wheeled or tracked vehicles operating in the precise locations and at the same time as the laser bursts which were observed. The implications of this set of circumstances was almost too much to believe – the devices were apparently either hand held or transportable and rechargeable in such a way as to allow them to be transported by one or more foot soldiers, without vehicular support.

b. **Enormous Power Requirement:** The materials and technologies used to construct a device capable of generating a beam of such enormous power and magnitude would have to be sufficiently advanced to enable the components to be transported without damage over significant distances in unpaved areas of very rough terrain. Such strategies, engineering techniques, construction technologies or materials do not exist in the Western inventory.

c. **The continuous repetition** of the laser bursts suggests that the devices can be operated repeatedly at short intervals of 12-15 minutes. This means they can be triggered with significantly higher frequency and intensity than anything which can be produced in the West, even for laboratory use. Industrial strength lasers used to cut metals require careful setup, accommodate only limited use in short bursts, require extensive cooling and must be continually recalibrated. These limitations obviously did not apply to the devices being operated in the Afghan desert. Analysts at AMTL agreed that the units would either have to be recharged via an external, independent device or somehow be capable of self-recharging in the field.

Such a thing is almost unthinkable by current Western military standards. Not only can we still not replicate the technology in any meaningful form, but the Soviets had refined the technology to a point which allowed it to be carried on the shoulders of ordinary foot soldiers and recharged in the field without motorized support.

Unbelievable! How was such a thing possible? According to some of the highly qualified scientists who scrutinized the photographs, it is not possible. The “Not Invented Here” syndrome is alive and well in the American engineering community. Some of them still insist that the pictures were either fabricated or demonstrate something completely different than this narrative suggests.

3) **Energy Recharge-Batteries:** How did such high-intensity laser beam generators get recharged in the middle of the Afghan desert, in the absence of powered support vehicles or fixed-based power plants? There are a number of possible alternatives. They could have been powered by some sort of advanced battery technology. It’s possible, but if the battery technology used in the West is used as a model to support such a thesis, it would take a bank of the most sophisticated batteries ever designed by NASA, arrayed in series and parallel configurations larger than five full-sized Soviet T-60 tiger tanks to power such a device.

This theoretical battery bank, operating at 100% efficiency (which is not practically or theoretically possible; the best batteries manufactured in the West operate at less than 60% discharge efficiency), could conceivably produce enough direct current voltage (in a zero resistance super conductive circuit, which is not possible, either) to perhaps produce one burst of light equal in intensity to 20% of the power required to burn a 2-inch hole through a satellite moving at 20,000 miles per hour at a distance of 325 miles. Soviet ground forces were generating bursts of this magnitude every 12-15 minutes for more than 10 hours with nothing but ground troops. During eight hours of this exchange, it was totally dark. Something pretty remarkable must have been going on to make such a thing possible.

4) Energy Recharge – Solar Cells: Another alternative would have been to have whatever energy storage devices were being used to power the “laser cannons” recharged by sunlight. The state-of-the-art in photo-voltaic cells produced in the West simply would not support such an undertaking. The very best solar cells ever produced in the West have been produced by the Japanese.

These cells operate at a maximum of 19% efficiency - that is, they convert as much as 19% of the ambient visible sunlight shining on a clear, cloudless day into ion flow, which then becomes low voltage direct electrical current flowing through a circuit. The Japanese panels require months per section to manufacture and literally cost more than their weight in gold to manufacture. They are very heavy and are so sensitive to vibration and calibration that once installed, they cannot be moved at all.

Photo-voltaic cells capable of providing enough electricity to recharge a theoretically infinite energy well would have to operate at efficiencies of 50-80% to recharge batteries of infinite electrical capacity with enough power to trigger such a device. Such cells would have to be very light weight and able to withstand extremes of heat, cold, vibration, dust, wind and other conditions encountered in a hostile battlefield environment. Nothing like that exists in the Western technological arsenal.

5) Dielectric Materials – Transformers and Capacitors: Another consideration must be reconciled before this issue can be theoretically put to rest. In order to produce a burst of coherent light of sufficient intensity to have the effect which was observed and recorded by the surveillance teams, the voltage and amperage required to support such a device would have to be staggeringly high. In order to operate at all, the voltage supplied to the system must be released all at once, not in a continuous stream but in a single coherent burst so intense that any materials known in the West would either evaporate or melt. Not only would the best dielectric materials known to Western Science melt because of the heat produced by such enormous energy bursts, but before a bolt of energy of this magnitude could even be released to such a device, it would have to be accumulated and stored somehow.

A similar set of requirements of a less dramatic type is present in all the electronic devices manufactured and marketed in the West. This includes the entire range of electronic devices such as VCR's, computers, televisions and sound components, telecommunications, information storage, transmission and retrieval systems of every kind. We could not live as we do without them. The components which convert, store and release ion flow into the circuitry of these devices are known as transistors, transformers and capacitors.

This discussion delves into a slightly technical area here, so non-scientific types will need to either become familiar with the fundamentals of electricity to understand what is meant or simply give it a possibility that what is developed in the next section is a true representation of the way such things actually operate. The discussion deals with such commonly used and seldom understood concepts as voltage, current, frequencies and resistance.

(a) Transformers convert voltage at one level of current (amperage) to either higher or lower voltage levels. When the voltage is increased, the amperage or current is proportionately decreased. A low voltage produced at a high current level can be transformed into a much higher voltage at a proportionately lower level of current or “power.”

(b) Capacitors: The decrease in amperage which accompanies a transformation of low voltage to higher voltage is often compensated for by a device known as a capacitor. In the most simplistic terms, capacitors “store” electrical energy until the amount of voltage and current reach a certain minimal threshold. When that point is reached, the entire store of energy is released all at once in a single burst.

The tantalum materials used in the West to manufacture such devices conform to certain standard rules which are commonly accepted by electrical engineers. These rules have only recently been stretched by new technologies and materials developed in the West. For the purposes of this discussion, though, it is safe to say that electrical engineers have long relied on these rules because they have always produced the same results when applied in the same way. Here's an example.

It is standard engineering fare which dictates that a transformer capable of accommodating one volt at one ampere of current across a grid of one ohm of resistance will be one cubic meter in dimension. If followed to its logical conclusion, this standard rule of electrical engineering would require that a transformer capable of supporting a laser burst device of the kind operated by the Soviet ground forces in the Afghan desert would have to be approximately the size of a building built on a base 100 feet to a side, nearly 150 feet high.

Surely such a device could not have been hidden from the AWAC's eye in the sky which can clearly photograph the letters on a license plate from 60,000 feet altitude, nor could it have been moved on the shoulders of ground troops without wheeled vehicular support. The fact that there was absolutely no trace of such a huge, massive transformer device (or any other kind of structure or vehicle which could be construed to serve that purpose) means that something else must have been used instead. Military analysts had absolutely no idea what it could have been.

Such a burst system cannot operate without a capacitor of some sort. A capacitive device capable of storing the amount of energy required to power a single burst from a laser cannon, made of the most advanced dielectric material known in the West, would have to have been equally massive and, further, would have to have been cooled by some sort of strategy which would have been instantly and unmistakably detected by the infrared cameras and spectroscopic scanners used aboard the AWAC's and the spy satellites which investigated the scene.

The practical requirements of such a system are best demonstrated by the massive equipment required to operate and cool the Super Conductor Super Collider linear particle accelerators recently designed by the United States and Japan. No evidence of any such capacitive device was recorded in either the Carpathian Mountains or the Afghanistan desert. How can we explain it?

Without going into any detail about how the technologies were developed, suffice it for now to say that the Soviet ground forces in Afghanistan were equipped with a prototype of a hand-held plasma beam accelerator, the likes of which had only been roughly imagined by American military analysts. The device relied on some innovative strategies. Among these were:

Energy Storage Devices: The power source for the Soviet light cannons was comprised of a back-pack array of specially designed energy storage devices. The closest thing we have in our vocabulary to compare to them is described by the term "battery." In the limited sense that these devices store electrical energy, they are batteries. Any other similarity to the batteries we are accustomed to in the West ends there. The literal translation of the Russian name for them is energy accumulators.

The batteries relied on in the West are based on the chemical properties of components which, when combined in certain configurations and proportions, interact chemically with one another. The result of this chemical interaction is that it creates both heat and a stream of liberated ions – electricity. In dry cell batteries, the process of chemical interaction is one way – once they have been expended, they are simply disposed of. It is estimated that more than 12 billion expended dry cell and lead-acid batteries are dumped into America's landfills every year.

Other batteries are designed and constructed so that the chemical reactions which liberate electrical current are reversible in some degree. These rechargeable cells are characterized by the lead-acid batteries which are used in automobiles and in commercial and industrial applications. Various strategies have been developed to make batteries relying on chemical reactions maximally effective, but the theoretical limits of effectiveness of such devices have surely been reached.

A consortium of aerospace companies working with NASA recently announced the development of an advanced sodium-hydride-based rechargeable cell which is the most efficient battery yet invented in the West. Unfortunately, it operates at an ambient temperature of 2000 degrees centigrade and, if allowed to reach temperatures outside a very narrow safe operating zone, will explode with the force of a small thermo-nuclear device of approximately ten-kiloton yield. It is not safe, but it is the best Western science has come up with.

The energy storage device developed by the I.N. Frantsevich Institute for Problems of Materials Science (IPMS), Kiev, Ukraine, works on a completely different principle. Its construction is the result of a completely unique nonlinear quantum mechanical model which makes it possible to create crystalline lattices of absolutely pure carbon (and other materials) in sheets of infinitely variable dimension which are exactly one molecule thick. The crystal formation techniques and the whole body of new science which allows for their creation in the first place are completely unknown to Western science.

The mono-molecular sheets deposited by this technique are wrapped back and forth on top of each other, more than one million times per millimeter, and are separated from each other by a distance of less than one atomic diameter. At this level of construction, the material becomes subject to the rules of quantum mechanics which are almost entirely probabilistic. That means a whole atom of carbon (or almost anything else except an electron or photon) will not fit in the space which separates the lattice sheets.

When viewed under an electron microscope, the sheets produce a pattern which looks for all the world like an endless field of four-sided pyramids, connected base to base, on a single plane, with the tips of the pyramids protruding endlessly, uniformly upwards. When wrapped back and forth on top of each other, these sheets of pure carbon crystal, made of carbon molecules shaped like trillions of identical tiny pyramids, all arrayed endlessly in identical formation, are positioned so that the tips of the pyramids on the bottom sheet are matched with the tips of the pyramids on the top sheets. What remains between the pyramid tips are open “spaces” or energy wells.

The quantum physics which describes the characteristics of the energy wells created between the layers of crystalline lattice is largely unknown to Western physicists. The Soviet model predicts with a high degree of probability that the quanta of energy referred to in the West as electrons (and, in some cases, photons), the stuff of which electricity is made, will, when introduced to the lattice structure, search, find and fit into the energy wells with military precision.

During the recharging or loading phase, the energy storage devices made of the crystalline lattice material channel one electron at a time into each well created by four carbon pyramids on the bottom layer and four carbon pyramids on the top layer. Because the rules of quantum mechanics which operate in this tiny environment demand it, each electron or quanta of energy has a certain polarity, spin and “color” (and other mathematically defined characteristics) which must be accommodated if it is to find, fit and stay in an energy well. Interestingly enough, when a current is applied across the lattice-work structure, the electrons behave precisely as nonlinear quantum mechanics predicts they will. They flow much like a fluid into the lattice field, then separate into individual energy quanta and spin into the last energy well in each layer, automatically adjusting their individual spin, polarity and color to match their characteristics to fit the requirements of each well, until the lattice is full.

Because no chemical reactions are involved in the process of marching electrons into or out of the energy well fields, there is no resistance in the circuit. In the absence of resistance, the electrons fill the wells at light speed, never missing a space, automatically adjusting polarity, spin and other characteristics, and creating no heat. The amount of time required to “charge” such a cell is less than 5% of the time required to recharge a conventional chemical battery of similar voltage and current.

The validity of $E = MC^2$ is called into question by the way these devices function. When the battery is fully charged, it actually demonstrates more mass than when the energy storage device is empty or discharged. The laws of quantum mechanics relied on in the West state categorically that this is not possible. It is the answer to the question, “How much does a beam of light weigh?”

According to the Soviet model, this is precisely as it should be. When this phenomenon was first demonstrated to scientists in the West who were testing the energy storage devices at INEEL in Idaho, they were thunderstruck. The quanta of energy, or electrons as we refer to them, which are poured into the crystalline lattice demonstrate characteristics of mass even though they are bundles of pure energy sitting in stasis, literally at rest. The characteristic of mass is verifiable – you can measure it by weighing the energy storage devices before and after they are charged. When they are charged, they demonstrate appreciably more mass than when they are fully discharged.

If this is confusing to you, to suggest that pure energy can be shown to demonstrate verifiable mass while at rest (in stasis), perhaps you can begin to appreciate how fundamentally different the physics of all this is when viewed in the terms of Einstein’s classic equation $E = MC^2$.

The existence of this technology clearly is proof positive that not only does energy demonstrate the characteristics of mass, but it does so in a state of non-motion or stasis, sitting idly in an energy well. A state of stasis is a very far cry from the terminal theoretical velocity required by the constant in Einstein’s equation, equivalent to the square of the speed of light.

The scientific implications of this phenomenon are truly staggering. At very least, the verification of mass as a property of energy quanta at rest suggests that Einstein’s theory of relativity may be altogether incorrect as a means of describing the dynamics underlying the real nature of the material world and its relationship to energy.

The existence of this technology suggests, at very least, that energy and mass are equivalent characteristics of all things which are manifest in the material world. It is this fundamental contextual difference which distinguishes the Soviet model of quantum mechanics from the Western model. "The proof of the pudding," they say, "is in the eating."

Theoretical physicists may argue endlessly about the validity of the assumptions relied on by the IPMS scientists to develop their unique sciences, technologies and materials. But they cannot argue about the existence of the materials which have arisen from that context. They are as real as they can be. And they are unlike anything ever seen or contemplated in the West.

In the same way energy quanta stored in the energy wells of crystalline lattice materials demonstrate complete mathematical satisfaction with staying there indefinitely, when allowed to flow out in the form of an outgoing wave of electrical discharge, these quanta (electrons or photons, as you prefer) march right back out without resistance at light speed through a closed circuit to another use.

When these energy storage devices are discharged, they demonstrate other attributes which are not known in Western science, and which, because of the very nature of the chemical reactions we are accustomed to, are not theoretically possible according to conventional wisdom. Conventional chemical batteries, when fully charged, produce electric current at a useable voltage for perhaps 30-40% of the total discharge cycle. After that, either the voltage or amperage (or both) drop to low enough levels that the devices being powered by them cannot recognize or use the electrical current which remains available. At that point, the batteries either have to be recharged or replaced.

The crystal lattice batteries have been demonstrated to produce precisely the same current and voltage levels throughout 98% of their discharge cycle. They produce no heat during discharge, regardless of the rate at which they are discharged. This is absolutely contrary to our experience with batteries, transformers or capacitors. Until the crystalline lattice materials were specifically engineered to register an electronically detectable blip at 95-96% discharge, it was impossible even for the scientists who developed them to distinguish a partially discharged battery from a fully charged one.

There is another characteristic which is intrinsic to energy storage devices which comes into play here. It is a characteristic of materials which is described as energy density. For non-scientific readers, this concept can simply be construed to mean the amount of measurable electrical current which can be produced by any device or material when its mass is converted into electrical energy. The concept is expressed in mathematical formulas as the number of watts and hours of consumable energy which can be converted from each kilogram of material. It is expressed as watt-hours per kilogram.

Here is an example we can all understand. Consider gasoline. When converted into electrical power at 100% efficiency, gasoline has been theoretically shown to have an energy density of between 550 and 600 watt-hours per kilogram of mass. In easy terms, that means that if one kilogram of gasoline were converted into pure electricity at 100% efficiency (with no loss due to heat, resistance, waste, etc.), the reservoir of energy would power a 100-watt light bulb for 5.5 to 6 hours.

Most of the high-end conventional automobile batteries of the lead-acid variety operate at an energy density rate of between 20-25 watt-hours per kilogram. The best NASA sodium-hydride batteries operate at 48-50 watt hours per kilogram. The energy accumulator devices which have been tested at the Idaho National Electronic Laboratories have demonstrated energy densities of between 850 and 1050 watt-hours per kilogram.

What does this mean in practical terms? It means, for one thing, that for the first time in the history of science an energy storage device has been created with an energy density which is greater than gasoline or any other refined fossil fuel. It means that devices which rely on these energy storage technologies can theoretically be designed to store and deliver clean electrical power at higher rates of efficiency than any fossil fuel ever discovered.

The global implications of this technology are irresistible. It means, among other things, that the technology exists, right now, to eliminate the need to build another nuclear power plant or dam another river to produce hydroelectric power. It means we can no longer justify burning another ounce of petroleum, another piece of coal, another cubic centimeter of natural (or unnatural gas) or another tree to produce heat, electricity or power for any purpose, including transportation.

When coupled with the plasma beam devices being tested by the Soviet infantry units in Afghanistan, these energy storage devices operated at such unbelievably high rates of discharge efficiency that they made it possible to repeatedly induce huge electrical discharges in a highly mobile configuration.

The same technologies which were used to produce the energy storage devices have been adapted to create transformers and capacitors with previously unimaginable performance characteristics. Instead of adhering to the conventional western model of "One Volt at One Amp across a resistance of One Ohm equals One Cubic Meter," the Soviets have produced a capacitor which measures more than 1200 farads at 10,000 amperes in a package the size of a tuna sandwich.

When tested by the Technology Materials Testing Laboratory of the Defense Department at the Pentagon and at the I.N.E.E.L. in Idaho, totally new testing equipment had to be designed, engineered and constructed just to test the devices. The scientists at those laboratories had never tested anything like these materials before.

Instead of having to house transformer and capacitor devices in a series of trailers towed by diesel tractors or huge fixed-base facilities, the operating apparatus which supplied transformed power and high intensity capacitive bursts to the light cannons weighed less than ten pounds and could easily be transported in a backpack by a foot soldier.

One final question remains unanswered. "How did the energy storage devices, once dissipated or discharged, become recharged in the field, especially in the dark of night?"

The back-pack plasma beam device detected by the AWAC's during limited combat use in the Afghanistan desert was powered by energy storage devices constructed of crystalline lattice materials. After each laser burst, the energy storage devices were recharged every 12-15 minutes (nearly 45 minutes in the dark of night – the residual ambient heat of the desert is a very efficient source of infrared energy) by sunlight, collected and converted to electricity by four-foot square panels of "solar cell" material arrayed on a pole like a flag, each weighing less than ten ounces.

The electrical energy stored in the back-pack energy accumulators was transformed into enormously high voltages and released at almost unbelievably high current levels when the super-capacitors were sufficiently charged. The beam of "light" detected by the AWAC's crews was a field of plasma, flowing at the speed of light and demonstrating characteristics of mass (and, therefore, kinetic energy). The phenomenon represented by these bolts of lightning are not comprehensible according to the model of quantum mechanics and plasma physics currently being used in the West.

Battery packs utilizing these energy accumulator materials have been designed, produced and tested which provide more than 14 hours of continuously transmitted power on a single charge to conventional hand-held cellular telephone devices. Similar improvements in conventional battery/energy storage capacity have been developed and are being tested for such devices as video camcorders, laptop and portable computers and other similar consumer, commercial, industrial and military applications.

IPMS research in the field of layered crystals has thus led to the creation of capacitors with a very high level of capacitance (measured in farads). This technology is based on a revolutionary production technique which forms polarized surfaces of one molecule thickness, separated by less than one atomic diameter of space, held together by weak Van der Waals energy forces. The special properties created by these layered crystalline structures provide previously unimaginable internal surface areas. Super capacitors are constructed of layered materials numbering more than one million dipole sheets for each millimeter of crystal thickness.

These devices provide a virtually limitless number of charge-discharge cycles at astonishingly rapid charge and discharge rates. The potential impact of such devices on all electronic equipment currently being produced is incalculable, since virtually all electronic devices rely extensively on the West's state-of-the-art tantalum capacitance technologies.

At present, IPMS has on hand (among others) a super-capacitor roughly the size and dimension of a sandwich which develops more than 1,200 farads at 10,000 amperes. It also boasts production of a battery whose active mass energy density exceeds 850 watt-hours per kilogram. For the non-scientist (and all the rest of us as well) this means that a "battery" has been produced which, for the first time in history, produces more power per unit of mass than any fossil fuel ever devised.

Prototype testing of larger-scaled devices designed specifically for providing power to electric vehicles is currently underway. Prototypes are expected to be capable of sustained highway speeds of up to 70 miles per hour with a range of 525 miles on a single charge. The power plant for this application has been recently improved by the inclusion of a proprietary solid-state ceramic electric motor which weighs 7.2 kilograms and produces 100 horsepower on 12-volt direct current. For comparison, an electric vehicle employing a 100-horsepower electric motor performs the same as with a 500-horsepower gasoline engine.

If these performance attainments can be sustained in broad-based applications, electrically powered vehicles could be produced which would meet or exceed virtually all performance characteristics currently available in equipment relying on internal combustion, petroleum-based engines. Gasoline/diesel-powered transportation devices can be replaced by cleaner, more efficient and significantly less expensive alternatives.

The world market for current energy storage applications which will be superseded by these energy storage technologies is estimated to be in excess of \$24 billion per year (1991), exclusive of electric vehicle considerations.

Joint ventures of the IPMS with more than a dozen private sector companies to develop useful energy inventions have been repeatedly sabotaged by the U.S. Government's Defense Intelligence Agency and others. (Source: David G. Yurth, *The Anthropos Files: Tales of Quantum Physics from Another World* – 2nd Edition, 2007)

IPMS: High-Temperature Gas Plasma Detonator

Since its establishment in 1951, the I. N. Frantsevich Institute for Problems of Materials Science (IPMS), Kiev, Ukraine, has been secretly developing, testing and producing more than 130 new materials in 30 general materials categories. IPMS scientists have developed a whole new science based on their unique model of plasma physics. With their invention of a high-temperature gas plasma detonator, strategic metals and other commonly used materials can literally be sprayed onto the surface of other, previously incompatible materials. These gas plasma detonation spray technologies make it possible to create permanent molecular bonds between materials which could never be married together before.

Chromium materials of an entirely new type have been developed to provide high-purity cathodes and targets. Moldable, flexible chromium (a type of material never before available) can now literally be sprayed to conform to widely varying shapes for linings (i.e., to reduce internal pipe corrosion), provide nuclear rod protection, and highly effective space hardening. These techniques have been perfected and used in practical field applications for more than 35 years.

The unique nature of these technologies may not be readily apparent to those not intimately familiar with the commercial and industrial uses of such materials. In more ordinary applications, however, the importance of being able to provide solid targets, stand-alone ingots of ultra-pure chromium, scandium, magnesium and other exotic materials, cannot be overstated. Today, the state-of-the-art in the West only allows chromium, for example, to be transported and used while in solution with other highly toxic liquids. Western scientists do not have the ability to produce free-standing ingots of any of these materials. The manufacturing models which rely on Western science make it clear that it is not theoretically possible for such materials to be produced in a free-standing form.

Similar materials coupled with the technologies of high-temperature gas plasma detonation have been developed for coating internal combustion engine parts to extend life cycle. They have been applied to enhance the performance characteristics of memory elements for computers and to support an extraordinary variety of totally new electronic circuitry. This technology has been successfully used to produce computer circuit boards whose operating components are intrinsic to the circuitry, thereby eliminating the utility or need for soldering or pin housings. The use of scandium, a very rare and exotic element available only in the Carpathian Mountains of Ukraine, make much of this possible in ways not anticipated by Western science.

IPMS-Kiev scientists have developed a series of diamond and cubic boron nitride powders which are smaller and more uniform than any other manufactured today. Also available in this family of materials are very fine (sometimes mono-molecular) ultra-high purity powders and liquids of refractory metals including chromium, vanadium, tungsten, scandium and molybdenum. These powders can literally be sprayed as a plasma field to form continuous, seamless, flexible molecular bonds with host surfaces without electrolytic processes. These materials demonstrate clearly superior performance in tool hardening, cutting edge equipment and polishing.

IPMS-Chernovitsky scientists have developed an entire family of previously unknown technologies based on woven fibers made entirely of 100% pure basalt fibers (lava rock). This totally new technology allows for the production of flexible, weave-able threads. These fibers are fundamentally resistant to heat, demonstrating a softening point in excess of 800 degrees centigrade. Fibers of this material have been produced in diameters of less than 3 microns (millionths of a meter), more than 10 times smaller than a human hair.

Allied Signal Corporation in the United States has attempted unsuccessfully for more than twenty-five years to produce a single fiber of a similar type material. Today, the Ukraine has the capacity to produce these raw fibers at the astronomical rate of 100 tons per month.

These materials are currently being produced in applications involving brake shoes and clutch plates with extraordinary performance characteristics. These materials sustain only about 15% of the wear currently attributed to asbestos-based materials used in identical applications, with the added advantage that they are environmentally friendly (non-toxic and non-polluting). In current applications, parts fabricated of basalt fibers actually operate at higher efficiencies as surface temperatures are increased, up to operating temperatures exceeding 800 degrees Centigrade.

Basalt fiber materials have also been shown to demonstrate superior insulating capabilities over commercially available materials in applications involving both temperature and sound. They have been used in applications related to mine roofing, trays of water cooling systems and as both gas and fluid filters. A four-inch deep pile of 5-micron filaments has been shown to demonstrate heat insulating properties in excess of R-65, which is nearly four times the efficiency of glass fiber equivalents, at one-half the weight.

Further, basalt fibers have been woven together with threads of tungsten, chromium and other strategic metals to produce cloth materials with previously unheard of characteristics. Woven metallic threads and fabrics of this type have never before been produced anywhere in the world.

This writer, Gary Vesperman, has included in his "Advanced Self-Powered Electric Vehicle Concept" (see <http://iiic.de/docs/GVShortSummaries1-46a.htm>) a monocoque (unibody) basalt/carbon fiber foam body/frame. The IPMS-manufactured basalt/carbon fiber foam is extremely strong yet lighter than fiberglass. A test vehicle made with basalt/carbon fiber foam parts was reportedly the only vehicle ever tested that can cut through a cast-iron London taxicab in a collision.

To utilize this technology to create an automobile enclosure, three technologies are needed:

1. The basalt fiber technology can only be found at the IPMS. There may still exist some spools of the stuff in or around Kiev. The principal value of the material is that it has a softening temperature of 805 degrees centigrade.
2. The Russians use powdered metallurgy to alloy their strategic metals – the ideal mix of metal powders would be aluminum and magnesium. Since both can be found in finely particulated powders and when mixed together in the right ratios, these two metals form a material which is utterly resistive to corrosion and which has excellent tensile strength.
3. The powdered metals are mixed in a chamber like dry cake mix and then applied using a third technology – in IPMS documents, this technology is referred to as a "High-Temperature Gas Plasma Detonator". The metal powder is poured into a ceramic container, which funnels it into a specially designed high-temperature containment vessel which is also surrounded by super magnets (see IPMS-Kiev and Arzamas-16: Super Magnets elsewhere in this energy invention suppression compilation), arranged in a very precise order to create a compressive effect. When the powdered metal is brought into the chamber, high voltage, high pressure and extreme magnetic fields reduce the metal powder to a plasma, which is then expelled through a nozzle and onto a target – in this case, the woven basalt fiber which creates the shape of the vehicle.

When the metallic plasma collides with the basalt fiber material, it has a temperature of about 1600 degrees centigrade. This causes the basalt fibers to soften and partially melt – but the cooling gradient for this material is so steep that it cools almost immediately below 800 degrees centigrade, at which point the fibers reconstitute. This creates a basalt fiber-reinforced metal-alloyed shell which is extremely strong, very light weight and can be polished to a high sheen.

This is the technology the Russians have used for 35 years to create fuel cells for their huge rocket boosters – and it is the reason their boosters are so light, have no gaskets or seams and can be reused over and over again. It is primarily because of their extensive use of these integrated technologies that the Soviet space program has been able to consistently deliver larger payloads into orbit than any other nation since the space race began in 1957.

Joint ventures of the IPMS with more than a dozen private sector companies to develop useful inventions have been repeatedly sabotaged by the U.S. Government's Defense Intelligence Agency and others. (Source: David G. Yurth, *The Anthropos Files: Tales of Quantum Physics from Another World* – 2nd Edition, 2007)

Remy Chevalier (Reporter): NiMH Batteries; Solid-State Lithium-Ion Batteries

The best Nickel Metal Hydride (NiMH) batteries are no longer on the market. Why? Because either Cobasys has no intention of ever mass producing powerful NiMH automotive packs, or they just don't know how, even though they own the patent. The cells they displayed at the last EDTA conference were bulky at best, and certainly a million years away from the level of engineering exactitude Japanese automakers expect from their suppliers.

Essentially Matsushita took some of the information from their original, but mediocre patents and developed a functional NiMH battery that gave a range of 160 miles to the General Motors EV-1 and 110 miles to the Toyota RAV4 EV. This Panasonic M95 was also getting 1-2000 deep cycles and 100,000-150,000 miles on a battery pack. Something the oil companies and Detroit automakers don't want on the market, despite the Fortune 500's good mood for natural capitalism.

So now that the best NiMH battery technology for EV's has been removed from commercial circulation, Toyota, Honda and Ford are stuck using inferior NiMH battery technology in their hybrids. Toyota has indicated it will take up to 4 years for the next generation lithium-ion (Li-ion) battery chemistry to be as reliable and affordable. Till then, it's touch and go as Toyota can't crank out enough hybrids off the assembly line to meet demand, especially in deliveries to corporate fleets, taxicabs and limousine services.

State-of-the art lithium-ion chemistry is in limbo at some California-based company who has managed to secure the exclusive production rights to the only Li-ion technology that really counts, roll-to-roll solid-state battery production. That's right; no more liquid chemistry... no leakage, no over heating, no explosion, extreme light weight, easy mass production! Just like printing mylar off a printing press! Just like laminating plastic photovoltaic sheets!

Instead more conventional liquid Li-ion chemistry is being pushed feverishly. Toyota is buying out major Li-ion startups in Asia. Other Li-ion battery companies like Valence, Electrovaya, Kokam, LG Chem have attractive polymer Li-ion batteries, but they are still all based on the older liquid chemistry model, and therefore more expensive and more complicated to produce.

The chemical genius who came up with the Li-ion solid-state polymer roll-to-roll protocol is a professor at MIT who does not own his own technology. MIT owns the technology, and it is the MIT licensing office which gets to decide what companies do or do not get awarded these licensing rights. This revolutionary technology has been in limbo since 1995!

Is it because MIT is cashing checks from the Rockefeller Bros. and the Ford Foundation? Is it pure incompetence? Is it a repeat of the cold fusion debacle Gene Mallove wrote about in his book "Fire from Ice"? It's hard to tell as everyone involved is terrified to talk about it openly, which is why I am not mentioning any names. Frequent visitors to the Electrifying Times website know exactly who I am talking about!

My suspicion is that certain forces within the military, and now Homeland Security, do not want solid-state roll-to-roll Li-ion batteries from entering the civilian marketplace, the same way you can't buy Green, a special duct tape developed for Groton Electric Boat workers to strap metal parts, so strong it instantly bonds to the skin, requiring surgery if accidentally touched.

What a poor boy to do who wants to save the planet if the powers-that-be won't give him the affordable batteries he needs to make a 0 to 60 in under 3 seconds EV with a 200-mile range on a single charge? That's the question we should all be asking ourselves instead of lamenting about who killed the electric car!

The batteries are there, being manufactured for military applications all over Connecticut! If you want plug-in hybrids and 100% pure EVs so you don't ever use a drop of gasoline again, with equal to if not better performance than any liquid fuel engines, then ask yourself why MIT, since 1994, has done very little to get their solid-state Li-ion roll-to-roll battery patents into production. Don't follow the money; follow the trail of misappropriated and shelved patents.

Congress needs to put back into question the entire review process of patent law, and its consequences on environmental health, by imposing strict fines to whoever is caught buying patents for the sole purpose of keeping its protocol out of commercial circulation. (Excerpted from "Who Killed Better Batteries?" by Remy Chevalier, *Electrifying Times*, spring-summer 2006, Vol. 10, No. 1, www.electrifyingtimes.com.)

(Erik Masen adds more details in his "Suppression of Quantum Leap Inventors" *Electrifying Times*, 2007, Vol. 10, No. 2)

Chevron-Texaco bought into a Detroit company, Stanford Ovshinsky's Energy Conversion Devices (ECD), and changed their name to Cobasys. ECD held the original patents on nickel metal hydride battery technology, but never successfully marketed a turnkey NiMH battery for major markets. They did sell a considerable amount of NiMH batteries to GM for the EV1. Panasonic came along and refined this NiMH battery technology into an indestructible battery of higher energy density and longer life. That enabled the Toyota RAV4 EV (electric vehicle) to get 80-120 miles out of a battery cycle, and get over 100,000 miles of battery life out of this improved NiMH battery. ECD-Cobasys filed a lawsuit of patent infringement against Panasonic and won. This action essentially shutdown the import and use of the Panasonic M95 NiMH battery that was so successful in making EV's practical for the GM EV1, Ford Ranger Electric PU, and the Toyota RAV4 EV. As a result the proven very popular M95 90-ampere-hour NiMH is not for sale in the United States. ECD-Cobasys also put heavy licensing fees and restrictions on the NiMH battery used in the Toyota's present hybrid fleet.

Paul M. Lewis: Airmobile

In 1936, Paul M. Lewis designed a three-wheeled car that looked a lot like the present Volkswagen bug. He called it the "Airmobile", and his original model is still on display at Harrah's auto Museum in Reno, NV.

Though Lewis had not known what Dr. Ferdinand Porsche was doing in Germany, the Lewis Airmobile was amazingly similar to the popular VW beetle.

Both vehicles were low cost, simplistic in design, used horizontal opposed four-cylinder air-cooled engines, transaxles, independent suspension systems and unitized body construction.

When World War II came along, it sent VW soaring in Germany, but killed the Airmobile. Porsche fit into the German establishment, but Lewis was a "crackpot" inventor and a pain in the neck to the economic status quo.

The VW beetle's popularity proves that Lewis' original idea was valid and worthy, despite the laughter from Detroit.

The Airmobile was driven out of business in the late 1930s by the Securities and Exchange Commission and the U.S. Postal Department, who have been called bureaucratic flunkies for the oil-auto monopoly.

"I was harassed for two years, and they refused to let me sell stock in my company on the pretense they were investigating possible wrongdoing," Lewis said. "After I was beaten down, they sent representatives to tell me they found nothing wrong, and I could sell stock. A man can't make a dead horse walk."

After losing the Airmobile, despite driving it through 26 states for more than 45,000 miles without a repair, Lewis went from Denver to Los Angeles, where he continued inventing.

Joel McClain and Norman Wooten: Magnetic Resonance Amplifier

On December 12, 1994, Joel McClain and Norman Wooten, two Dallas inventors, discovered that a magnetic resonance amplifier could be capable of over-unity gain energy conversion. The electrical output of their prototype was five times the electrical input. They made a point of publicizing their invention as widely as possible via the Internet right away so as to forestall possible suppression. Since then, they have authored articles on the magnetic resonance amplifier in *Electrifying Times*, *Extraordinary Science*, and *New Energy News*.

A personal friend of Newt Gingrich became very interested and arranged for the Physics Department at Georgia Institute of Technology to experiment with it. They were able to increase the gain so that the output is 18 times the input. Since they could not explain this according to conventional physics, they refused to publish their results for fear of losing the respect and esteem of their peers.

Gingrich had been following the MRA with keen interest so when his friend told him of the problem with Georgia Tech, Gingrich arranged for the federal funding of Georgia Tech programs to be cut off. The President of Georgia Tech who had been in the dark on all this began getting phone calls from enraged Georgia Tech professors. Then the Physics Department published their findings.

At the International Tesla Society Symposium in Colorado Springs (July 20-23), McClain and Wootan gave a lecture on their magnetic resonance amplifier. The oscilloscope waveforms of output vs. input they showed were very odd. They sort of loop around themselves.

A few days after the conference, Wootan's two-year-old boy had been abducted, Wootan was running for his life in Canada, and McClain was in hiding.

The magnetic resonance amplifier's claimed over-unity power conversion efficiency was later shown to be a measurement error. However, a past issue of *Electrifying Times* claims that Scott McKie has invented a solid-state over-unity electrical energy converter with an input of 15 volts, .438 amperes (7.25 watts) and an output of 34 volts, 127 amperes (4318 watts). McKie's converter apparently is a more advanced version of the magnetic resonance amplifier.

Al Wordsworth: Electrical Generator and Advanced Carburetor

The details are sketchy and second-hand, but inventor Al Wordsworth had to contend with harassment of both his advanced carburetor and electrical generator. His generator had an input of 3 amps at 12 volts and an output of 32 amps at 6 to 8 volts. He died some years ago. It is believed his generator design is lost.

John Richardson: 90+ MPG Carburetor; Atomic Isotope Generator

John Richardson invented a "carburetor improvement/adjustment mechanism" which enabled autos to achieve 90 to 100 miles per gallon of gasoline. Richardson also invented an "atomic isotope generator", about the size of a washing machine, which could electrify a 5,000 sq. ft. house or building for over 100 years at a minimal up-front cost. Vicious threats from big business to his life and his family persuaded Richardson to hide the prototypes and to stop further work. (Source: <http://center-for-natural-health.com/articles/richardson.html>)

Fish/Kendig: Variable Venturi Carburetor

In the late 1950's the Fish/Kendig Variable Venturi carburetors got some very interesting mileage figures. John Robert Fish had invented a carburetor that double the gas mileage of Detroit's standard carburetors. When Detroit snubbed his invention, Fish tried selling his invention through the mails to do-it-yourself mechanics. The Fish carburetor even got into production on a small scale.

He was growing successful when Post Office Department agents swooped down on him for "investigation of fraud". Several years later he was exonerated of any charges. But until then the mails to and from his business had been stopped during the lengthy "investigation". He was wiped out financially.

In the early 1970's a young college student (name unknown) entered his Mercury "gas hog" in the California Air Pollution car race and won hands down. He was using the Kendig Variable Venturi carburetor that a small company (name unknown) had manufactured in Los Angeles for racing cars.

Within a week the student was told to remove the carburetor since it wasn't approved by California's Air Resources Board (CARB). His car had reduced pollution and doubled the gas mileage (for that model). This may have been suppression conducted by the Air Resources Board. The movie "Who Killed the Electric Car?" accuses CARB as one of the "gang of killers" of GM's EV-1 electric car.

Dick Belland: 100 MPG Carburetor that Runs on Gasoline Fumes

In 1979 Dick Belland and his brothers and a nephew were experimenting with an automobile carburetor which ran on gasoline fumes. They stopped when Belland received telephone threats to be fitted with a pair of cement boots. For story see <http://www.byronwine.com/files/Dodge%20truck.pdf>.

Ron Brandt: 90 MPG Carburetor

Ron Brandt is the inventor of the perm-mag motor. He is now of retirement age. He has personally told this writer, Gary Vesperman, that he is scared of working on over-unity free energy machines.

When Brandt was a young man, he invented a 90-mpg carburetor. He was paid a visit by a man from Standard Oil, another man, and two men wearing U.S. Government Marshal uniforms. They told him that if he ever made another carburetor, they would kill him, his wife, and two young children. Brandt was quickly persuaded that his life wasn't worth a "damn" carburetor. He happened to think to memorize the badge numbers of the two US Marshals and so had an attorney in Washington, DC check with the US Marshal's office. They had no record of the two badge numbers.

Welton Myers: Myers' Efficient Carburetor

Welton Myers, Director of Technology for Pure Energy Systems, does not have a resume, as he has always been self-employed.

I, Sterling D. Allan, received the following information from him via phone interview today.

Though Welton attended Cornell University, with a major in Agricultural Engineering, that is not of significance to him. It didn't take many years before he came to the realization that the mainstream science he learned there is full of errors (techniques deplete soil of nutrients). He completed there in approximately 1954.

From 1954 through 1960, Welton farmed (mainly corn) and raised 50 dairy cows. Towards the end of that time he also dabbled in logging and mining.

From 1960 through 1975, he laid the foundations for what today is known as Habitat for Humanity. He set up non-profit programs in New York and California, taking groups of ten families who helped each other build homes, and learned skills in the process, which they could later use in a trade.

He helped build and renovate over 1000 homes during this time. Better Rochester Living is the name of the first program in New York, and Self Help Enterprises (SHE) was the name of his first program in California.

In 1975, he began building homes for profit when his funding dried up for the non-for-profit program he was doing. He built around 25 homes in the \$100k range.

Then in 1978 he had a serious accident that put him out of commission for physical labor until 1984. He was rear-ended by a car going 120 mph. "This was one of my most creative periods" he said, ironically, because it was also during this time that he had a very difficult time remembering the simplest things.

That was when he did the carburetor project in which he transformed a car to get three times the mileage. The organization he founded along with Bill Cope, "Knowledge is Power," held weekly seminars at Robert Wesley College, where people came to learn how to convert their cars to get three times the gas mileage.

That project came to a halt when his car was sabotaged, the pressure release valve being clamped down tight, causing his car to explode while he was driving it. The next day, as the car sat on blocks in his drive way, a trailer pulled up, and some men who told Welton's wife they were hauling the car for Welton (not true), towed the car away; and Welton never saw it again.

The blueprints are held by an associate today, but Welton does not recommend the design because of the high pressures involved (3000 – 6000 PSI), which could be dangerous if the car is in an accident.

It was also during that time (1983) that he built a magnetic motor along with Bill Cope and an inventor who said he had been involved with Tesla. The day after they announced that they were ready to open the technology to a public offering, the laboratory was raided, their equipment smashed, and their inventor was threatened at gunpoint to leave the country, which he did. That inventor had also been involved with John Searl and witnessed his flying saucer technology.

Welton later located the inventor in California, but he had Alzheimer's disease by then and couldn't remember anything.

Also during this time, for employment on the side to help cover expenses, Welton worked in a laundry designing the mechanical end of an automated system.

In 1984, Welton returned to working with COOP housing, starting with ten "slow" individuals who were not able to hold down jobs, and making a construction crew of them. At the end of two years, they built 7 homes for 7 of them. The other three were not able to get funding together for a mortgage. With some of this crew, he then went on to build more expensive homes, building 10 homes at a time, for example, in a new subdivision. Many of the homes were in the \$400 - \$500 range. They also installed around 100 solar panel systems during this time.

Then early in the 1990's he began to get involved in the patriot scene, helping people understand some of the inherent problems with today's tax structure, and helping them protect their assets. He was involved in Cleon Skousen's seminars with the National Center for Constitutional Studies. He learned how to create corporate shells with strong layers of protection.

Also during this time he began traversing the country meeting inventors and reviewing their inventions, to help facilitate their progress toward the market.

I met Welton about two years ago, and it was actually his phone conversation with me that spurred me to begin a "free energy" listing on my greater things website, which has grown into what it is today. We have been close friends and business associates (www.perentech.com) during that whole time.

I know Welton to be one of the brightest minds around. You would never know he's past 70 to speak with him on the phone. He remembers details of conversations and technologies better than I do, at nearly half his age. I look at him as one of the "grandfathers" of the Free Energy movement. --- Sterling D. Allan.

George Wiseman: Fuel Savers

George Wiseman is the President and Chief Executive Officer of Eagle-Research in Oroville, Washington (see www.eagle-research.com). George's research organization verifies, develops and distributes practical energy-saving methods and devices. Because he sells fuel-saving plans and devices, he of course is a target of suppression efforts that he describes in an email (copied below with deletions) that is displayed in <http://www.zpenergy.com/modules.php?name=News&file=article&sid=316>.

Date: Fri, 18 Apr 2003
From: George Wiseman
Subject: Re: Re: Suppression

>> I realize that 90 percent of the 'physicists' in these groups are simply here to block progress, to
>> maintain the status quo of disinfo and cointel -- preserve the monopoly of western deception and
>> newspeak -- to regurgitate the same NOTHING they have been programming us with for ten decades.
>
>Do you mean the same "NOTHING" that has made possible all of the following technology that
> conspiracy addicts like you take for granted?

Whoa there... The problems and perceptions here are extreme, yet both valid in context.

I don't want to spark a big discussion, for which I do not have time nor interest. But I just couldn't resist putting in my 2 cents because I see innocence and ignorance being displayed.

There have obviously been major advances in some fields, like electronics and medical science. Much worthwhile has been accomplished. But I submit that it has either been in spite of suppression or in areas where suppression doesn't exist.

For example; computers wouldn't have been implemented to the public, bringing down their cost and fueling greater research if lone inventors hadn't developed both home computers and operating systems that would have put IBM out of business. IBM was caught unprepared and did what they could to reestablish control of the new market.

Medical science is so dominated by 'vested interest' that they are trying to even label vitamins as 'drugs'. Cures for diseases are often ignored and even actively suppressed in favor of techniques that just treat symptoms and incidentally make much more money.

In other fields we are still using technology virtually unchanged (with only cosmetic changes) for over 100 years, like internal combustion. This is a field in which I have some expertise and where I have personally experienced suppression of several different kinds. I have given a few of the details in my newsletters: <http://www.eagle-research.com/newsletter/newsletter.html>.

The electrical power grid, radio, robotics, and the basis of much of the medical diagnostic was invented and implemented by Nikola Tesla around the beginning of last century.

I can prove beyond a reasonable doubt that 'Vested Interest' does suppress technology that would cause their 'investments' to produce less income. Depending on the particular technology, such as fossil-fuel consumption, vested interest could even be governments.

I have personally attended a meeting between industry and a trade school where the topic was what and how to train the students. I can verify that industry as 'vested interest' wants the students to ONLY fix what exists. They are taught what to think, not how to think. These meetings take place on a regular basis because schools need the 'donations' from industry and they want their students to be 'employable'.

I'm sorry to say that my experience is that this 'what to think' effect is spread throughout the education system, including professions such as 'physicist'. Some are open-minded enough to actually look at hair-brained 'alternative energy' ideas and try to educate when they see an idea that won't work. Most of those that discover an idea that will work simply disappear. I haunt old bookstores because I find them gold mines of information that has been eliminated from current teaching.

I have never had a legitimate customer complaint, yet my business has been investigated several times by various U.S. Government and 'public protection' agencies, because I sell 'fuel-saving' technology. I have had my own telephone company tell me that my telephone was tapped. I have had the post office 'lose' over \$50,000 worth of customer orders. These harassments are only a few of the barrage of suppression techniques that I live with everyday.

I could go on and on, easily getting labeled as a "conspiracy addict". Since I am an inventor in these technologies and have felt the suppression in many ways, I believe I have the right, and perhaps obligation, to tell people who live in comfortable niches that the suppression they are not directly feeling, is in fact affecting their lives.

We all could be living very much higher standards of living if only technologies that already exist were not suppressed. In the course of my 'alternative energy' research, I recently developed a 'spin-off' technique, using technology invented in the 1800's, to inherently eliminate the 'phantom load' and 'inductive losses' experienced by most transformer applications. In a lot of cases, particularly in small appliances, this would cut power consumption by over 50%. This single technique would save billions of watts. I can't even imagine how much power it would have saved if it had been implemented from the beginning of using AC electricity.

Anyone who thinks that suppression doesn't exist has simply not looked at the facts. For example; spending only a day in the patent office, I found that in the last 25 years there have been over 3500 fuel saver patents – not one of which is on the market. This is not because fuel savers don't work, because I prove everyday that there are fuel savers that do work. It is because the suppression mechanism is in place and 'self-propagated' by people who have no idea that they are part of the process. They are only propagating what they were taught to believe.

I don't dwell on it, but suppression is very much a reality in my life. It is why I structure my business as I do. I am a self-employed inventor and have been since 1984. I do not patent. I distribute full facts on my developments directly to the public. I do not sell 'devices' that trigger the major suppression responses.

That's my 2 cents. I felt obligated to say it. It may not be fair, but I will not respond to discussion on this subject; it's already taken two hours of my time to compose this email.

Thanks for reading.

George Wiseman
President, CEO of Eagle-Research
<http://www.eagle-research.com>

Tom Ogle: 100+ MPG Oglemobile

Tom Ogle's Oglemobile ran on fumes extracted from a heated tank in the trunk without a carburetor (see US patent 4,177,779). The media witnessed a test of a 4,600-pound 1970 Ford Galaxie which was driven 200 miles on less than two gallons of gasoline. Ogle predicted that an economy four-cylinder engine would achieve 260 to 360 miles per gallon.

A Shell Oil Co. representative asked Ogle what he would do if someone offered him \$25 million for the system. Ogle responded "I would not be interested". He later said, "I've always wanted to be rich, and I suspect I will be when this system gets into distribution. But I'm not going to have my system bought up and put on the shelf..."

The August 1977 issue of Argosy magazine which carried a five-page article on the Oglemobile has disappeared from many libraries and even the Library of Congress. Argosy even ceased publication shortly after the article published. The El Paso NBC TV station that had filmed the test run "lost" the footage.

Tom Ogle died in 1979. Two others connected to Ogle died mysteriously. One was mugged while jogging with no cash. The other died while working for the military at a shooting range.

Charles N. Pogue: 200+ MPG Carburetor

In Jan. 3, 1935 Charles N. Pogue was issued a Canadian patent – 353,538 – for a High Mileage Carburetor.

In Apr. 9, 1935 Charles N. Pogue was issued a US patent – 1,997,497 – for a High Mileage Carburetor.

In Jan. 7, 1936 Charles N. Pogue was issued a US Patent – 2,026,798 – for his newer High Mileage Carburetor. Pogue used the carburetor for about ten years on his car and produced about 200 carburetors thru the Economy Carburetor Co. (Copies of the following three test reports plus a drawing of the Pogue carburetor can be viewed at <http://www.byronwine.com/files/1936%20Ford%20test.pdf>.)

In early 1936 T.G. Green, President of Breen Motor Company, Winnipeg, Manitoba, Canada tested the Pogue carburetor on a Ford V-8 Coupe and got 26.2 miles on one pint of gasoline. The performance of the car was 100% in every way. Under 10 mph the operation was much smoother than a standard carburetor.

In April 30, 1936 Ford Motor Company, Winnipeg, Manitoba, Canada tested the Pogue carburetor and was at "a loss to understand" how the carburetor got "25.7 miles on one pint of gasoline"! (That's approximately 205 mpg). Mr. W.J. Holmes and Mr. Purdy conducted the test for Ford Motor Company.

In Aug. 10, 1936 S. Stockhammer tested the Pogue carburetor on a 1934 Ford V-8 Coupe and got 28 miles per pint of gas. "I can say the performance was all anyone could desire in every shape of form." In Dec. 12, 1936 Canadian Automotive Magazine states that the standard carburetor gets about 25 mpg at only 9% efficiency. Therefore the Pogue carburetor is 72% efficient overall at 200 mpg.

Pogue had his shop broken into and carburetors stolen.

In 1953 CARS magazine stated that in the opening months of 1936, Pogue panicked the Toronto stock exchange and threw fright into the major oil companies. Stock exchange offices and brokers were swamped with orders to dump all oil stock immediately. This same article states that Winnipeg's largest automobile dealers tested the Pogue carburetor and got results of up to 216.8 mpg!

In 1945, according to an unnamed source, carburetors marked "POGUE CARBURETOR, DO NOT OPEN" were used on American Army tanks throughout WWII but were removed from circulation after the war ended.

In 1980 Arthur C. Sgrignoli, after 45 years, has built a legendary Pogue carburetor by hand and is said to have achieved an efficiency of 86%. Contact was made through his brother, William J. Sgrignoli.

In 1981 Ultra-Lean Carburetors of Northridge, CA, was selling a set of plans for the Pogue carburetor for \$50.

As of January 1981, Charles N. Pogue was still alive at age 81 and was living in a rest home in Winnipeg, Canada. He refused to talk to anyone or to receive visitors from outside his own family.

On the other hand, according to <http://www.snopes.com/autos/business/carburetor.asp>, the Pogue carburetor is an “urban legend”. Perhaps some university mechanical engineering students can be funded to replicate the Pogue carburetor as a laboratory exercise and then measure its performance.

An email correspondent of Gary Vesperman wrote June 11, 2006 that, before he got involved with an electronic mileage booster two years ago, he checked the Internet and both Consumers Union and the Department of Energy lambasted all previous fuel optimizers. DOE listed about 75 of them they tested and which did not really work.

(Of course they say that... I think the Pogue carburetor was the one that worked until lead was added to gasoline, and it was this additive that clogged up the device and prevented the mileage gain. Bruce McBurney, source. McBurney’s site <http://www.himacresearch.com/> has more on carburetors.)

The addition of lead to gasoline resulted in widespread permanent environmental pollution of millions of pounds of poisonous, brain deadening lead. In 1967 at the University of Wisconsin-Madison this writer, Gary Vesperman, took an introductory course in meteorology.

One lesson Professor Reid Bryson gave was based on a study he had conducted of the extent of lead poisoning. I used his research results as the basis of a “letter to the editor” which was published in *Business Week* magazine in 1970.

I am not sure if I have the dimensions correct, but the numbers went like this: Residents of northern Wisconsin were found to have 0.1 micrograms of lead per cubic centimeters (cc) of their blood. Residents of the northern suburbs of Chicago had 1 microgram of lead per cc of blood. Residents of downtown Chicago had 4 micrograms of lead per cc of blood. The fatal level of lead poisoning apparently is approximately 6 micrograms of lead per cc of blood.

So in the *Business Week* letter to the editor I postulated that in another decade or so, rising levels of lead in blood would result in greatly increased mortality rates among downtown Chicago people since they evidently were already two-thirds dead.

Weeks later, by coincidence (?), there was intense national publicity focused on lead poisoning which resulted in Congress passing a law mandating a phase-out of lead in gasoline. Some people claim there is a so-called “law of unintended consequences”. The platinum dust hazard from catalytic converters is another awful example of this “law”. Maybe it is time for me to once again try to rouse the rabble?

Professor Bryson was an expert climatologist. He explained to our class the basics of global warming due to the atmospheric increase in carbon dioxide – as also explained by Al Gore in his movie *An Inconvenient Truth*. Bryson also explained the basics of global cooling due to increased dust plus sunlight reflecting off the ice crystals from jet engine exhaust which float high in the atmosphere for up to six hours.

I remember cornering Bryson after one of his lectures and asking him which was going to “win” – global warming, or global cooling? With an unforgettable grim look on his face, would you believe he said global cooling?!!

39 years later with vastly more data, global warming dominates the scientific consensus. Most worrisome, in 2006 climatologists found a preponderance of positive global warming feedback loops compared with pitifully few negative global warming feedback loops. (Source: “Our worst fears are exceeded by reality” <http://news.independent.co.uk/environment/article2110651.ece>) Global warming seems to be speeding up!

Yet ExxonMobil tries to bias global warming research towards the possibly dishonest conclusion that global warming isn’t really happening. For example “Is the Sky Really Falling? A Review of Recent Global Warming Scare Stories”, is a Cato Institute research study published August 23, 2006 by Patrick J. Michaels in <http://www.cato.org/pubs/pas/pa576.pdf>. <http://www.cato.org/current/global-warming/> has an entertaining list of sarcastic titles of papers on global warming by Michaels. Is Michaels being paid to be a disinformation hack for ExxonMobil rather than as an honest weather scientist?

The Cato Institute received \$55,000 from ExxonMobil in 2002-2003. The George C. Marshall Institute received \$185,000 from ExxonMobil for "Climate Change Public Information and Policy Research" in 2002-2003. The Tech Central Station Science Foundation received \$95,000 from ExxonMobil for "Climate Change Support" in 2003. Michaels is also employed by the George C. Marshall Institute and the Tech Central Station Science Foundation. (Source: <http://www.environmentaldefense.org/article.cfm?contentid=3804&CFID=21084385&CFTOKEN=29888831>.) Incidentally, Michaels earned his Ph.D. in ecological climatology from University of Wisconsin-Madison in 1979.

The Union of Concerned Scientists lays the blame for at least some of the ongoing uncertainty squarely on the shoulders of the world's largest publicly traded company – ExxonMobil. The scientific group has documented that the oil company has "funneled nearly \$16 million between 1998 and 2005 to a network of 43 advocacy organizations that seek to confuse the public on global warming science".

Many of the organizations have overlapping staffs, board members and scientific advisers, according to the report, leaving the public with the impression that agreement on the certainty of global warming is far from universal. Funding by ExxonMobil allows these affiliated organizations to "publish and republish the works of a small group of climate-change contrarians," the report states.

ExxonMobil has a lot at stake. A shift toward cleaner forms of energy could greatly diminish its revenue, which reached \$339 billion in 2005. (Sources: January 6, 2007 Las Vegas Sun editorial and http://www.ucsusa.org/assets/documents/global_warming/exxon_report.pdf.)

Allen Caggiano: 100+ MPG Fuel Implosion Vaporization System

INVENTOR'S HARDSHIPS --- SUPPRESSION OR COINCIDENCE? YOU DECIDE!
IS US. PATENT # 5,782,225 BEING SUPPRESSEDOR... ARE THE "HARDSHIPS" THAT THE INVENTOR SUFFERED JUST "A COINCIDENCE".??????" YOU DECIDE !

In the early 1970, in Brockton, Ma, I owned and operated a company called Debal Heating and Air Conditioning. This was about the time that we had that phony gasoline shortage. Each morning myself and 12 employees would sit in the gas line with 6 trucks to get a mere 5 gallons of gasoline. As I sat in that gasoline line day after day, I started to think there must be a better way. If they have the technology to put a man on the moon they must have the technology to get much better gas mileage.

It wasn't long before I built my first fuel vaporization system. I read everything that I could get my hands on about this. Well sad to say it didn't work. It made plenty of vapors, and exploded like a BOMB. Over 70% of my body received 3rd degree burns. I spent 69 days in intensive care, kissing death several times. Don't worry, all the bugs are worked out now.

October 15, 1983 was the birth of my Fuel Implosion Vaporization System. At this time I owned and operated a company in Brockton Ma, called Weatherall Energy Research and Development. I had just finished building a commercial high-efficiency air conditioning evaporation coil when I poured one gallon of gasoline into one end to flush it out. To my surprise massive fumes discharged from the other end, and all I got back was less than one cup of gasoline.

I started brainstorming, I miniaturized the air conditioning evaporator coil, installed it in 1973 Dodge station wagon with a 318 engine. By early 1986 we had worked out all the shortcomings and bugs and had a working prototype that gave between 111 to 113 mpg. We placed an ad in the Brockton Enterprise and the Boston Globe, seeking people to beta test our Fuel Implosion System.

It wasn't long before I got a call from a California corporation wanting exclusive rights to our invention. My attorney checked them out. They were a subsidiary of several other corporations and finally all owned by an oil company. I declined their offer. Shortly thereafter all my troubles started.

First came two men, showing IDs, saying that they were from the FBI and that I was violating federal laws altering carburetion systems and that if convicted could get 20 years in a federal prison. I called my attorney and told him what happened. My attorney informed me that I wasn't in any violation of any federal laws.

If I was smart I should have stopped here. (BUT I AM NOT TOO SMART). For the next two weeks I would receive every day in the mail, in a plain envelope, 8"x10" close-up photos of my wife in the supermarket, church, and my children getting on and off the school bus and in the playground at school.

(Just pictures only.) In addition we would get all kinds of weird calls mostly after 2 a.m. My wife couldn't take it anymore; she filed for divorce and left me.

A few days later my attorney showed up at my office, looking white as a ghost. He had all my legal files and records with him, placed them on my desk and said that he could no longer represent me in any legal matters. I asked why. All he would say is: "WAKE UP!". I could not understand. He had been my personal friend and attorney for over 16 years.

When my wife divorced me and my attorney abandoned me, I wondered what else could happen. Nothing, I thought, nobody can stop me now, so on with my fuel implosion system. Boy was I wrong: hell opened up and swallowed me alive.

I am a very light drinker; if I drink 6 cans of beer a year, that was a lot. I never did drugs or was around anybody that did. On July 4, 1986 the chief of the Brockton Police, Richard Sprawls, with a bunch of other Brockton police raided my Tremont St. Brockton home, and arrested me for trafficking of cocaine. My bail was set at \$500,000.

I was lucky that I had a friend, LT. Jim Sullivan of the Brockton Police Department. He showed up at my bail hearing and said something to the judge, and my bail was reduced to \$500.00. Is somebody trying to tell me something?

Oh well, back to work; I built two more fuel implosion systems. I installed them in a 1973 Olds Cutlass and 1966 Mustang. I painted my 1973 Dodge station wagon bright yellow, with big red letters all over it saying: "THIS CAR GETS OVER 100 MPG AND DOESN'T POLLUTE THE AIR. THE BIG BOYS ARE TRYING TO MAKE ME AND THIS CAR DISAPPEAR,--HELP ME! " I only got to drive my yellow wagon for 3 days.

On November 24, 1986 Brockton chief of police, Richard Sprawls, and other members of the Brockton Police Department raided my Tremont St. Brockton home. They seized two shotguns, a 12-gauge and a 20-gauge, both of which were legally registered to me. I used to use them for skeet shooting.

I was arrested and charged with for trafficking of cocaine again. My bail was revoked. I was placed in maximum security in the Plymouth House of Correction. I was now sentenced to 15 years for the July 1986 trafficking of cocaine and waiting for the second trial for the November case.

I knew where I could get some solid evidence that would clear me, but I didn't know who to trust ANYMORE. So, I escaped from maximum security, went and got my solid evidence and gave it to the right person and surrendered the same day.

Boy I was lucky, they had over 240 law enforcement officers searching for me with guns, dogs, helicopters etc. I ran like a jackrabbit through the woods. My advantage was, the woods were my old hunting grounds.

Two days later Brockton's chief of police was arrested for STEALING COCAINE FROM THE POLICE EVIDENCE LOCKER. HE WAS SENTENCED TO TWO YEARS IN PRISON. REMEMBER THE COCAINE THAT CHIEF RICHARD SPRAWLS SAID HE FOUND AT MY HOME IN JULY AND NOVEMBER 1986? NOW I KNOW WHERE IT CAME FROM, THE POLICE EVIDENCE LOCKER, AND IT FELL OUT OF CHIEF SPRAWL'S POCKET ONTO THE FLOOR IN MY HOME WHERE ANOTHER BROCKTON POLICE OFFICER FOUND IT.

Well, the Massachusetts Supreme Court of Appeals overturned my cocaine trafficking conviction. Grounds: tainted evidence, illegal search and seizure.

FREEDOM AND HOME, HERE I COME! WRONG AGAIN! HERE COMES THE FEDS. THEY HAD A WARRANT FOR MY ARREST FOR VIOLATING A NEW GUN LAW THAT WAS PASSED ON NOVEMBER 24, 1986. THAT WAS JUST 10 DAYS AFTER MY ARREST OF November 14, 1986. Remember the Brockton police seized my two shotguns?

Guess what? I had the privilege of being the first person in Massachusetts and the third person in the United States to be tried, prosecuted and sentenced under this new law 18 USC 922g and 924e. I didn't stand a chance; there was no case law in the law books to support my defense of this new law. I was sentenced to two 5 years' sentences for perjury, because when I bought the two shotguns there was a box that said: were you ever convicted of a felony. I checked the no box, because I was never convicted of a felony, just a misdemeanor.

Well, the feds said under federal law my misdemeanor was a felony, therefore, I was guilty of 2 counts of perjury and they gave me 5 years on each count.

Next I got 5 years for being a convicted felon in possession of a firearm. Now I have been sentenced to a total of 15 years in federal prison without parole. I am still sitting in the courtroom. After a week of trial, my attorney said that the US Attorney was trying me under the second part of the new law. My attorney said the trial will be short, won't last more than ten minutes. There was no way I could be found not guilty.

Well, it went like this:

- 1: I was convicted as a felon in possession of a firearm.
- 2: I was convicted of perjury.
- 3: I was convicted of a second count of perjury.

BINGO! I HIT THE JACK POT!!

USC 18922g-e1 states: If you have 3 prior felony convictions and have possession of a fire arm, then you are an ARMED Career Criminal and that carries a minimum mandatory sentence of 15 years without parole. Now I have a total of 30 years in federal prison without parole. Well, the Feds have me tucked away for 30 years where I cannot cause any more trouble with my fuel implosion system. WRONG, WRONG, WRONG:

I met a lot of powerful people in the federal prison, with powerful connections on the outside, among them, Kenny whose son was a patent attorney for a large patent law firm who did our US patent. #5,782,225, while I sat in the safety of the federal prison system.

Remember the Feds sentenced me to 30 years without parole??? Well, on September 13, 1997 (Friday the 13th, my lucky day) I was released from federal prison with 5 years parole. STOP! Something's wrong here. I only did 10 years of a 30-year sentence, with no chance of parole. Well it took the federal courts to rule that it was legal for me to possess the two shotguns, that they had no jurisdiction. The case is now pending in the 1st District Court. They will not rule on it.

This September 2001 will be 4 years that I have been out of federal prison and have been a good boy, nice and quiet, until now.

My Intentions: In the past 20 years I found out that the oil companies will do EVERYTHING in their power to suppress this kind of technology, because it could reduce the gasoline consumption in the U.S. by 76% over a 5-year term.

The government will lose mega bucks in gasoline taxes.

The major car manufacturers will lose billions spent on the technology of the fuel injection systems, my technology makes theirs obsolete.

I put all my patent and shop drawings up on this website, for anybody to use it free. I am 58 1/2 years young now; the sand is running out of my hour glass fast. I don't want to take this technology to my grave with me. If you think that I should get something out of this, then build my fuel implosion system, and after your 5th tank of gas send me the price of a tank of gas; otherwise I don't want a cent.

If you believe that me and my patent and technology have been suppressed, then tell as many people as you can about my story and ask them to do the same.

The Reason I Ask This Is: I believe that millions of people around the globe want this kind of technology and know it exists. When we get enough people wanting this technology, I have powerful attorneys, who know and are able to present it to the courts of the globe.

I will take my remaining 7 cars, that have my fuel implosion system in them, out of exile and drive them from Boston to California with the whole world watching, and I think my chances of reaching California alive are excellent.

By my publishing this website, I must be out of my mind. What else could happen to me? MAYBE I will get killed or something. What will be will be.

Thank you for your interest. Please help me spread the word. And for those of you that think that my story is just a bunch of bad luck for an unlucky inventor, you will be of those who oppose this type of technology. So go to my home page and VOTE NO for this technology.

Sincerely,
Allen Caggiano, Inventor
<http://www.get113to138mpg.com/>

P.S.: As much as I would like you to build my Fuel Implosion Vaporization System and succeed, I MUST URGE you NOT to build it without QUALIFIED and PROFESSIONAL help, if you are not a qualified machinist or mechanic yourself. This is NOT a simple D.I.Y project and working with (vaporized) fuel is dangerous!

(The electric auto magazine Electrifying Times (www.electrifyingtimes.com) has published a much longer article on Caggiano and his FIVS in its spring-summer 2006 issue Vol. 10 No. 1. By the way, that particular issue happens to focus on suppressed energy inventions.)

(The following is a subsequent report on Caggiano's on-going suppression troubles.

I just want to inform you as to Allen Caggiano situation. He had the web site www.get113to138mpg.com. He recently was trying to bring out a product. He had a few problems and then disappeared. From what I have been told Allen had been in a hospital recuperating from surgery. He went in to have a CAT scan and woke up a month later without the use of his legs. He said he died twice but came back. He was in a coma most of the month. While recuperating and watching TV one afternoon he saw a SWAT team raiding his apartment seizing his computers, notes, tools and car. The postal service is also investigating because he failed to deliver products. He said there were pressure crack problems. He could not ship and thought things would be redone in time. But just too many things went against him. Even though things look bad for him I still believe he is trying to get this out doing the best he can. I and some others have checked out his stories and had them confirmed. He does have a valid patent for fivs 2 ad. He was framed in his first arrest, and the police chief was dirty. If he were a con artist smart enough to pull this off, he certainly would not be around trying to do what he is doing still. He would be in another country spending the money with another name and ID. For that matter who would use their family name with so many ties and some of the different weird stories have been independently confirmed. His web site is down and I wonder what will come of him. Best way to suppress something is to make it look like a con game. It seems the oil companies are good at that. HIMAC has always tried to help anyone in bringing out this technology. At present we are publishing the work of Tony O'Donnell. He has tripled his fuel mileage, obtained an Australian patent and some foreign patents, but could not afford North American patents and the time ran out. We put out his information research and AutoCAD drawings in a CD format – over 500 pages \$39.95 money back if not satisfied. Allen is not the first to get hassled over this. We can only hope he is the last and this information finally surfaces to completion. I only know Allen from phone conversations and the feed back from those who know me. I have not witnessed a verifiable mileage run from him. When I know more it will be posted. (Source: <http://www.himacresearch.com/links.html>.)

(Erik Masen provides an update in his "Suppression of Quantum Leap Inventors" *Electrifying Times*, 2007, Vol. 10, No. 2)

Recently in our last issue we did a feature story on Allen Caggiano "High Mileage Dreams". Allen had spent a good share of his life developing and selling versions of his high-mileage fuel devices. This feature story covered his many near death experiences by groups who did not want to see his technology go mainstream. Recently some U.S. Government representatives invested in Allen's company in an attempt to shut him down for good. Allen fled to China where he is having his high mileage devices manufactured. Few have heard from him since!

William Bolon: Automobile Steam Engine

William Bolon, Rialto, California, developed an unusual steam engine design in 1971 that was said to get up to 50 miles to the gallon. The engine used only 17 moving parts and weighed less than 50 pounds. It eliminated the usual transmission and drive train in an automobile. After much publicity, the inventor's factory was fire bombed with damages totaling \$600,000. Letters to the White House were ignored so the inventor finally gave up and let Indonesian interests have the design.

Shell Oil Company: Achieves 376.59 MPG with a Modified 1959 Opel in 1973

Shell Oil Company wrote "Fuel Economy of the Gasoline Engine" (ISBN 0-470-99132-1); it was published by John Wiley & Sons, New York, in 1977. On page 42 Shell Oil quotes the President of General Motors who in 1929 predicted 80 MPG by 1939. Between pages 221 (see <http://www.byronwine.com/files/Shell%20P221.pdf>) and 223 (see <http://www.byronwine.com/files/Shell%20P222.pdf>) Shell writes of their achievements: 49.73 MPG around 1939; 149.95 MPG with a 1947 Studebaker in 1949; 244.35 MPG with a 1959 Fiat 600 in 1968; 376.59 MPG with a modified 1959 Opel in 1973 (photos of these three cars are shown on page 223).

The Library of Congress, in September 1990, did not have a copy of this book. It was missing from their files, of course. [They had it – since it is legally required to have at least one copy of all such publications in the U.S. However, it seems to have been stolen or hidden.] Byron Wine bought a copy from Maryland Book Exchange around 1980 after a professor informed him that it was used as an engineering text at the University of West Virginia.

The modified 376.59 MPG 1959 Opel is now owned by an Alabama antique car restoration company (see <http://www.race-cardrivers.com/shop.htm>).

Honda: 60 MPG 1992-1994 Honda Civic VX

The U.S. Government, pressured by major US oil and automobile companies, eventually denied import of the 60 MPG 1992-1994 Honda Civic VX. V stands for variable valve timing which can greatly increase a motor's efficiency. (Erik Masen, "Suppression of Quantum Leap Inventors", *Electrifying Times*, 2007, Vol. 10, No. 2)

IPMS-Chernovitsky: Super Ceramics

The I.N. Frantsevich Institute for Problems of Materials Science (I.P.M.S.) is one of more than 70 institutes founded by the government of the Soviet Union during the decade following World War II. Its mission was very simple: the scientists forcibly relocated from post-war Europe and enslaved at the Institute were commissioned to learn everything there is to know about the material world. They were not asked, indeed, they were not permitted, to make any decisions about how their discoveries were to be applied. In fact, from the outset and during all of the ensuing 40 years, there was not a single applications engineer among the 6,600 scientists who worked in the Institute.

The peculiar set of circumstances which provided the essential breeding ground for the extraordinary discoveries spawned by the Institute was not reserved just to I.P.M.S. The central government of U.S.S.R. jealously guarded its absolute right to make all decisions about what was done with the discoveries created in all the institutes. It is not surprising, therefore, that a system of government so paranoid about anyone stealing a pair of shoes that it manufactured left boots in Moscow and right boots in Kiev, would totally fail to recognize or effectively apply the benefits of some startlingly new sciences to clothe, house and feed its own people.

In fact, it was precisely because the Institute was forced to operate in a purely theoretical environment, with no pressure whatever to meet production or marketing deadlines, operating virtually isolated from any contact with the outside world, that the scientists and academicians were able to produce at least 7 whole new sciences, 30 technologies, and 130 materials unknown in the West. It is largely because the most brilliant theoretical physicists in the entire Soviet Union were able to work for nearly 50 years in the singular pursuit of pure research that the sciences developed at I.P.M.S. are so fundamentally unique.

It is interesting to note that only a small part of the new sciences developed at the Institute was revealed to or known by the government of the former Soviet Union prior to its collapse in August, 1991. The antipathy of the Institute's scientists to the USSR government's shabby treatment led them to successfully hide nearly all of their often revolutionary research results.

One of the Institute's four sites, IPMS-Chernovitsky, developed moldable, machine-able, ultra-high temperature, super-hard, and strategic metal-alloyed ceramic substances.

The uniformity and density of ceramic materials is what determines the quality, consistency and persistence of the resonant tone produced by an oscillating crystalline material. Research has created a whole new family of moldable, machine-able, ultra-high temperature, super-hard and strategic metal-alloyed ceramics capable of withstanding operating temperatures of 1200 degrees centigrade. This is more than 400 degrees centigrade higher than can be tolerated by other known ceramic materials commercially available anywhere else in the world, including those manufactured by Allied Signal Corporation and Kyocera.

These materials are being utilized in entirely ceramic internal combustion engines, high-speed turbines and self-lubricating bearing surfaces. The latest ceramic materials designed for use in high-speed jet turbines operate continuously at temperatures in excess of 1200 degrees centigrade. This is more than 400 degrees centigrade higher than the theoretical limit allowed by the quantum mechanics model relied on in the West.

The ceramics produced at the IPMS-Chernovitsky plant have been made harder by fully one factor of hardness than the hardest alloyed metal machine tools currently produced by any other known means of manufacture. They have been made harder by at least one full order of magnitude than either natural or synthetically produced diamonds. Practical applications include drilling and mining, grinding tools, down-hole equipment, tool inserts and the new generation of cubic boron nitride tools that are currently in use.

Proof positive of the extraordinary uniformity and density of these materials is easily verified by a simple demonstration if the measurement of softening temperatures is deemed insufficient. Ceramic pistons manufactured for use in ceramic diesel engines will, when struck by a hard object, produce a clear resonant tone which persists for more than seventeen seconds. This is at least eight seconds longer than the resonant persistence produced by the finest glass or crystal ever manufactured.

Joint ventures of the IPMS with more than a dozen private sector companies to develop inventions have been repeatedly sabotaged by the U.S. Government's Defense Intelligence Agency and others. (Source: David G. Yurth, *The Anthropos Files: Tales of Quantum Physics from Another World – 2nd Edition*, 2007)

Stefan Marinov: Magnetic Vortex Hyper-Ionization Device

At his death Dr. Stefan Marinov was Assistant Professor of Physics at Sofia University, a member of the Physical Institute of the Bulgarian Academy of Science, and the editor of *Deutsche Physik*. One energy device he was developing was an over-unity magnetic motor.

<http://www.spiritofmaat.com/archive/mar2/bearden.htm> discloses the strange circumstances of Marinov's death.

(The excerpt below, with editing, is from Vencislav Bujic's report published January 14, 2002.)

Stefan Marinov was working on his magnetic vortex hyper-ionization device just one month before his sudden, unexpected death. There is high chance that his death was connected to the testing of this device, and that it was not a "suicide" as officially stated. Marinov was a good Christian and nobody expected him to commit suicide.

According to official news he presumably jumped off from the top of the four-level outside emergency staircase of the Bibliothek in Graz, Austria. But nobody actually saw him jumping off. He was still alive, not even bleeding, when an ambulance and police arrived. Marinov died on the way to a hospital.

The police never notified anybody, including his son in Bulgaria. They sealed his apartment, not letting anybody inside, and also refused to release any letters found there, and refused to give any information.

Stefan Marinov was born in Bulgaria. When he got a passport, he moved to Washington. Secret agencies and their 'elite' bosses, who control sources of energy and are confusing people, wouldn't let Marinov alone when he went back to Europe, this time to Italy and Austria. These are the same people who prevented Tesla and many others from giving to all the people sources of free energy. His life was ended abruptly. He had big plans for the future and was making various future collaborations. Marinov had planned to attend the International Physics Conference in Koln, Germany, on 25th of August 1997. He even had made hotel reservations for the conference for him and his colleague Professor P.T. Pappas from Athens, Greece.

Bob Aldrich (Reporter): Vibrating Energy Source

Message 414 DATE/TIME: 05/24/93 01:47
From : BOB ALDRICH -- RECEIVED --
To : JERRY DECKER (SYSOP)
Subject: (R) Bearden's Latest
Folder : A, "Public Mail"

Hi Jerry,

By lamentations I mean lamenting on how difficult it's been to get free energy made available to the people at large. How many people have tried to make it possible over the years? Must have been thousands. Who has succeeded?

Say, did you ever hear of a device that farmers were using possibly fifty years ago that worked on vibration? Apparently some very simple device that when set to vibrating, would put out ample free energy. Chicken farmers and such were building them and using them to power the ranch.

Until some one or two farms mysteriously blew up or burned to the ground, after some warnings. This was in the Midwest to my recollection. The fellow who told me did mention specifics but it was several years ago. He was very hard to pin down as he was always onto the latest thing and didn't want to talk about things in the past much.

Later,
Bob

Dennis Lee: Freon-Based Low-Temperature Phase-Change Engine

Dennis Lee during the mid-1980's developed a freon-based low-temperature phase-change engine similar to Bob Stewart's heat engine. The father of the Boeing 747 and other highly qualified people helped Dennis perfect his engine. A small plant was established in Seattle to produce and sell a commercial home-scale electrical generator. A Seattle area power company (the same one which became infamous for its failed WHOOPS nuclear power plants) campaigned to shut down the plant.

Dennis Lee was forced to move his company to Southern California to start over. He was subsequently imprisoned on a false charge for two years. His book "The Alternative" documents the falsity of the charge. The main point being a two-year imprisonment on a charge using an obscure law *never* used against anyone else in the state for either fine or imprisonment and during which a million dollar bond was demanded by the judge, similar to bail charges issued against murders and violent criminals, not inventors or even petty thieves.

Robert Stewart: Stewart Cycle Heat Engine

Bob Stewart spent \$3,000,000 (mostly from farmers) developing patents on his "Stewart Cycle" engines for transportation vehicles and large-scale water lifters for canals during the late 1970's. His efficient and pollution-free engines use ambient heat to expand a working fluid such as ammonia and move pistons through sealed cylinders. He claimed that his low-temperature phase-change engine is more efficient and powerful than Dennis Lee's version.

Twice he built a factory, first in Coeur d-Alene, Idaho, and then in Deming, New Mexico, to make available for sale such valuable and beneficial technology. Both times, the factories were raided and shut down by the U.S. Government's Securities and Exchange Commission.

Through the Las Vegas area grapevine, Stewart fortunately in time heard that a contract on his life was in effect and had to go into hiding for nearly a year.

Jim Powell (Reporter): Flywheel/Dual Hydraulic Cylinder

Date: Tue, 20 Jun 2006
Subject: Great Information!
To: garyvesperman@yahoo.com

Hi Gary,

A friend just forwarded your 25-page e-article entitled History of 'New Energy' Invention Suppression Cases, and I enjoyed the reading. Amazing stuff!

There was one machine (for lack of a better term) I saw back in the mid-seventies that has haunted the back of my mind ever since, and I looked for a mention of it in your article. The article hints you have much more information and files elsewhere. Thought I would share with you what I recollect in case you already know about the contraption I witnessed.

During the mid-seventies I was a long-haul trucker and met an older man at a truck stop in Tennessee. Over cups of coffee we were talking about motors and diesel and mechanical things in general when he mentioned a buddy of his had invented a "perpetual motion machine" that he thought was pretty interesting.

I asked where it was and could I see it. He said the guy didn't live too far from where we were sitting but I would never be able to get my rig up the mountain. He offered to give me a ride. He was right. This buddy lived back in the hills and in Tennessee that can mean a mouthful. Good thing his truck was four wheel drive.

When we got there, his buddy was rather evasive about the whole thing which really puzzled the guy that brought me up there. So he kept asking and pushing for a demo and finally the inventor told us the day before some guys had visited and took a part or two and told him to not fix it or they would be back. I got the feeling that if it had been just me there, he wouldn't have told me anything or showed me anything but because his friend was with me it was different.

He took us out back where there were odds and ends on a workbench, and he quickly gave me a brief explanation of how the parts fit together and how it worked. I am sorry for your sake that I haven't remembered any names of the individuals so if you want to toss my email it is OK. Here is how the description went:

Flywheels by their character tend to develop power once they are in motion and can generate more power while spinning than they consume to keep spinning. Sounds interesting but I am no physics wizard.

So he had rigged a big flywheel between two double-acting hydraulic cylinders with the appropriate switches triggered by the rams to keep the two cylinders reciprocating as long as there was a steady supply of hydraulic oil pressure. The hydraulic oil pressure came from what looked like a modest-sized power-steering pump which was driven by the flywheel.

The flywheel was kept in motion by the moving cylinders, and the cylinders in turn were kept in motion by the switches and the fluid pump. The fluid pump was kept in motion by the flywheel. The switches and support for the flywheel (bearings) was taken during the confiscation by his unpleasant "visitors".

To start the whole thing in motion he had a small electric motor to help start spinning the flywheel. Once it got up to a certain RPM the electric motor was disengaged and shutdown.

They both told me how he had been using it for various power needs around the farm from pumping water to cutting wood for over a year. When someone told him he should seek a patent for his machine, he followed that advice. Instead of getting a patent, he got the visit the day before I arrived.

I didn't feel like they were pulling my leg but again I know nothing of physics, and I was in my early twenties. There was no appeal to partner, contribute money or support or anything that would have made me suspicious. Wish I could have seen it working because it has kept me wondering the past 30 years.

Perhaps you have heard of these things and can comment on whether it was bunk or not. You may even have the scientific knowledge to instantly recognize its possibility or improbability. Anyway, after reading your article I thought I would pass this along for what it is worth.

Best Regards,
Jim Powell

This writer, Gary Vesperman, does not know of any similar device in the unconventional science literature. Perhaps one of my genius scientist friends can figure out this energy invention. Gosh, do the energy invention suppression bullies even track down energy inventors in remote hillbilly country, take away or damage their machines, and threaten them with death?

Christopher Bird/Walter (Reporter): Energy Suppression – An Invisible Galaxy of Inventions

<http://www.spiritofmaat.com/archive/feb2/bird.htm> and <http://www.befreetech.com/energysuppression.htm> both list 48 energy inventions – nearly all of which are suppressed or at least not being commercially made and sold.

IPMS: Micro-Channels and Filters

The I.N. Frantsevich Institute for Problems of Materials Science (IPMS) was established in Kiev, Ukraine in 1951. Between 1945 and 1955, the government of the Soviet Union created at least 72 self-contained, completely isolated scientific communities like the IPMS scattered all over the most desolate parts of the Soviet empire. Stalin systematically established more than 360 such enclaves as a matter of policy. He deliberately prevented the scientists and their families from co-mingling with the rest of Soviet society or corresponding with the West. This phenomenon of cultural isolation was typical of life in the U.S.S.R. after World War II.

Many of the key scientists who were forcibly expatriated by the Red Army under Stalin's orders and relocated to work in the Institute had been captured by the Soviet armies during the occupation and annexation of Eastern Europe at the end of World War II. Only a handful of them succeeded in escaping to the West. Those who tried to escape were almost always captured and executed. In some cases, their families were sent to languish and die in the Gulags.

Many of the original team of scientists sequestered in L'vov, the entrance to the Institute, had been contemporaries, co-workers and close personal friends with many of the most prominent physicists and other scientists who emigrated to the United States before, during and after World War II.

During World War II in Europe, and afterwards in Stalin's Soviet Union, the original Directors of the Institute experienced the horrors of developing technology for destructive military use. For more than 40 years, scientists at IPMS (and, no doubt, at some of the other Soviet institutes) elected to keep secret as many of their key discoveries as possible until a time when their genius could be constructively applied to solving the global materials, energy consumption and industrial manufacturing issues which are responsible for the current deplorable state of the environment.

Among the original group of scientists relocated to work in the Institute were some who were part of the German team which worked during World War II to develop fissionable nuclear materials, synthetic fuels and foods, and other technological advances for the Third Reich. Information regarding the advanced nature of some of the work they participated in has only recently been declassified and released to the public. Some of the formulas and technologies they developed were absolutely revolutionary and many have never been replicated in the post-war world.

Among recently declassified files is a set of documents which describes the development of infra-red, heat-seeking "smart bombs" which were so effective that a single bomb, dropped by a single Nazi bomber in a night attack in the North Atlantic in 1942, sank a British troop ship carrying more than 3,000 American troops. The bomb recognized and guided itself down the troop ship's smoke stack in much the same way similar devices were observed to function during Operation Desert Storm, nearly 50 years later. The technology which made this device functional was so far advanced beyond anything available to the Allies at the time that the War Department kept the story classified for more than 50 years.

Many of the materials, processes, technologies and applications produced by the Institute are so unique that in some cases there are literally no words in the languages of the Western industrialized nations to describe them.

IPMS has produced a family of micro-channel and filter materials with uniformly controllable orifices as small as .5 micron from combinations of carbon-fiber, basalt, ceramic and strategic metals – including stainless steel, scandium and chromium. These materials demonstrate a consistency of orifices fully a factor of ten times smaller and more consistent than the smallest ever manufactured in the U.S.

These materials have been used in applications for heat exchangers, catalysts and separation of gases on a molecular level. A notable application involves the use of such materials to separate virtually 100% pure CO₂ from hydrogen gas at the well-head from gas wells. Then 98% of the CO₂ can be pumped back into the well for re-pressurization, with the pumps then being operated directly on virtually pure hydrogen fuel.

The scientists, academicians and others at the Institute who developed revolutionary new models of quantum mechanics, quantum physics and the manufacturing processes and techniques which resulted in these materials, refused as a matter of conscience to allow much of what they had developed to pass into the hands of the KGB and the Soviet military.

Joint ventures of the IPMS with more than a dozen private sector companies to develop these useful inventions have been repeatedly sabotaged by the U.S. Government's Defense Intelligence Agency and others. (Source: David G. Yurth, *The Anthropos Files: Tales of Quantum Physics from Another World – 2nd Edition*, 2007)

Viktor Schaubberger: Jet-Turbine

During the 1920's Viktor Schaubberger designed a novel hydroelectric generator for which he received Austrian Patent No. 117,749 Jet-Turbine on May 10, 1930. It seems that Schaubberger actually used a small turbine of this design in a stream of water near the forest wardens' building during those years, but no reliable records are available. An English-language version of his patent is available at <http://www.rexresearch.com/schaub/schaub.htm#117749>.

Schaubberger's jet-turbine does not require the use of a dam. Instead, the water to power it is contained in a vertically oriented large-diameter cylinder, ten feet or more in height. Due to the force of gravity and the elastic modulus (fluid dynamics) of water, a very large amount of potential energy in the storage vessel is converted to kinetic energy as the water is released into the oscillator (impeller). A pump is used to pump the water exiting the turbine back to the storage vessel.

The jet-turbine was estimated to produce 9 times more power for a given water flow than with a conventionally designed water turbine. The design also did not force water through immense pressure and heat which destroy the structure of water.

The water-vortex (jet of water) is produced inside a ribbed copper-cone, by the conical-plus-ribbed shape and gravity, and the resulting water-jet is rolled into the copper-impeller, which turns the generator, producing energy in a silent, effective way. The conical impeller has two or more intertwining spiral grooves incorporated in its outer surface, into which the water emerging from the nozzle is entrained, in order to rotate the shaft of an electrical generator. This method does not require a great deal of water, like conventional water-dam methods, and is absolutely silent.

In practice, only a small fraction of the output energy is required to power the pump, thus making this device a true free energy system. Ideally, the storage vessel should be egg shaped, with the outlet to the oscillating valve possessing the configuration of a long hyperbolic parabola. This outlet configuration will induce a longitudinal vortical motion to the water prior to its flow through the oscillator, thus cooling and densifying the water. The return pipe from the turbine should enter the storage vessel tangentially, in order to assist in the formation of a vortical flow.

In 1986 a group of enthusiasts living around the township of Schlading, who were interested in the practical application of Viktor Schaubberger's ideas and Walter Schaubberger's mathematics, decided to replicate Schaubberger's jet-turbine in order to produce their own electricity. The "Schlading Group" comprised of R. Harbacher, H. Zefferer, H. Schrempf, A. Schwab, T. Promberger, M. Dainhofer, V. Knaus, and H. Mayer.

On the property of one of their members living on the Birnberg, they had carefully constructed the combination of egg and hyperbolic cone, which was sourced from a nearby brook. Water from the stream was fed into the upper part of the egg tangentially, thereby providing the initial impulse for the creation of a vortex. The electricity generator to be attached to the jet-turbine was being specially manufactured. Austrian authorities then told the Schlading Group to stop their work before experiments were completed, using the excuse that they did not want to see these devices popping up all over the countryside.

Successful or not, what this replication of Schaubberger's jet-turbine does show is that small groups of people working together cooperatively can provide their own sources of cheap power and can do much to re-establish their independence from centralized power and control over their lives. The problem that confronts us all, alas, is that it is the centralized electricity authorities who write the rules which ensure as far as possible that no one can escape the power grid. The greater the number of people who are willing to challenge this central control over their independence, the more difficult it will become for those to continue holding such power over us. (Sources: <http://peswiki.com/energy/Directory:Suppression> and <http://peswiki.com/index.php/OS:Jet-Turbine>)

Canadian Scientist: Standalone Water-Based Electricity Generator

Jeane Manning authored *The Coming Energy Revolution* and also has co-authored *Suppressed Inventions & Other Discoveries* (an anthology put together by Jonathan Eisen). She has heard numerous stories of suppression during twenty-five years of investigating non-conventional energy inventions. Her website is <http://www.changingpower.net>. New Energy Congress member Leslie R. Pastor's review of Eisen's anthology: "The book is breathtaking in its openness regarding actual suppression of 'real-time' inventors and innovators."

One story she told Gary Vesperman is about a Canadian scientist. In October of 1999, Manning met him through a mutual friend. According to her notes, he had invented an energy device which was the size of a refrigerator when he ran his home on its electrical output. He wouldn't reveal how it worked, except that it involved sound frequencies, copper plates, water, a transformer and a battery and could be built the size of a Walkman. (Vesperman: This device appears to be similar to the super-efficient water electrolysis devices developed by Daniel Dingel, Ken Rasmussen, and Stanley Meyer (see above). Notice that it offers the desirable feature of being scaleable from very small to at least big enough to run a house off the power grid. It also functions as a standalone generator, not as a less desirable over-unity power converter.)

His mistake had been in being confrontational. He called officials at Ontario's hydro-electric utility and told them to take their meter off of his house. When they arrived and cut off his power, he went down into his basement. While the officials stood out in his yard, the lights inside his house went on again. He came outside and bragged, "I'll put you out of business in six months!" Soon he was visited by men wearing Royal Canadian Mounted Police uniforms who gave him warnings and a document. He later showed the document to his son, a lawyer, who reinforced the message – keep your mouth shut. He dismantled his inventions.

He told Manning that the Royal Canadian Mounted Police basically told him to forget about his invention for thirty years. Twenty-six of those years had passed. He said the police kept an eye on his activities throughout the years. For instance, they interrogated him after an innocent business meeting in California which had nothing to do with the invention.

This German-Canadian scientist joined the many inventors who took their energy secrets to the grave. He was elderly, and Manning believes he died from natural causes.

Brazil: Ethanol Produced from Sugar Cane

Ethanol, produced from fermenting starch-based corn or sugar, is increasingly being blended with gasoline. Prices for ethanol in the United States recently hit an all-time high at over \$3 a gallon. To impede competition from ethanol, the oil companies have arranged for the United States to impose a 100% (currently \$0.54 per gallon) tariff on ethanol imports, which keeps prices for the alternative fuel artificially high. Brazil, which recently became energy self-sufficient in 2006, is the world's largest producer of sugar-based ethanol and would benefit greatly from a tariff reduction in the United States. Apparently it is cheaper and more energy efficient to produce ethanol from sugar cane than corn. Naturally, Brazilian rainforest preservation advocates likely would argue for running engines on water instead or some other more environmentally benign energy source.

Eric Fry and Kevin Kerr reported July 17, 2007 in *Rude Awakening* (www.agorafinancial.com) that ethanol production now consumes one quarter of the entire American corn crop, boosting the prices of corn and numerous corn-based products such as pork. But ethanol production consumes about as much energy as it delivers...if not more. American corn-based ethanol production relies on large government subsidies as well as huge amounts of fertilizer and fuel. Ethanol also requires prodigious amounts of water from the rapidly shrinking Ogallala Aquifer.

To cash in on the new corn boom, many farmers are continuously planting corn instead of rotating corn with soybean plants. Rotation serves several ecological and agronomic purposes. It makes it more difficult for diseases, weeds and insect pests to persist. The right rotation also builds soil fertility. Soybeans are a natural partner to corn because they capture nitrogen from the atmosphere, leaving more in the soil for the next year's crop. By not using proper rotation practices, farmers will almost inevitably face the prospect of growing corn in nutrient-deficient clay as well as increasing the loss of biological diversity.

By the way, the tariff on imported oil is 0%. External versus internal cost accounting analysis, with its corollary – the thousand-year cost, indicates that it would be fairer and make more sense to encourage conservation and to raise money for protecting Middle East oil sources with a tariff on imported oil.

David Crockett Williams (Reporter): Non-Drug Industrial Hemp as Bio-Fuel

Non-drug industrial hemp is not hallucinogenic marijuana although both are varieties of the same species (*Cannabis sativa*). Hemp provides a surprising variety of products. More than any other plant on Earth, hemp holds the promise of a sustainable ecology and economy.

Hemp seed is the most complete single food source for human nutrition. Because one acre of hemp produces as much cellulose fiber pulp as 4.1 acres of trees, hemp is the perfect material to replace trees for pressed board, particle board and for concrete construction molds. Hemp made into paper is of higher quality and durability and also is less environmentally damaging to make than paper from wood pulp. For centuries hemp has been processed into high-quality fabrics, sails, ropes, diapers, etc.

Additionally, hemp grown for biomass could fuel a trillion-dollar per year energy industry, while improving air quality and distributing the wealth to rural areas and their surrounding communities, and away from centralized power monopolies. Remarkably, when considered on a planet-wide, climate-wide, soil-wide basis, hemp is at least four and possibly many more times richer in sustainable, renewable biomass/cellulose potential than its nearest rivals on the planet – cornstalks, sugarcane, kenaf trees, etc.

For a comprehensive reference read Robert A. Nelson's thoroughly researched *Hemp Husbandry*, available free online at www.rexresearch.com. The book that started the hemp revolution, "The Emperor Wears No Clothes", has sold more than 600,000 copies to date (to order see <http://www.jackherer.com/hemporium.html>). Also see <http://votehemp.com> and <http://groups.yahoo.com/group/hemp-reform-act>.

Hemp as a bio-fuel poses a possibly insurmountable competitive threat to the fossil fuel companies. Since the days of the American revolution, the U.S. Government proactively encouraged growing of hemp. In order to reverse the U.S. Government's policy and to suppress hemp production, certain large banks and fossil fuel companies eventually were able to fool and stampede the US Congress into legislating a national ban on marijuana (and hemp) in 1937.

The US is the only major industrial nation to prohibit the growing of non-drug industrial hemp.

In spite of increased production and utilization of hemp grown in other countries, and increasingly strident pleas by state legislatures, hemp-related businesses, etc to legalize non-drug industrial hemp, the Bush Administration through the US Food and Drug Administration, working on behalf of the energy cartels and their associated banks, still maintains with an iron grip a fraudulent suppression of hemp disguised as a "war on drugs".

Ironically, the U.S. Government's own Veterans Administration Medical Center in Pueblo, Colorado has conclusively demonstrated (<http://brain.web-us.com/alcohol.htm>) that a couple of weeks of painless alpha-theta brainwave tuning permanently stops all forms of chronic substance addiction including alcoholism.

David Crockett Williams has submitted June 26, 2006 the following analysis that suggests that discussion of the politics of non-drug industrial hemp suppression should be included as a subset of energy invention suppression politics discussion:

In addition to high-tech energy technologies and inventions that have been suppressed by various means against their developers, one of the most important suppression issues regards the hemp industry for production of bio-fuels to replace the need for fossil fuels.

The main reason why it is very important to include the suppression of the hemp bio-fuel industry in any comprehensive energy technologies suppression discussion is because learning the suppression history about hemp enables people to understand the nature and scope of the ability of industry and government collusion to suppress knowledge – just like the knowledge about the new energy technologies inventions has been suppressed since the time of Nikola Tesla over 100 years ago, by the same greedy industrial monopolists with the help of their bought and paid for politicians.

This is important because otherwise folks studying the data on new energy technologies always wonder how such important information could be kept from the public, "if it is real". The history of hemp suppression explains this with irrefutable historical information now neatly compiled and annotated by folks like Jack Herer and his friends. See <http://www.jackherer.com> and <http://www.myspace.com/hempjack>.

Hemp was outlawed in 1937 in a fraud on the US Congress that is still not widely known. After an intentional and racist twenty-year campaign of yellow journalism slandering the "marihuana" becoming popular with blacks in the US after its introduction in the South by Pancho Villa's army's excursions into the US, marijuana was outlawed without telling the Congress it was in fact the hemp plant, the cannabis extract of its flowers being a main ingredient in most all patent medicines for decades before and after the turn of the 20th century.

The American hemp fuel industry was pioneered by Henry Ford who was against the oil monopolies and favored bio-fuels for automobiles. He even grew hemp showing how this was a superior alternative.

But in the early part of the 20th century most of the new industrial monopolists were interconnected by the emerging corrupt banking industry, those who put maximizing profits above all considerations including cost to consumers.

When the cotton gin analog for processing hemp by machine was finally invented in about 1917, this threatened many industries then emerging including the new paper industry begun about 1900 with the discovery of the process using sulfuric acid to bond the lignin in cellulose to enable paper to be made out of trees.

Newspaper magnate William Randolph Hearst was so heavily leveraged into ownership of forests to produce paper for his newspapers that he would have been bankrupted by a strong hemp industry using the new hemp decorticator machine because it takes much less sulfuric acid to make paper from hemp cellulose, and hemp is renewable.

So Hearst orchestrated his yellow journalism for the banks and other emerging industries like the growing petroleum industry, chemicals industry, alcoholic beverage industry, the fiber industry, and the drug industry, perpetrating this fraud on the Congress by outlawing hemp as marijuana. Then began the systematic expunging of the truth about hemp from the historical record and from the educational system in the US, by using the spurious and fallacious "narcotics hysteria" fomented and ongoing since that time.

Before the publication of Jack Herer's book "The Emperor Wears No Clothes" in about 1990 very few people knew about hemp, this suppression campaign being so successful. Since then many people have learned the truth by reading his book and others including Herer's first editor – Chris Conrad. See <http://www.chrisconrad.com>.

There has come to be a very strong network of activists by now who know the truth and are working at many well funded levels to correct this situation. They know that the energy industry uses of hemp are important but they do not know much about the new energy technologies or the documentation of their suppression.

So including hemp energy industry suppression in this compilation about suppressed energy technologies will link these two key issues, both of which are needing widespread implementation to address global climate change as per the testimony of experts such as Dr. Brian O'Leary, who has started numerous new energy groups, and Alden Bryant, the grandfather of the UN Climate Stabilization Treaty movement and Earth Regeneration Society. See <http://www.brianoleary.com> and <http://www.earthregenerationsociety.org>.

This will afford the already established hemp issue activists the information they need to better open the minds of the American public and to also champion the end to suppression of new energy inventions, because they are fighting against a "drug war" prejudice. By their knowing and showing how the energy inventions are also being suppressed, the public could be awakened to the fact and the nature and scope of this industry-government collusion in suppressing any information that threatens the status quo of contemporary industry.

This will help them overcome the "drug war" as the smokescreen for the prohibition of hemp for all of its uses including energy and to replace the need to cut down so many trees and to re-green the planet to ameliorate climate change.

For an article explaining more about this double-edged sword to cut this Gordian Knot of suppression, the new energy technologies inventions plus a global scale emergency Hemp for Victory campaign, and why both are needed to remedy Earth's current climate crisis, see <http://www.angelfire.com/on/GEAR2000/gear.html>.

David Crockett Williams, Global Emergency Alert Response 2000
<http://www.angelfire.com/on/GEAR2000>, <http://www.myspace.com/davidcrockettwilliams>

Williams recently emailed The Canadian's article "Over 4.5 Billion people could die from Global Warming-related causes by 2012" in <http://www.agoracosmopolitan.com/home/Frontpage/2007/01/08/01291.html> which explains that the global warming crisis is much more immediate and dire than commonly understood. Western Siberia's 400 billion tons of methane in permafrost hydrate is gradually melting, releasing methane into the atmosphere. The released methane will speed the melting even more, initiating the rapid onset of runaway catastrophic global warming. Methane is more than 20 times as strong a greenhouse gas as carbon dioxide. Even a couple of billion tons of methane being emitted into the atmosphere each year would be catastrophic. For comparison, the atmosphere currently contains only about 3.5 billion tons of methane. 2012 is only five years away! A study by several thousand experts "Global Warming: The Final Verdict" in http://www.truthout.org/docs_2006/012207L.shtml dispels any doubts of a looming global catastrophe.

Dean Warwick: Ampliflaire Efficient Wood-Burning Stove

Dean Warwick's patented Ampliflaire is a major break-through in heating technology and is the only heat exchange process capable of raising combustion cycle efficiency within fuel burning systems. Other systems of heat exchange by their very nature must lower combustion cycle efficiency.

Ampliflaire recovers the heat energy other systems lose. Wherever fuel is burned or heat energy is wasted, there is a unit to resolve the problem, and flue-pipe models, retro-fitted to conventional boilers, convert them into overall effective condensing systems with remarkable savings.

Ampliflaire open fires release the electrical energy in plants, absorbed from the sun during the growing cycle. Grown fuels are the most efficient converters of solar energy, and the burning of grown fuels in this way is the safe way to make available energy from a nuclear reaction.

As hydroxides (OH) of carbon (C), the potential energy in plants far outshines their current use. With the largest man-made forest in Europe, the United Kingdom Government already recognizes a commitment to grown fuel which can easily satisfy British needs. Examples are winter species grass for methane gas, bio-diesel, hydrogen from plants, liquids, and wood replenishing solids.

Ampliflaire reduces heating bills by approximately 90%, reduces pollution, increases property value, removes household dust, eradicates condensation, and efficiently circulates refreshed air.

The company's brochure features numerous practical cases of individual or commercial clients who are now enjoying the benefits of Ampliflaire. From small cottages to large hotels, from churches to business premises, the company has an efficient and effective system available.

Dean Warwick keeled over dead October 7, 2006 in the middle of a Unidentified Flying Object (UFO) conference presentation in Blackpool, UK. Mr. Warwick was an alternative energy pioneer, former U.S. Government officer and intelligence insider who had promised to make some momentous announcements. The circumstances suggest a Central Intelligence Agency (CIA) 'hit' using an Extremely Low Frequency (ELF) weapon. These ELF weapons can be set on a 'delta wave' and are able to shut a person's nervous system down.

Much of this technology has been perfected on the 4th level of the CIA underground Dulce facility in the New Mexico desert. The fourth level of this underground base deals with technological aspects of human aura research, dream manipulation, hypnosis, telepathy and advanced mind control. The ELF weapons 'suck' the life out of the victim's body, and Warwick literally 'fell asleep' on his feet. The suspected assassin was followed out of the auditorium by a quick-thinking woman who then observed him laughing as he proudly reported his murderous deed on his cell phone. (Sources: <http://www.ampliflaire.co.uk>, <http://www.thetruthseeker.co.uk/article.asp?id=5337>, and <http://www.thetruthseeker.co.uk/article.asp?ID=5290>)

Idaho Inventor: Advanced Zero-Point Energy Device

During the FBI siege at Ruby Ridge, Idaho, where the FBI shot to death a mother and child during a standoff concerning alleged illegal firearms, an inventor happened to be living and working on an advanced zero-point energy device in northern Idaho.

As the story goes (told to Erik Masen by an investor who was on his way to visit "Inventor X," who had just made a breakthrough in free energy but also, like Howard Rory Johnson, had made the mistake of publicizing his breakthrough on a local TV station):

The day before the investor arrived, two U.S. Government agents broke into the home, thinking that both Inventor X and his wife were away. As it happened, however, X's wife was still home and very familiar with the use of her hefty handgun. She held the agents at bay inside the house, while debunking their story that they were cable TV repairmen checking out the lines.

Had it not been for the siege at Ruby Ridge that day, who knows what else might have happened there. (Excerpted with permission from Erik Masen's article SUPPRESSION FROM HIGHER UP Inventors Beware! The Deadly Campaign Against Free-energy Devices, *Electrifying Times*, Vol. 8 No. 3 and also in http://www.electrifyingtimes.com/erik_masen_suppression.html)

Grant Hudlow: Method of Converting Garbage and Tires to Gasoline, Etc

During the early days of the Reagan Administration, much lip service was given and some money was budgeted to develop alternative sources of energy. Pahump, Nevada resident Grant Hudlow, a former rocket scientist, was funded to investigate converting garbage, biomass, and tires to gasoline, low-grade heat, fertilizer, and saleable chemicals. His method began to look so promising that the oil companies and their allies in the Reagan Administration got scared and arranged to cut off his research funds. (Source: Gary Vesperman)

Joseph Newman: Energy Machine

In the news some years ago was Joseph Newman's energy machine. While Reagan stalled on acid rain, and Hodel pushed offshore drilling, the U.S. Patent Office continued to block commercial development of this latest of many government-smothered free energy devices. Newman sued the Patent Office for refusing to grant his machine a patent, in violation of its own regulations and the advice of the expert they chose to examine the device. They also issued false statements to the press about the invention's workability.

Over thirty respected electrical engineers, physicists and technical experts have endorsed Newman's machine and signed affidavits confirming his claim of greater energy output than external energy input. Ten congressmen have introduced bills which would require Newman's patent be granted.

As the Newman battle heated up, President Reagan appointed Donald Quigg, a thirty-year Phillips Petroleum executive, to head the U.S. Patent and Trademark Office. The judge entrusted with the case, Thomas P. Jackson, has violated judicial procedure, ignored expert testimony and ordered Newman's prototype confiscated and destroyed. During Watergate, Jackson was the attorney for John Mitchell and the Committee to Re-elect the President's corrupt finance division.

Newman identified the gyroscopic properties of subatomic particles and built a unique arrangement of coils and magnets to draw energy directly from them, thus converting almost immeasurably small amounts of the machine's mass into energy. Theory and device are detailed in "The Energy Machine", \$38.45 including postage, from Joseph Newman Publishing Co, Route 1, Box 52, Lucedale, Mississippi 39452; 601-947-7147. Free press releases and brief technical descriptions are also available; send SASE. (Newman's claims and theories do not seem to be universally accepted among mainstream physicists and engineers. Gary Vesperman)

Bill Jenkins (Reporter): Free Energy Machine

BILL JENKINS: Free Energy Machine. Live on Something's Happening. Audio cassette #A1008-90 \$9.00.

Bill Jenkins hosted the ABC radio "Open Mind" program for 7 years, the most popular program in the country in its time slot. He dealt with "New Age" topics and was taken off the air. Here he discusses the program and his adventures since, including a near arrest on treason charges for preparing to market a free energy machine.

Volcheck: Engine Powered by Gas with Unusual Expansion Properties

In 1995, a man named Volcheck of Grand Coulee, Washington, made a trip across the United States and back in a car powered by a special gas he developed that had unusual expansion properties. He claimed to have obtained the formula from some unpublished notes of Leonardo Da Vinci.

Volcheck says the gas expands enormously at about 395 degrees Fahrenheit to 450 pounds pressure. In other words, from approximately 390 to 395 degrees Fahrenheit, the gas expands from a volume of one unit to a volume of 10,000 units. He used this gas in a modified Franklin aircraft engine which behaved more like a steam engine. He never refueled during the trip, consuming \$10 worth of this special gas.

Soon after his return, some congressmen invited him back to Washington, DC, for a special hearing and congratulatory meeting. While he was gone, U.S. Government federal marshals or a S.W.A.T. team forced entry into his shop, confiscated or destroyed his record-setting car, plans, components, and special gas containers. They subsequently told him to forget any more projects like this.

Gianni A. Dotto: Anti-Aging and Anti-Gravity Thermionic Couple

DATE/TIME: 06/13/93 10:05
From : ROBERT BONNER
To : DAVID MCWHERTER
Subject: (R) UV radiation + us
Folder : A, "Public Mail"

"Dave, There was an Italian researcher (actually he had a Ph.D.) who did research on how magnetic fields affected the body. He made about 3 or 4 classifications of magnetic type energy fields. Two were bad; one had some health benefits but in the long run had detrimental effects. The last one was, of course, the one he speaks of as far as research goes. This person's name was Gianni A. Dotto, born in Venice. His main area of research was "Bio-physics". Anyways, he built something that resembled a thermionic couple. It also levitated too... I said his name "was"; he's dead – murdered some time back. His device worked really well as far as curing cancer goes. And he was killed for it. Run over, several times to ensure his demise. [Details about the Dotto Ring are available online at <http://www.rexresearch.com>]...

"His ideas on how our DNA is electrically controllable is fascinating. With this device you could theoretically live until you died of an "accident". Once you reach about 40 something, (well, let me put it differently...) Once your body reached 10 base pairs per turn (DNA lingo) you could use the device to SUSTAIN that state of being, anything less than that and you begin to deteriorate. i.e. grow old... Now, if, perhaps, you could find the right setting, maybe you could be 25 forever. But who in the world wants that?!?!"

"There were "reverse aging" effects detected on his elderly patients. So this is where all that mess above comes from. It isn't claimed to just be theoretical; he (Dotto) witnessed it. Anyways, I have the document and have read it. Would be cool to build.

"The most expensive piece is the ring part; it is an alloy. But, it would cost about 13 grand to build, maybe less if you knew the right people. It might be worth it for immortality and a life free of cancer and AIDS and the common cold. --- Robert Bonner"

IPMS: Thermal Electric Cooling Devices

The I.N. Frantsevich Institute for Problems of Materials Science (IPMS) was established in Kiev, Ukraine in 1951. It operated in absolute secrecy and was totally unknown to the American intelligence community until just prior to the implosion of the Soviet Union in August of 1991. The mission of the Institute was to use whatever tools or means were necessary to know everything there is to know about materials. They had no production deadlines to contend with, and there was not a single applications engineer in the entire organization.

The 6600 scientists and technicians who worked in the Institute developed an entirely new model of nonlinear quantum mechanics to describe the forces which make the world we live in behave as it does. This new model suggests that the material world is substantially different from the world described by the models relied on in the West. Seven new sciences, twenty-seven new technologies, and one hundred thirty previously unknown materials developed in the Institute are based on the same revolutionary new model of quantum mechanics.

Research and development in the deposition and culture of layered crystal lattices has produced an entirely new class of materials, previously unknown to Western science. These are referred to in recently submitted patent application documents as "Thermal Electric Cooling Devices". Because of the nature and function of a specially designed combination of crystal layered "hosts" and their intercalated "guest" materials, these specially designed capacitors actually absorb energy when subjected to a flow of electrical current, producing a specific cooling effect on the material surfaces. All other known materials produce heat when subjected to the same conditions. Temperatures of 60 degrees Kelvin (-259 degrees Fahrenheit) have been produced under controlled, carefully documented laboratory conditions. This is cold enough to liquefy free-standing nitrogen gas from the atmosphere.

The potential applications for this technology are manifold, but perhaps the most important is the potential it provides to totally eliminate any need for the use of compressed fluorocarbons of all types in refrigeration. Parallel applications in the telecommunications, computer and electronics industries have also been demonstrated to be highly effective and cost efficient, particularly as they relate to the use of super-conductive materials.

Arrangements to commercialize these useful energy inventions by joint ventures of the IPMS and more than a dozen private sector companies have been repeatedly sabotaged by the U.S. Government's Defense Intelligence Agency and others. (Source: David G. Yurth, *The Anthropos Files: Tales of Quantum Physics from Another World* – 2nd Edition, 2007)

Bob Lantz: Lantz Water and Power System

From : "Jerry E. Smith" <jerryesmith@gbis.com>
To : "Gary Vesperman" <vman@skylink.net>, "gear2000@lightspeed.net" <gear2000@lightspeed.net>, "halfox@qwest.net" <halfox@qwest.net>, "mruppert@copvcia.com" <mruppert@copvcia.com>
Subject : RE: Lantz needs Reno attorney
Date : Sat, 9 Feb 2002 08:58:07 -0800

Hi, I'm not sure who I'm responding to, so I am sending this to all of you. The only lawyer I know in the area who might be interested in this case is Day Williams of Carson City. He is a civil rights and personal injury lawyer who has represented me in the past (also the late Jim Keith and Sirhan Sirhan!).

Day R. Williams
Attorney at Law
204 N. Minnesota St.
Carson City, NV 89703-4151
775/885-8398
daywillia@aol.com
www.daywilliams.com

I hope this is of some assistance.

Jerry E. Smith
Author, "HAARP: The Ultimate Weapon of the Conspiracy"
(Adventures Unlimited Press, 1998)
<http://www.jerryesmith.com>

-----Original Message-----

From: Gary Vesperman [SMTP:vman@skylink.net]
Sent: Saturday, February 09, 2002 8:06 AM
To: Jerry E. Smith
Subject: Lantz needs Reno attorney

Jerry, I don't know anything about this, and I am too busy to even read it.

Gary

From : "David Crockett Williams" <gear2000@lightspeed.net>
To : "Hal Fox" <halfox@qwest.net>, "Gary Vesperman" <vman@skylink.net>, "Michael C Ruppert" <mruppert@copvcia.com>
Subject : Urgently need referral to Reno area attorney for Lantz
Date : Fri, 8 Feb 2002 02:16:08 -0800

WWII vet framed by CIA agent to stop energy inventions?

Below is draft of press release I will finalize with Lantz on the phone this morning and send to media lists etc. Please let me know if you can refer an attorney in Reno area who I can phone today to help with Lantz court appearance Monday Feb.11 at which his date to surrender to jail will be set.

From: "David Crockett Williams" <gear2000@lightspeed.net>
Subject: WWII vet framed by CIA agent to stop energy inventions?
Date: Thursday, February 07, 2002 10:06 PM

Seventy-five year old retired chemist and engineer Bob Lantz of Reno, Nevada, fought for the United States as a Navy pilot in WWII, but Monday the U.S. Government is set to imprison him, to "die in prison" according to his "public defenders", in an apparent scheme to suppress his new-energy invention to replace nuclear and fossil fuel power. Perhaps paralleling the case of Horst Jeske, jailed for years in a bogus fraud conviction set up by wired funds transferred by Frederick van Boduncan years after Jeske introduced him to Lantz as a CIA agent, and the case of San Francisco investigative journalist George Williamson who identified Boduncan from his research as a CIA operative previously involved in smuggling drugs into the US via oil rigs in the Gulf.

George Williamson was later named in a lawsuit by Mohamed Al Fayed against the CIA and other government intelligence agencies regarding purported CIA documents Williamson offered to Al Fayed linking the agency with the death of Princess Diana.

Lantz reports Monday for a custody surrender hearing after his sentencing to 5 years imprisonment for a fraud in fact perpetrated without his knowledge by Norbert Vogler of Colorado who forged investment certificates with Lantz' signature notarized by his friend who later acknowledged that Lantz was not present when the forged signatures were notarized -- one of 237 lies that Lantz has documented by Federal prosecutors in his trial after the government put him into poverty by illegally confiscating over \$250,000 from him after a raid in 1994.

Why would anyone want to put an old man in jail who is so scrupulously law abiding that he never even got a speeding ticket, someone who accepted the government secrecy order suppressing the Papp Air Engine and therefore cancelled his contract to make Papp's prototype, someone who even calmly accepted the multimillion dollar loss in business due to U.S. Government denial of his permit application to export his water purification Sonofloc System 77 to the government of Egypt for seawater desalination?

Could it be that powerful people within the U.S. government are implementing covert policies to keep new energy inventions suppressed that would threaten the fossil fuel and nuclear power industries? Copious evidence says yes, and that Lantz' troubles really started after he began making new-energy system prototypes for other inventors in 1977 culminating with his 1989 discovery of an "overunity" energy generation system which combines his System 77 with an ultracentrifuge so the overall device not only purifies any kind of water but also produces sufficient heat to produce megawatts of electricity without any fuel at all, perhaps by "tapping the zero-point energy" with a kind of device the US Department of Energy in 1998 called "the Holy Grail of energy research".

How else could it be possible for this bogus fraud case to even be prosecuted after expiration of statute of limitations, with falsified evidence and the apparent collusion of prosecutors who lied and and public defenders who refused to contest the lies and offer documentation of innocence? Why else would Boduncan have brought this "gold certificate scheme" to Lantz as a funding mechanism for his invention?

The Lantz Water and Power System was first tested in 1989. It can solve our global energy and water quality problems.

And what does he get for it? An unacceptable "deal" offered by prosecutors and pushed by two successive public defenders who each claimed he "would die in jail" unless he took the plea bargain acknowledging guilt and forfeiting his assets (over \$100k of that confiscated was not even in his name), a "raw deal" which this War Veteran refuses to accept.

Are we to sit by and let this happen or will concerned citizens and media bring his story out so he can get the legal help he needs to get his bogus conviction reversed, his name cleared and his money back so he can pursue development of his New-Energy System?

There is a vault at the US Patent Office containing 5,000 patents ordered secret by the government, confiscated from the inventors who are threatened with 20 years in jail if they release the information as per "dual-use" secrecy law uncovered under Freedom of Information Act and reprinted on p.162 of Jeane Manning's book *"The Coming Energy Revolution"*. Her book provides overviews of various energy inventions. Isn't it about time we did something to take this situation under public investigation and control, especially motivated by the current Enron fiasco exemplifying the "ethics" of the fossil fuel industry and government complicity in "rigging" the energy industry?

Can we help Bob Lantz become a hero of this coming energy revolution instead of its casualty? Certainly our surviving WWII veterans deserve better treatment from our country citizens that they love and fought and died for.

Dr. Timothy Trapp: 127 Energy Technologies

Dr. Timothy Trapp, Warren, Ohio, is President of the non-profit company World Improvement Technologies (WITS). A contact email for WITS is wits2011@yahoo.com. They also have another non-profit organization called World Improvement Through The Spirit (WITTS) ministry.

Dr. Trapp called Gary Vesperman June 24, July 1, and again on July 4, 2006 with accompanying emails to provide more details on the companies' activities and suppression history.

Currently employing 11 scientists, WITS has been active in producing, installing and servicing free energy systems worldwide for 19 years. Dr. Trapp and the two non-profits have developed over 127 energy technologies. Approximately 20 utilize cracking water into oxygen and hydrogen, approximately 14 are gravity motors, approximately 50 are radiant energy machines, and the remaining are miscellaneous energy, propulsion and pollution remediation devices.

127 energy technologies are currently commercially available, including large-scale over-unity power plants – 5 megawatts and up. Many of these power plants are under construction in foreign countries but not in the United States due to suppression by the U.S. Government. WITS also makes and sells a device for 30 dollars that can be added to any electrical system that has batteries which would drastically increase the efficiency of that system (e.g. cell phone, radio, electric car).

Dr. Trapp states that if governments were FOR this technology instead of against it, a home-power generator the size of a desktop computer could be built and sold for about the same cost as fuel powered generators or less.

When Dr. Trapp moved back from Alaska, upon arrival, the shipping container containing his tools, equipment, etc., had been emptied. In spring 2001, Trapp's lab in Arizona was raided. At the end of 2001 two WITS scientist assistants were (and currently still are) in Ohio prison on trumped up drug charges.

In the past 20 years the U.S. Government has destroyed over 14 WITTS laboratories. As recently as spring 2006 a WITTS laboratory burned to the ground. The contents of each laboratory contained millions of dollars worth of equipment and several costly free energy machines. Dr. Trapp's laboratories were raided, his equipment was smashed, and his people were beaten and arrested numerous times on false charges. False evidence was planted many times.

After beating up one of his WITTS salesmen, the salesman was then killed by driving the salesman's car off a cliff. Another WITTS employee was also murdered by U.S. Government and so-called law enforcement agents. There have been numerous attempts on the lives of Dr. Trapp as well as many of his associates.

Dr. Trapp wrote "This really should be a wake-up call to the people of America who believe we have religious freedom here. We don't, when it comes to anything that might help the little guy.

On the positive side, with energy prices constantly going up, there is more activity than ever in alternative energy. Power plants are going in many countries. And a few countries are seriously working to get off fossil fuels all together."

From : Jerry Decker <jdecker@keelynet.com>
To : Gary Vesperman <vman@skylink.net>
Subject : Re: Trapp energy suppression
Date : Sun, 23 Dec 2001

Hi Gary! His name is Tim Thrapp.... (Not entirely correct. His name is Dr. Timothy Trapp. Vesperman) he used to live in Alaska. He was the one who told me about Henry Ford working with John Keely to create an arrangement inside early Model Ts so that magnets placed in them would make them self-running....the story goes that Ford was threatened by the oil companies for graft (kickbacks) or something along those lines...so he did this magnet trick as insurance...no one has yet come back with any proof of the claim that SOME Model Ts had these slots in the bell housing where magnets could be placed to make it self-running...here is the file; <http://www.keelynet.com/energy/ford.htm> (Vesperman: This can not be entirely true. John Keely died in 1898.)

When Tim called me several years ago with that story, he said one of the cars had been found and the engine or a copy of it had been demonstrated, and the inventor killed on his drive home with the engine on a trailer...the engine was stolen... Tim also said he had some radical new power generator capable of 50 kilowatts but he gave no details about it...this was back in 1997....see ya!

Gary Vesperman wrote:

Dear friends, I have received a letter from an energy inventor the following new energy suppression incident: "Tim Trapp, from Ohio, was put in jail by the federal authorities in Arizona and by the state police in Ohio."

Without success I conducted some searches for Tim Trapp on keelynet.com and google.com.

Do any of you know of any authoritative reports on Mr. Trapp's energy suppression troubles?

Gary Vesperman
702-435-7947

Jerry W. Decker - <http://www.keelynet.com>

Richard Diggs: Liquid Electricity Engine

Richard Diggs, Custom Invention Agency, P.O. Box 11, Carthage, Missouri 64836; patent process on hold, though he has over two hundred others. Diggs developed at an inventors workshop (I.W. International) his "Liquid Electricity Engine" that he believed could power a large truck for 25,000 miles from a single portable unit of his electrical fuel. Liquid electricity violated a number of the well known physical laws that the inventor pointed out. The inventor was also aware of the profound impact the invention could have upon the world's economy – if it could be developed.

David G. Yurth (Reporter): Remediating Nuclear Waste Materials

From: David G. Yurth [mailto:davidyurth@comcast.net]
Sent: Saturday, April 15, 2006 5:27 PM
To: 'STetreault@stephensmedia.com'
Subject: Remediating Nuclear Waste Materials - UNLV

Dear Mr. Tetreault: After reading your article in the Las Vegas Review Journal entitled "Nuclear Project Draws Interest," I thought it may be of interest to you to know that the DOE has played this game with university and privately funded laboratories for many years. Perhaps the most comprehensive review of this subject ever undertaken was prepared by Mr. Richard Shamp, President of Nuclear Remediation Technologies, headquartered in Hyattsville, Maryland (301) 559-5057.

Beginning in 1997, NRT and its chief scientist S-X Jin [once the highest ranked particle physicist in the People's Republic of China, until he escaped to the US in 1994 while addressing the Institute of New Energy symposium in Salt Lake City, Utah] have been submitting critical laboratory documents to DOE, demonstrating the effectiveness of known technologies used to remediate radioactive emissions generated by nuclear fuel waste materials in both solid and liquid form.

After being finessed into providing all the definitive laboratory data to Dr. Frank Goldner of DOE's nuclear remediation division, then-Secretary of DOE Spencer Abraham attempted to confiscate, classify and impound NRT's technology while at the same time pretending to be considering providing grant money to support its continued development.

The fact that the technology in question had already been awarded six patents [K. Shoulders et al] was the only thing that prevented him from succeeding. Instead of providing grant funding, Dr. Goldner was instructed to put an end to NRT's pursuit of DOE funding for the development and deployment of its technologies. And that is precisely what he did.

During a conference call held on November 15, 2003, I was informed by Goldner that not only did DOE not intend to ever provide any funding to anyone for the purpose of remediating radioactive emissions in spent nuclear fuels, he insisted that it is and will continue to be DOE's policy for the next 40 years to encapsulate and bury every ounce of high-grade nuclear waste material stored in the US under ground at Yucca Mountain.

Further, he told us that any attempt to obtain any high-level nuclear waste materials for testing by anyone, including government funded laboratories, would be arrested and jailed without access to legal counsel under the Export Administration Act. I still don't know what the EAA has to do with remediating radioactive emissions, but that is what he said.

In 1999, while Elliott Richardson was Secretary of DOE, NRT was awarded a discretionary grant of \$2,000,000 for the purpose of advancing its test schedule. The work was to have been undertaken in concert with Dr. George Miley, physicist in residence at the University of Illinois at Champaign-Urbana – Dr. Miley's laboratory at the Champaign-Urbana campus was level 2 accredited by DOE, and was therefore acceptable as a test and development site. However, within less than 90 days after the announcement of the grant had been published, pressure from within the Department rose to such extraordinary levels that Secretary Richardson was forced to withdraw the grant, albeit grudgingly.

The only similar technology ever contemporaneously developed in the US for the remediation of radioactive emissions in high-grade nuclear waste materials was developed in the late 1990's by Dr. Paul Brown and his colleagues at World Atomics in Colorado Springs, Colorado. After being granted several patents for the 'Nuclear Spallation Device' he designed, Brown contracted with several Japanese contractors to build three successively powerful prototype versions of his device.

He had them built in Japan because DOE actively intervened more than a dozen times to prevent US companies from building it. The problem with Brown's device was that it was little more than a small, semi-controlled nuclear fission-powered device designed to continuously bombard nuclear waste material targets with a highly charged gamma ray field. Because it was so dangerous to operate, Brown was never able to obtain the necessary State Department or UN transport clearances to have it shipped across international waters into the US for further testing and development.

As you may recall, Dr. Brown was killed shortly thereafter under the most questionable of circumstances, just as the utility of his nuclear spallation technique was about to be publicly demonstrated in Japan.

(Only a month before he died, Dr. Brown met with me, Gary Vesperman, and a few of my business and science associates in Henderson, Nevada to present his method of neutralizing radioactive waste. His method is No. 13 in my list of methods of neutralizing or disposing of radioactive waste in <http://iiic.de/docs/GVComparison.htm>. A few weeks after Brown's suspicious fatal car accident, Art Rosenblum also died in a car accident. Rosenblum had been enthusiastically promoting Randall Mills' Blacklight Power Inc.'s energy source.)

We have known how to safely remediate radioactive emissions from spent nuclear fuels, both liquid and solid, for nearly a decade. We have the test data and prototype apparatus to prove it. That data, including all the protocols, policies, procedures and experimental design criteria associated with our work have been submitted to DOE many times over – Dick Shamp can tell you all about it if you want to go to the trouble to ask him – with the net result that DOE will not allow the US Postal Service to deliver our proposals any longer. If you want to see what is really going on with nuclear remediation, this is a very good place to begin.

Thanks for writing your article – you're about to find out how big Pandora's box really is.

David G. Yurth, Ph.D.
Director Science and Technology
Nuclear Remediation Technologies, Inc.

(Yurth's letter to Tetreault has not been published in any Las Vegas publication. Why? Maybe to protect the profitable contracts to be generated by the DOE-estimated \$150 billion lifecycle cost of the Yucca Mountain Nuclear Waste Repository? Gary Vesperman)

Paul Brown: Hyper-Cap E-Converter

Paul Brown, Ph.D., had invented this device which Gary Vesperman wrote up for his "Advanced Technologies for Foreign Resort Project" (see <http://www.icestuff.com/~energy21/advantech.htm>).

"Perpetual Battery. The hyper-cap E-converter is a thick quarter-sized battery which would put out .001 watt "forever" for such applications as critical components inside fail-safe computers, cellular telephones, etc. The energy comes from tapping ether fluctuations."

The following is excerpted with permission from "Inventor Paul Brown's Nightmare Story", *Electrifying Times*, Vol. 10, No. 1, www.electrifyingtimes.com. His story originally appeared in Jeane Manning's book "*The Coming Energy Revolution*" www.jeanmanning.com.

Brown invented a novel method for converting natural radioactive decay material into electricity in the form of a battery. In February 1987 the proud inventor and his associates at a private research company in Boise, Idaho, decided it was time to make a public announcement of his discovery.

A series of traumatic events followed. The Idaho state departments of health and finance filed complaints against both the company and Brown. His license for handling radioactive materials was suspended. He began to receive anonymous threats, such as "We will bulldoze your home with your family in it."

Relocating the company to Portland, Oregon, did not stop the troubles. Despite the fact that a 1988 Fortune magazine article commented favorably on the nuclear battery venture, securities fraud charges were filed against Brown and his company. Oregon's finance department investigated, as did the Internal Revenue Service and the Securities and Exchange Commission.

After meeting each challenge, Brown redoubled his efforts to develop his technology, but events worsened. His young wife was assaulted. Even in their home they did not feel safe; it was robbed three times and vandalized on four other occasions. Brown was accused of drug manufacturing and eventually lost control of his company. The Browns' also lost their home. Finally, the pipe bombing of his mother's car in the early 1990s drove Brown to become a recluse.

"I understand now why inventors drop out of society," he said in a 1991 open letter to other new-energy researchers. His advice to them! "Keep a low profile until you have completed your endeavor, be selective in choosing your business partners, protect yourself and your family, and know that the nightmare stories are true." Brown eventually died in a suspicious car accident in April 2002.

Ira Einhorn: Free Energy and Mind Control Researcher

(Excerpted from "A Snapshot of my 70's" by Ira Einhorn, September 1, 2002)

... What Geller could do, I saw a lot of it first hand, indicated that the basic physical framework in which physics operated was inadequate and that so called "free energy" devices -- devices that would solve our energy problem and end what is now called global warming and allow for the decentralization of most economic activities -- could become a reality. Hence I circulated all previously known anti-gravity information and all the emerging work on "free energy" devices.

Unfortunately, all new technology can be used as weaponry as well as for human benefit. So, I was soon up to my ears in a multi-pronged intelligence game that is still waiting to be unraveled...

... So when the opportunity arose, after a series of dinners and meetings in Princeton and New York with Bogdon Maglich, the head of Migma Fusion, the only private nuclear fusion research operation in the United States, and a number of Yugoslavian government officials, I agreed to help organize a large Tesla celebration. To this end, I enlisted the support of the president of the prestigious Franklin Institute in Philadelphia, Bowen Dees, and after a stint at Harvard and with the blessing of the Yugoslavian Consul-General in New York, I went off to Yugoslavia, to spend days at their expense, as an unofficial ambassador.

I was planning to do many things during this celebratory conference that would have linked the Tesla Museum in Beograd with the Franklin Institute in Philadelphia: besides giving Tesla his just due and showcasing his achievements in a major exhibit at the Franklin Institute, while holding a major international conference on his works, I would also have organized a smaller conference on the suppressed aspects of his work in mind control and free energy and found a way to directly demonstrate mind control to those who came to the conference.

In the fall of 1978 I was a Fellow in Residence at the Institute of Politics within the Kennedy School at Harvard. I taught one course, ran a small lunch time chat series in which Harvard luminaries, Ambassador Reichauer, E. D. Wilson and Karl Deutsch, among others, ate and chatted with 5 or 6 of us for a couple of hours; I lectured in every conceivable venue at Harvard, conducted a number of public symposiums, brought a number of the members of my Network to Harvard to lecture, ate dinner with a host of well known political figures, and made an inordinate amount of noise about mind control technology and the Russian Woodpecker to, among others, then CIA head Stansfield Turner. This led to a meeting in the Boston Airport, arranged by one of JFK's chief aides, on the matter with a top defense intelligence scientist who ended up spending the evening with me and giving me his home telephone number.

In 1979 I received a small private foundation grant to study free energy devices in preparation for a large involvement in such activities. I was planning to visit all of the inventors personally and then prepare a report that would have formed the basis of a venture capital enterprise that had been encouraged, due to some of my mailings, by a number of my affluent friends. The objective was to develop and bring one device to the marketplace...

...All was not to be. I was busted for a murder I did not commit, and all my work on mind control and free energy became history. [signed] Ira Einhorn September 1, 2002

The following is excerpted from Ira Einhorn's July 5, 2002 email:

Robert Eringer proposed all kinds of book schemes for me; schemes in which I was not interested. Nor did I find any of the people my agent sent to me, re: the biography, to be of interest. Thus when Eringer suggested he would like to look at my fourth novel, Cantor Dust, which was near and dear to my heart, I informed my agent and sent it to him. Eringer was very enthusiastic about it. He said he would prefer to do my autobiography, but would work on getting my novel published as an opener to getting my autobiography. I said he was welcome to try. Thus began a continuous stream of many hundreds of e-mails between this alleged intelligence operative and myself, broken only by his journeys to England, wherein he told me he saw a number of publishers without success and one new house that agreed to publish Cantor Dust when they were actually in business, and his family vacations. We were still at it the day I was extradited to the United States: July 20, 2001... [Deleted]...

One of Robert Eringer's closest associates is Claire E. George, past Deputy Director of Operations for the CIA, in charge of covert operations for the entire planet. Sources who have researched the situation indicate that Claire E. George and Robert Eringer have worked together on a number of operations, still work together and have a pile of money at their disposal.

Einhorn presents the highlights of his case in <http://groups.yahoo.com/group/Ira-Einhorn/message/454>.

"We'll know our disinformation program is complete when everything the American public believes is false." -- William Casey, CIA Director (from first staff meeting, 1981) (Source: THE BROTHER JONATHAN GAZETTE DAILY DIGEST Wednesday June 28, 2006.)

How much is good press worth? To the Bush administration, about \$1.6 billion. That's how much seven federal departments spent from 2003 through the second quarter of 2005 on 343 contracts with public relations firms, advertising agencies, media organizations and individuals. (Washington Post; Feb. 14, 2006) (Source: <http://www.washingtonpost.com/wp-dyn/content/article/2006/02/13/AR2006021301897.html?nav=hcmodule>)

Thomas Henry Moray: Radiant Energy Pump/Electricity Generator

Thomas Henry Moray, Ph.D., (August 28, 1892 - May, 1974) was an inventor from Salt Lake City, Utah. Moray graduated from The Latter Day Saint's Business College. Moray studied electrical engineering through an international correspondence school course. He received a Ph.D. in electrical engineering from the University of Uppsala.

T. Henry Moray's research dates from the time he was 9 years old (1901). Over the 73 years of Moray's research, he left behind him a wealth of notes, not only pertaining to radiant energy, but a wide range of scientific research bordering all the way from the devulcanization of rubber, the influence of mineral reactions in the presence of high energy, bio-electronic effects (electrotherapy), sound pick up, solid-state physics, and finally the detection of energy that constituted the major endeavor of his work.

Moray was a pioneer in the field of electrical energy. As a youth he greatly admired Nikola Tesla and in particular was very interested in Tesla's obsession with the earth having a limitless supply of energy available to it from the universe. Like Tesla, Moray wanted to find out how to tap this energy. Like a lot of people he became amazed at the "crystal radio" where a crystal can be tapped with a fine wire to make a radio work – without any battery or power. Moray figured that if this was possible it should be possible to find a crystal (or "magnetic rock") that could be tapped for a power source.

Moray became very interested in the properties of certain rocks and crystal structures and the powders from them. He actually developed and utilized a transistor more than 20 years before anyone ever dreamed of such things. These solid materials are what he made his so-called Moray valves out of; they were like radio valves *but were not using a heated coil* like radio valves (also known as vacuum tubes in today's terminology). They were all cold with no external power to feed them. They were a mixture of semi-conducting materials and intricate one-way conducting materials (diodes in today's terminology). The Moray valve was therefore a solid-state device – unlike a radio valve that heated a plate to produce energy.

It is well documented that Moray developed a bipolar semiconductor as early as 1927. His germanium "valve" was working in 1931. In the 1930s Moray developed advanced semiconductors and transistor-like devices.

Moray provided a complete disclosure of his semi-conductor research to Dr. Harvey Fletcher of the Bell Laboratories. Dr. Fletcher later became head of the department at Bell Laboratories that developed the transistor. Moray, therefore, could be the true father of modern electronics since his work predated the Bell Laboratory bipolar transistor findings by at least 20 years.

During the 1930's T. Henry Moray was refused a patent on his cold semiconductor cathode because the patent examiner couldn't understand how it could emit electrons. The patent examiner reported that he could not allow the patent because he could not see how it would work since "the cathode had no means of being heated".

"He tried to patent his device, but the requests were denied because the item he called the "Moray valve" was too new a thought for the patent examiner. It was actually a germanium transistor, and solid states were unknown at the time." his son John Moray said. 20 years later the development of the transistor apparently proved that his device could actually have worked.

Both Nikola Tesla and Thomas Henry Moray consider harnessing cosmic energy (vacuum or zero point energy in today's terminology) as the most practical method of producing energy yet discovered by man. Furthermore, they thought it is possible to utilize this vast source of energy from the universe without a prime mover at any point on the earth or in space – on the ground, in the air, on the water, under the water, or even underground.

Radiant energy is energy that is transported by waves. This includes energy transmission in the form of waves through space or various media. Radiant energy is also energy transferred through electromagnetic waves. Solar energy is a type of radiant energy. Radiant energy is the sum total of all the energy that comes to the earth from all the universe. The earth also reflects back radiant energy into the universe. Our sun directs electrically charged particles towards us. Radiant energy may be calculated by integrating or summing radiant power with respect to time. Radiant energy is usually expressed in joules.

During the 1920s Moray demonstrated a "radiant energy device" to many people who were unable to find a hidden power supply or batteries. Moray called his device a solid-state detector or the "Moray valve". It basically comprised of a large antenna connected to a complex series of high-voltage capacitors, transformers, and semiconductors. By supposedly stimulating the existing oscillations of radiant energy from space, his device could generate electrical power without any man-made power input. By 1936, Moray had eventually engineered his device so that a 55-kilogram version could constantly produce 50 kilowatts of power for several days.

An electrical generator may be considered as not in the true sense a generator – as electricity is not made by the generator – but is merely an electrical pump. Moray's radiant energy device may then be referred to as a cosmic ray pump: that is, a high-speed electron oscillator serving as a detector of cosmic radiations which causes a pumping action or surging within its circuitry. Moray used the term "radiant energy" to describe that source of energy coming from the cosmos to earth and radiating from the earth back to where it came. This is the energy the Moray device captures and could be described as those particles of energy pervading all space.

What sort of an apparatus is Moray's radiant energy device? Briefly, it would appear to be similar to a radio receiving set of power proportions.

An antenna is connected to a 29-stage solid-state collector material; a small rounded pellet mixture of triboluminescent zinc, a semiconductor material, a radioactive or fissile material, and germanium. The device contains two coils of wire, or inductances. It also contains several condensers, or capacitors, of different sizes. There is a detector tube, or electronic valve, and two oscillator tubes. Added to this is a "bar of silver and a bar of copper", a starting device, and a step-down electrical transformer, reported to be 1000-to-1, primary to secondary.

After tuning of the device the semiconductor material acts as a one-way gate (diode in modern terminology) for surges of high-frequency background atomic ion energy which can go through the material more readily in one direction than the other. For conversion of ionic to electromagnetic energy to then be transformed into useful electrical power by conventional radio circuitry and a transformer, the device must be grounded.

All of this was enclosed in a box measuring about 30 inches long by 16 inches wide by 16 inches high. It weighed about 30 kilograms. There were no moving parts. Moray said there are no dangerous radiations surrounding the box when it is in operation.

Moray's 30-kilogram radiant energy device produced 4 kilowatts of cold electricity which was able to power light bulbs. However, electric motors require special winding to increase their efficiency. While commercially available electric motors will operate on the power from a radiant energy device, they are not as efficient as motors running on ordinary commercial currents. Moray says when his motors are running in the dark they glow with a violet aura. His motors ran cold!

It has been estimated that using current dielectric technology that a 50-kilogram radiant energy device could be built to produce 300 kilowatts – sufficient to power buildings and also electric vehicles.

Some persons who have seen radiant energy power lights say the bulbs look as if they were filled entirely with white light, as if the gas itself which fill the bulbs were fully incandescent. Moray believes this to be true.

Radiant energy will heat electric flat irons and other electrical heating devices. It is claimed heating capacities are reached much more quickly with radiant energy than with commercial currents, and are considerably hotter than when powered with ordinary electric energy.

One photograph shows Moray demonstrating his generator as it powers 50 100-watt light bulbs and a 655-watt Hotpoint iron. Thus he proved that his radiant energy device was not running off batteries – as his detractors said it did.

By 1936 he had developed a generating unit that weighed about 55 pounds and was capable of producing as much as 50 kilowatts of power on a steady basis.

On several hundred occasions Dr. Moray lighted a bank of 35 light bulbs with power from his simple but ingenious radiant energy device. There were 20 150-watt bulbs on the panel. At the same time the generator powered a 600-watt glow heater and a 575-watt flat iron.

Moray, as Nikola Tesla before him, was unsuccessful in introducing his devices working on this principle. Some report that his secret was forgotten. Moray tried for several patents to no avail.

These valves are ONE reason why patents were continually refused – as he was told "there is no such thing as free energy".

"You must put energy in to get it out." As patents were applied for, there were refusals due to the fact that the patent applied for "infringed other patents". Even though Moray patiently wrote details of how this could not be, the US Patent Office refused to allow any.

On the other hand, Moray gradually had perfected his device's output from a capacity to light one small incandescent light bulb to a present capacity claimed to be 50 kilowatts. Fifty kilowatts represents about 67 horsepower and, certainly, 67 horsepower is not to be disregarded. Many small factories do not use as much as 67 horsepower.

According to Moray, one of his radiant energy devices can be built for about \$800 (year is unknown as there has been considerable inflation). Mass production methods might cut this price in half. Under these circumstances, a unit in a home would bring about a substantial saving in power bills over several years time.

As many as 100 persons have witnessed radiant energy demonstrations. Radiant energy, as it emerges from the Moray apparatus, may be considered a form of electricity. It is an alternating current, but an alternating current of very high frequency.

If a photograph of a single bulb lighted with radiant energy is taken the print shows a large, dark ring, perpendicular to the base of the bulb. This ring looks like a circle of translucent black fog. It seems the light somehow reflects itself on the air, or projects a shadow of itself there.

The demonstrations attracted newspapers and scientists from Bell Laboratories and from the Department of Agriculture, but none could attest to how the device actually operated nor could evidence of fraud be found. Even though eminent scientists examined his device during and after its operation, and admitted that they could not understand the source of the power they had witnessed, still he was never able to gain their support for his work.

Moray refused to sell his technology to corporate interests, fearing its misuse.

In the later 1930's engineers from the Rural Electrification Administration (REA) were ordered to work with him by President Franklin Delano Roosevelt. A controversy grew between the inventor and the government engineers. As a result Dr. Moray charged that the REA was trying to sabotage his work.

Moray reported that he and his family had been threatened and shot at on several occasions. His laboratory was ransacked to stop his research and public demonstrations. Repeated assassination attempts were made against his life. It was necessary for him to bulletproof his automobile since he was shot at while driving down the public street. Small wonder that Moray developed an extremely alert and suspicious nature, and visitors to his desk often noticed a fully loaded pistol lying on the desktop within easy reach of his hand!

In 1940 Moray demonstrated before the members of the Public Utilities Commission (in Utah?) his free energy generator. It maintained a continuous output of 250,000 volts with no apparent input.

The next day Moray was found shot in his lab, and all of his notes were stolen. Moray had been wounded by shotgun pellets in his lab by an attempt to frighten him into handing over the secrets of his work. Except for his own skill with a pistol to successfully defend himself against his assailants, Moray would have been murdered.

An REA engineer named Felix Frazer who was Moray's assistant had gone berserk and smashed the Moray device with an axe. It was never rebuilt. The frustrated inventor could not afford to duplicate his invention. He went to his grave many years later convinced that the destruction of his device was part of a communist plot. Frazer apparently was angered that Moray would not sell his device to corporate interests.

There is a rumor that to stop the USSR getting this technology the equipment was destroyed by Moray's assistant. Or, the equipment was destroyed because Moray refused to unconditionally hand over all aspects of the devices he had built. It was further claimed that one of his sons dumped the entire contents of Moray's laboratory into a river – because of continued threats and harassment – not only to himself but to his family as well.

The entire truth may never be known, but it is a fact that Fraser became enraged and grabbed a sledgehammer and smashed Dr. Moray's device to pieces.

"Dad believed to his dying day it was all part of a communist plot," John Moray said. "He had refused to cooperate with certain known communists so his invention paid the price," Moray added.

"It certainly smacks of some kind of conspiracy," the younger Moray mused.

The tragedy of it all was in the fact that Dr. Moray's years of research and development, and his entire fortune were wiped out when his device was smashed with a sledgehammer. It had taken Moray 20 years and \$200,000 of his own money to develop it.

"Because of the expense and hardship in rebuilding the generator, which the patent office had refused to consider, my father never actually completed more than one unit at a time as he perfected it.

"Each updated model used parts from the previous model as he made improvements in successive stages."

Another factor in the total destruction of this marvelous technology was the demise of the various companies that provided Dr. Moray with components. Both the Great Western Radio Co. and the Baldwin Electric Co., which he worked with vanished as part of his resources.

"Inflation, the massive war effort and threats to my father's life spelled doom to any ideas he may have had for replacing the destroyed generator device," the younger Moray claimed. However, more than \$200,000 in the late 1920's and early 1930's would indeed translate into many millions today.

Make no mistake about it; Dr. Moray did what he claimed to have done. He had achieved free energy. The Soviet Union even offered to provide him his own fully equipped laboratory in Russia, with no expense spared, and to back his experiments fully. Fraser could have been a trained Soviet agent who had succeeded in working his way into Moray's confidence and gaining access to Moray's laboratory as a technician and assistant. When Moray still refused to give his invention and services to the Soviet Union, the assistant destroyed the device, smashing it to pieces with a sledgehammer.

Sadly, T. Henry Moray died with his dream unrealized and the original device destroyed.

Walter Rosenthal (Reporter): Small Electrical Power Converter

Walter Rosenthal was a retired aerospace engineer with some test equipment such as oscilloscope and voltmeters. He had closely followed for a long time development of new sources of energy and personally knew some energy inventors. (Rosenthal recently passed on from natural causes. He received much praise for his careful energy invention measurements. See for example Thomas E. Bearden's eulogy in http://peswiki.com/index.php/Site:LRP:Tom_Bearden_Remembers_Walter_Rosenthal_%26_Floyd_Sweet)

More than twenty years ago, Rosenthal became involved with an inventor's invention of a small electrical power converter. Something about converting a flashlight battery's DC to 4 watts of power with a high conversion gain. He realizes now that it would be a very valuable invention because it could be used in cell phones, laptop computers, portable radios, etc.

Then the inventor got a call from a man representing Atlantic Richfield (now ARCO). They offered the inventor \$40,000 to take it off the market. Otherwise, they would subject him to troubles, etc. He refused. They eventually offered \$400,000.

One day he came home to find a group of men going through his apartment. He asked them to leave, and has had no further confrontations. He has not done any further development work on this device. Perhaps consequently, as of a few months ago, he was still alive and well. That energy device is still not on the market.

Later on, Rosenthal figured out that the Atlantic Richfield people could only have known details about the invention by tapping either his or the inventor's telephone.

Joseph C. Yater: Heat-to-Electricity Converter

In September 18, 1975 Joseph C. Yater invented a heat-to-electricity converter that he says will cost the consumer approximately \$200 and would be up to 90% efficient. The device operates by capturing "fluctuation voltage" (the static noise heard on radios and amplifiers). The rooftop device would be heated by the sun and use millions of microcircuits to tap the freed electrons from heated molecules. Yater took his device to the U.S. Government, which declared that his device had "real potential". After promising him a working model within 6 months, the U.S. Government came back to him with the reply that the device would be impractical. Subsequent scientific analysis also revealed flaws in Yater's reasoning.

Adam Trombly: Trombly-Kahn Closed-Path Homopolar Generator

During the early 1980's Adam Trombly and Joseph Kahn, Ph.D., co-invented the Trombly-Kahn closed-path homopolar generator which has an output power exceeding its power input by a factor of 4.92. The patent application and drawings represent the result of the expenditure of \$290,000 in two phases. Their US patent application was rejected twice on the grounds of impossibility that the machine could work. Then the United States Patent Office notified the Department of Defense. Instead of congratulations, Trombly and Kahn received a secrecy order. The two authors were warned not to publish any information on the basis of violation of secret homopolar generator work being done concurrently in the U.S. Government's Department of Defense.

Adam Trombly, the senior designer of the machine, received two written gag orders from the Department of Defense – forbidding him to reveal details of the machine – upon threat of 10 years imprisonment for violating security relating to homopolar generator design. The DOD-imposed secrecy has prevented any recompense whatsoever from accruing to the men who performed this work.

According to information obtained under the Freedom of Information act by the Federation of American Scientists, the Pentagon placed 774 patent applications under secrecy orders in 1991 – up from 290 in 1979 – and 506 of these orders were imposed on inventions by private companies. The U.S. Government has standing gag orders on several thousand inventions.

In 1989 Adam Trombly proposed the retrofitting of the Four Corners coal-fired power plant with an advanced Trombly-Kahn closed path homopolar motor-generator. Trombly and Farnsworth estimated that the cost of such an advanced electrical generator to be approximately the cost of installing smoke scrubbers on one coal-fired generating unit. (Sources: <http://www.rexresearch.com/trombly/trombly.htm> and <http://www.broandrew.com/suppression.html>.)

Adam Trombly: Trombly-Farnsworth Solid-State Oscillating EM System

Adam Trombly also co-invented with David Farnsworth the Trombly-Farnsworth solid-state oscillating electromagnetic (EM) system. In June of 1989 Adam Trombly and David Farnsworth of Zero Point Technologies, Inc., demonstrated a solid-state resonant device which physically produced over fifty times greater electrical output than input at the Church of the Holy Covenant just prior to a major address by Trombly at Dag Hammarskjöld Auditorium in the United Nations. The demonstration had originally been scheduled to coincide with Trombly's address.

But at the last minute Trombly and Farnsworth were informed by the Director of the United Nations Environment Programme, Noel Brown, that United Nations Security personnel refused to allow the demonstration in the Auditorium for security reasons. (The Church of the Holy Covenant was no longer used as a church but was used by the United Nations as an alternate venue for the demonstration of "sensitive" technologies such as that belonging to Trombly and Farnsworth.)

The demonstration was attended by fifty people including five major Wall Street executives, several engineers, and a Senior Engineer from Boeing Corporation Dr. Charles (Chuck) Clark. Clark had been allowed to spend several hours alone with the technology prior to the New York demonstration. Clark had checked for every conceivable trick that might be used to deceive naïve or unwitting observers.

The demonstration went perfectly. Many present stated that they felt they had attended a historical event; one that would help the human species emerge from the economically stratified and earth destroying dark ages of fossil fuel technology and into a time of universal, pollution-free electrical power. Some participants/observers were moved to tears by the ramifications of what they had witnessed.

After the demonstration the entire entourage proceeded to Dag Hammarskjöld Auditorium where Trombly addressed the standing room only crowd. He asked all of the witnesses to stand, and they did.

He then asked Dr. Clark to comment on what he had seen. Chuck said, "I am not here representing Boeing. I am here because I was hired to find out if this technology really works. I can't tell you how this thing works. David and Adam can explain that better than me. What I can tell you is that it does work exactly as Adam has just said. I have checked for every trick in the book, and all I can say is that this works."

There was a stunned air in the room. When Trombly finished there was a long standing ovation which was followed by a very long walk from the front of the Auditorium to the entry foyer. One senior diplomat called it "One of the longest standing ovations in the history of the UN."

There were just so many people from all over the world expressing their excitement that it took nearly forty-five minutes for Adam to get through. By the time he reached the foyer he saw the five Wall Street executives were huddled up with a man whom Adam had introduced the day before as one of his best friends. They looked anything but happy. As Adam approached, one of them took him aside and said, "Your friend just told us that you faked the demonstration. Is that true?"

"Are you kidding? My entire life has led up to this moment. The future of this planet will depend on the development and deployment of these technologies if we are to have any hope of surviving the hell we are currently creating for ourselves." Adam was stunned.

"I do not know what his motivation is for saying that. He is not a scientist nor is he an engineer. It just doesn't make any sense."

"Well, you said he was one of your best friends. So you have to understand that our commitment of \$500,000,000 is withdrawn until we can sort this out."

In an instant one man had obstructed history for us all. He misrepresented the truth even after the real professionals had agreed that the technology worked, and that there were no tricks. Adam later realized that this individual had cleverly infiltrated his life and won his confidence. He had torpedoed the future.

Adam did hours of interviews that afternoon and into the evening. Dr. John Lilly also asked to be interviewed. He said, "This is the most wonderful and exciting thing I have ever seen! I am coming out of retirement to help Adam promote this thing. Maybe we do have a future that's worth living in after all."

The following Monday Trombly and Farnsworth presented a similar demonstration to some Congressional representatives in the US Senate Banking and Finance Committee Hearing Room. After the Congressional demonstration, Trombly commented: "Here is a technology that points to a better future; a future free of the taint that the politics of scarcity casts upon us all."

After these demonstrations Trombly indicated that he had so far survived 47 assassination attempts over this technology which apparently threatens existing energy industry monopolies.

While David Farnsworth was in their \$20 million Oregon shop/lab, early one March morning in 1994, badge-wearing US Marshals broke in with sledgehammers and chainsaws. Farnsworth watched with his wife and a friend from a motor home while they ransacked his lab and took the energy machines away.

They recklessly removed expensive electrical devices including expensive spectrum analyzers, earthquake forecasting devices and advanced generating equipment away from walls and shelves. They carelessly stacked them in waiting trucks and vans to be transported to a federal warehouse in north Portland.

The supposedly law-abiding U.S. Government employees also took home thousands of dollars of Farnsworth's expensive ham radio equipment.

The US Marshals then filed charges against David Farnsworth and took him to court. Eventually, those charges were dropped.

Adam Trombly has had a total of 54 attempts on his life. One of the latest occurred early in 2006. Also, a suspicious incident occurred July 4, 2006 when Trombly was visited at his Aspen, Colorado home by a man of Middle East origin from Las Vegas who knocked on his door and earnestly tried to give him ten free cases of meat. Having been previously forewarned, Trombly refused, even after an additional offer of a free freezer, fearing the meat had been poisoned. This incident indicates that an energy invention suppression hit squad might be based in Las Vegas.

(References: June-December 2006 emails by Adam Trombly and Bruce Meland to Gary Vesperman. "In Search of Quantum Motors and Generators" by Bruce Meland, *Electrifying Times*, Spring-Summer 2006, Vol. 10, No. 1, www.electrifyingtimes.com. The book "*The Coming Energy Revolution*" by Jeane Manning. Tom Bearden's web site www.cheniere.org/correspondence/080301.htm.)

Gary Vesperman: My Car was Fire Bombed July 3, 2006

John Martens and I share the rent on a house in a nice, relatively crime-free neighborhood in Henderson, Nevada. The evening of July 3, John rode home on his bicycle at 9:45 p.m. The streets were quiet with no one walking in our neighborhood. He left on his bicycle 15 minutes later in a different direction. He still sees no people around. He does recall having a spooky feeling that someone was watching him leave and looked back a couple of times as he was riding away.

At 10:15 p.m. I went to bed and shut off my bedroom light which can be seen from the street. A few minutes later John's dog Coyote started barking. I let her bark for a couple of minutes hoping she will stop. I got up, looked out the front door, and could see what appeared to be fireworks burning in the street behind the car. I walked to the car, looked in the rear window, and saw the bottom of the back of the driver's seat burning!

I ran back into the house, called 9-1-1 and reported my car on fire. The firemen came later than I thought they would and with an iron bar proceeded to break all four door windows, even the two small windows in the two rear doors. I had jangled the car keys in front of them when they had arrived. They then found that the driver's side door was unlocked and sprayed water on the burning driver's seat to put out the fire.

They told me to wait for their arson investigator. He found on the driver's seat the carcass of an incendiary fire bomb three inches long and an inch wide. He said it burns at 2000 degrees.

The next day, being July 4, I asked two fireworks sales stands about it. It is illegal in Clark County where Las Vegas is located. It can be bought at Indian reservations fifty miles north. It appears whoever threw the firebomb in my car knew what he or she was doing.

I asked my mailman who has been delivering mail in my up-scale neighborhood for over ten years. He said he has NEVER seen a car torched in our neighborhood during all those years. My car is only one of numerous vehicles parked in our neighborhood. Yet my car, which is registered in my name, was the one targeted.

The car is a 1991 Chevrolet Corsica which had been painted, its interior in good shape, and has a fuel-efficient strong power train with new tires and many new parts such as new brakes, muffler, etc. It would have been a nice high-mileage reliable car for several years. In addition to the firemen breaking all the door windows, the roof lining burned and there are other burns and melted plastic parts. The interior is a mess. John is a certified auto mechanic and had spent many hours restoring it. John and I eventually had the car towed away to a junk yard as a heartbreaking loss.

Adam Trombly has had a total of 54 attempts on his life. One of the latest occurred early in 2006. Also, a suspicious incident occurred July 4, the day after my Corsica was firebombed, when Trombly was visited at his Aspen, Colorado (?) home by a man of Middle Eastern origin who knocked on his door and earnestly tried to give him ten free cases of meat. Having been previously forewarned, Trombly refused fearing the meat had been poisoned. The man became upset and even tried to add a free freezer. He then gave up and told Trombly he had to get back to Las Vegas. A few minutes later, Trombly took a walk and found the man sitting on a sidewalk curb talking on his cell phone.

Trombly's report hints that an energy invention suppression hit squad might be based in Las Vegas.

One of my energy inventor friends, who himself has been a target of energy invention suppression, happened to visit me a few weeks later. He has emailed "What I witnessed at Gary's house was no teenage prank. It was obviously intended to totally destroy a car, not just scratch the paint or leave a scar. With several other cars parked at the same house, Gary's was obviously targeted, not just the easiest to reach."

Three weeks before my car's firebombing, I had published on the Internet the third version of this compilation of energy invention suppression cases which can be read in www.byronwine.com (do Find for Vesperman). Other sites can be found by entering in the dogpile.com search engine Vesperman suppression.

So it may be that the energy invention suppression terrorists, possibly based here in Las Vegas, had retaliated by firebombing my car. I don't feel intimidated at all. In fact I am mad and more determined than ever to help end energy invention suppression.

Adam Trombly (Interview): The Truth about Zero Point Technology

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The Truth About ZP Technology: A Wake-Up Call to the American People – An interview with Adam Trombly by Celeste Adams

Adam Trombly is one of the top scientists in the world in the development and creation of zero point energy technology. Devices that he built are working today in other parts of the world. And yet, instead of using zero point energy, Adam Trombly's own house in Maui is being fitted with a bank of expensive solar panels.

Why can't Trombly use his own expertise to fuel his own home? Trombly has spent most of his professional life under one gag order or another. But he decided, he told us, "that if I was going to give an interview for this particular publication, I wasn't going to pull any punches."

If much of this seems overly negative, keep reading. Trombly wants to wake us up, and to shine a light upon things that have been kept dark. But his grounding is deeply spiritual. It's just that the Divine forces that seek to assist us cannot do so unless we call upon them. "Now, in this moment," he tells us, "we must come out and ask for help. When we can ask for help, we get it."

Adam Trombly's revelations will shock you to the depths. But it is his hope, and ours, that it will help you to awaken, or to assist you in your task of awakening others.

Trombly's ultimate vision is the "redreaming of the American Dream."

Adams: How did you become interested in free energy?

Trombly: I was raised as a scientist and I have spoken the language of science all of my life. My mother was a blood specialist, my father was a biochemist, and my sister was at one time a biophysicist.

When my father had just gotten his Ph.D. in biochemistry from Purdue University — I was a young child — he was enlisted as a biochemist, by a fellow Purdue alumnus named Frank Olsen, into a U.S. Air Force/CIA joint project. He was stationed at the biological warfare laboratory in Fort Detrick, Maryland. This was in 1952 during the Korean Conflict. He had been a highly decorated U.S. Army Air Corp officer in World War II, but the government felt that he had a skill of strategic importance to the national security.

At Fort Detrick, he and Olsen, along with a couple of other scientists, were working on a very compartmentalized project. Since he died when I was in the eighth year of this body, I knew very, very little about what this project involved. On the seventh anniversary of his death (4/3/1967) I was in my mother's attic, putting out mousetraps, when I discovered a couple of boxes that contained journals my father had kept during his time at Detrick. You weren't supposed to keep journals, but he did.

One of the things he wrote about in his journals was his exposure to alien technology that totally defied what were considered, at that time and even still to this day, the laws of physics.

He wrote a letter to Dr. Quackenbush, who was on his dissertation board at Purdue, saying that what he had seen challenged even his "most vivid imagination." This was right after he got there.

After he had been there about a year, the notes he wrote got really interesting. He specifically described various technologies which he stated plainly were of "alien origin." He described not only flying disk-shaped craft and their related energy and propulsion systems, but Extraterrestrial Biological Entities. His work was actually concerned with them.

On November 19, 1953, my father (along with Dr. Frank Olson and a couple of other colleagues) was taken by Dr. Sidney Gottlieb to a summer camp near Baltimore. While there, he and his colleagues were involuntarily given large doses of LSD in their cocktails; doses on the order of 10,000 to 15,000 micrograms. Olsen knew about the experiment, and out of concern for my father told him, "Harvey you have been given a psychoactive drug and you are beginning to feel its effects. Don't worry."

Olsen had also taken a large dose of acid, and later freaked out because he said he had, "blown the experiment." It was supposed to be a double-blind experiment for all of the participants other than Olsen. He was supposed to keep silent.

Frank Olsen continued to feel unsettled, and was rushed by CIA personnel to New York for psychiatric examination. Something terrible happened instead. Frank was bludgeoned in the head and then thrown from his hotel room window. He was murdered. This, at least, was the conclusion of forensic pathologists hired by Frank's son Eric in 1994.

My father filed an internal protest demanding an investigation of his friend's and colleague's death, and that was what ultimately triggered the events that killed him.

In January of 1954, under the illusion that he was being immunized from a new retroviral biological warfare agent, he was injected instead with a live virus that he had discovered during his research. He became extremely ill. In his notes, he indicated that he immediately knew. "They killed Frank," he said, "and now they have killed me. The difference is that I will die slowly, very slowly."

He died in 1960, from a form of lymphoma as eleven government labs did morphological workups of his cells.

When I discovered that his death had not been an accident of nature, I was heartbroken. I despaired of life. I sat with a knife a quarter inch into my chest, with blood already trickling down, begging whoever was present at Infinity to reveal the truth of existence.

And in the next moment, I suddenly had no doubt of God or, if you prefer, the Buddha Nature, and I saw things with great clarity.

Adams: Do you believe that we're in denial about the involvement of aliens in the affairs of this planet?

Trombly: The American public has been lied to for so long, they wouldn't be able to recognize the truth if Jesus told them personally.

It's very difficult for the American public to know what is going on. In many ways, we are a nation in denial, and all too often a nation of alcoholics and drug addicts. We are in incredible mass denial.

People see what are referred to as flying saucers and UFOs. Sometimes they are not saucers but triangles. Sometimes they're small, and sometimes they're huge and look like buildings.

It doesn't matter how many people in remote places or in cities see them, or photograph or videotape them. The perceptions are simply shut out.

There are amazing mind-control projects going on. People literally cannot maintain their attention span. More than once I have stood and watched crafts 100 or 200 feet over my head and had people say things like, "Well that's not an airplane," or "Oh, my God, are we actually seeing this?" "Is that real?"

But by the next day, the whole chemistry of denial has set in and those same people say, "Wow, that was a strange airplane, it was going really slow, or really fast, and how did it make that right turn?"

This is what got me started in free energy technology — though I hate the term free energy, because it's anything but free. Many have paid dearly for its advent. I don't even know what term I like at this point. I use the term Zero Point Fluctuation Technology — ZP Technology.

I used to have a company called Zero Point Technology. As soon as you put something like that on your shingle, you discover just how unacceptable this concept is to those whose growth stopped so long ago.

People are being bombarded with subliminal messages that tell them that aliens don't exist. Even The "X-Files," which is a joke (thank God they're canceling it), was originally intended, by Chris Carter, to be something more than just random amusement. It was intended to be groundbreaking. But there's government interference. And this is a huge subject. People don't understand that the "other U.S. government" has had contact for decades with cultures that aren't from this planet.

We're like the aboriginal people of New Zealand, or Papua, New Guinea, or any other remote tribe. When they see an airplane, they think that it is a God — or they at least, they used to. Of course, now they think that it's just people who are more primitive than they are, but who have technology.

We are the same way with "alien" cultures. We are the same way with really clean and advanced electrical technologies that could begin to help us understand just how wonderful and abundant Being — simply being — is.

When I got involved in ZP in 1979, I was warned by Buckminster Fuller that if we were successful there'd be hell to pay. If we were actually successful, then it could develop into a real nightmare, because the humans we're dealing with are a species that has been kept in the dark. We've been treated like mushrooms (which are kept in the dark and fed a lot of feces -- there's no nice way of putting this).

The extremes to which these people are willing to go to make your life miserable are phenomenal. They go out of their way to torment those who challenge their utter mediocrity.

Then there are certain people who hang around in the so-called free energy field, who speak at conferences and who have never discovered, engineered, or invented anything in their entire lives that is worthy of note. What they have done is mediocre at best. I won't name them, but they just haven't produced. These are the people who say, "No one has ever bothered me."

These are the same people who — behind my back and behind the backs of those who have actually produced functional technologies — say, "Well I've never seen anything that he's produced."

Adams: Can you tell us more about this alien agenda?

Trombly: I know that there's an alien agenda because my father wrote this in his journals. He said he had discovered that the U.S. government had become involved in its implementation. He went further to say that this alien agenda, in his opinion, was contrary to the good of the human species and the planet.

He believed that a sector of the military/industrial complex was involved in a program, basically, to transform our atmosphere, which is benign to our species and other Earth species, into one that is greatly reduced in terms of its oxygen content.

So this is a force which doesn't have good intentions for us. It is a force that would gladly exterminate us. And yet human beings act as agents for this force. The "human" species is exterminating itself, by its own hands.

My father spoke of alien agendas in his most secret thoughts. This was not something he spoke of in public. He would never have given this interview, I'll tell you that much.

Adams: What species is this alien force?

Trombly: I can't say, but I can say that the species that are trying to harm us are a tiny minority of a vast host of alien species. My father knew of a couple. It wasn't just one, even back then. This sounds very far fetched — I know it sounds nuts. But I decided if I was going to give an interview for this particular publication, I wasn't going to pull any punches.

Adams: Many of the people who read this will share your belief system.

Trombly: Well, this is not about a belief system. I don't like belief systems! This is about reality! We are the ones who are collectively destroying the womb of the Earth in which our species gestates, in which we evolve.

There are real terrorists in Washington, and even, I dare say, in the White House. (See <http://www.nogw.com/shadow.html>.) And we are very rapidly approaching the time when that statement will be considered criminal. The incident we call 9-11 was a mockery. Now, every time someone dials 911 they'll think of the evil demon Osama bin Laden who in fact is someone we helped to create.

Alkhaida was largely financed by the U.S. government. We gave the Taliban 128 million dollars last year to suppress the growth of opium in Afghanistan. Where do you think that money came from? Where do you think it went?

Everyone thinks the 9-11 was caused by Osama bin Laden and his cronies. There's no doubt that some of his money comes from Saudi Arabia, but the fact is that the U.S. government is the primary source of funding for the Taliban. Why? Because Dick Cheney and his cohorts want to build an oil pipeline through Afghanistan.

Adams: What has happened to the free-energy technologies that you've produced?

Trombly: Every single technology that I have either invented or co-produced is no longer in my possession. There's one in Arizona that has supposedly become a national security issue.

A former colleague of mine once went off on his own with a design that he and I had come up with. He built a device that was very successful — and is now in a can, and he is a shell of his former self.

Forget about whatever technologies I have had a hand in reducing to practice. We have heard from very credible sources that these are nothing compared to the technologies already being produced by certain prime contractors right here in the United States.

Why is it a national security issue? Why is a generator that generates several times more output than input a security issue? Why is it that the American people cannot enjoy what their tax dollars are paying for? Why is it that we have a government that is willing to deny the American people access to the very technologies they themselves are secretly producing?

It's not a joke. Our government has produced technologies, with our tax dollars, that could immediately begin to reverse the damage done by the irresponsible use of fossil fuels, and they are not allowed to be used.

They continue to pollute this atmosphere, and they continue to reduce the amount of metabolically available oxygen. Who could possibly benefit from that? What species do you know of that is actually better off today than, say, fifty years ago?

What is it that we do when we burn these fuels? We make fire. What is fire? Fire is a rapid oxidation process that releases heat. The real destroyers of the equatorial rain forest are forest fires, because of the incredibly poor husbandry. There's nothing good you can say about what's being done to this planet!

There are far too many people in the U.S. government and other national governments who are acting in a way that is completely moronic and self-destructive. It is not a human agenda! This is what I'm trying to get you to see. There is this whole other thing happening.

We are exploited by a corporate structure — by the "military-industrial complex" Dwight Eisenhower warned us against in his farewell address to the nation. Eisenhower got the term "military-industrial complex" from Mussolini, who was describing Fascism. These are words you don't want to use in our society.

At Project Earth we get mail from all over the world, and the one word that keeps coming up since our last so-called presidential election — about that debacle, that tragedy — is the word "coup." From the perspective of the vast majority of the human species, it was a coup. They say this in India, Japan, South Korea, France, Holland, Spain — everywhere. In spite of the fact that we never posted an article on our website that said or even suggested that we had a coup, people write to us and say, "How come the American people don't realize that they just had a coup?"

Then, following on that coup, we have 9-11. Everybody is terrified, but people don't want to talk the way I'm talking now. They think it's self-destructive.

I tell you truly, it is our collective silence that is truly destructive.

The United States of America is a sacred idea. It is a sacred thought-form. What was America to the people who risked and frequently lost their lives to create it? It was the New Jerusalem. The spiritual foundation of the United States of America is an absolute necessity of our spiritual dimension. It was founded on the basis of the absolute need of the human spirit for freedom.

But freedom brings with it great responsibility and demands great intelligence.

We do not want to live in hell, but we are creating hell for ourselves. We are tormenting each other and ourselves. We're doing these things as if we have no choice. We are truly brainwashed.

The real ultimate cult that's going on in America is this one of jingoistic, flag-waving, unquestioning patriotism. We can get ourselves all hyped up on Zoloft, and that still doesn't change the fact that we as a nation have lost an incredible amount of prestige and trust because of what happened in 2000.

No matter how much money we put into the military budget, we will not be able to restore that trust in our own people or in the rest of the world until, through grace or the incarnation of the Divine Process, our democracy is resurrected from its present contrived state. It is a travesty.

When Dick Cheney refuses to turn over documents to investigators, he gives comfort to our enemies. Truly dangerous and deranged people in truly difficult countries like Pakistan cite the actions of our corrupt public officials as justification for their actions.

If we say to the world that we represent Freedom and Democracy, then by God we have an obligation to be Free and Democratic.

In the meantime, the world laughs, because perfectly capable intelligence officers in the United States are oppressed for the sake of short-term political agendas.

The Central Intelligence Agency attempted to warn the White House before September 11. The entire affair was handled with what can only be called incompetence. While three-letter agencies spent our tax dollars listening to my calls, true terrorists were going to flight. And in spite of over an 18-minute warning crash, a second full-size passenger jet went into the World Trade Center.

Even so, we are all supposed to fall into line and cheer.

Once, in 1986, I was introduced to a man in Toronto, Canada, who turned out to be a major Soviet technology spy. When he offered me a lot of money and a lot of benefits if I would turn over mechanical drawings for an electrical generating technology I had co-invented, I told that agent to go screw himself. I told him I was under a gag order, and that I would not violate that order.

He responded by saying, "What loyalty do you owe to your country? They have done nothing to help you or your work. If you cooperate with us we will appreciate you and take good care of you and your family. Three hundred million people will benefit from your technology. Who cares if a shaft is made in Leningrad or if assembly occurs near Moscow?"

Once again, I told him to go screw himself, to go back to the totalitarian hell that he came from — and then I got the hell out of his office.

In September of 1986, I turned this man in to the FBI — and as a consequence, I ended up under investigation myself!

In February of 1987, the counter-intelligence unit of the FBI contacted me. During my second so-called "interview," one of the special agents who interviewed me was Robert Hanson, now known as a famous spy for the former Soviet Union.

Hanson interviewed me about whether or not I was a spy. But he knew I wasn't a spy, because he was!

It's not just the U.S. government that's suppressing all this stuff, it's the whole theater of this species. The "human" species has rarely demonstrated qualities that say that it should be maintained or can be sustained.

This species has never acted in a way that is consistently to its own benefit. For thousands of years, this species has acted in a manner that can only be described as both sadistic and masochistic, and on a planetary scale. It has not acted intelligently.

At the same time, there is no decision to change, because the vast majority of the human species don't even realize that we have a choice to do that. They don't realize that we have the choice live intelligently. They don't even know or what that would entail.

My protests to the "powers above" are consistently related to this central fact: "I know there's a choice, you know there's a choice, but the general population on this planet has no clue that there's a choice. We can choose to live in a completely abundant and pollution-free environment. We can make that choice and have more abundance, and not less abundance. We can stop spending money for fuel. The capital expenditure for fuel could be completely eliminated. That would free up trillions of dollars annually, globally, from the world budget, from the planetary budget."

If you want to know why I got involved in this technology, it's because we have a way to generate almost boundless levels of electrical power without any pollution or fuel, without even the need for solar panels or wind power.

It's ridiculous that I am installing solar panels in my home, when I have spent the last 23 years of my life in the field of ZP Fluctuation Technology research and development and have one more than one occasion successfully demonstrated it along with colleagues who have also learned the same hard lessons that I have.

Adams: Can we still restore this planet?

Trombly: We can if we act with great clarity and great speed. No obstacle could stand in our path.

We could even reclaim the Sahara Desert. It didn't used to be a desert. It was destroyed by people who cut down the forest and overgrazed the grasslands that were once there. Now the same thing is happening in Brazil, Indonesia, China and South East Asia.

These forests and grasslands are like your skin. What does the skin do? It keeps us from becoming dehydrated. When a person gets third-degree burns, one of the leading causes of death is dehydration. The same thing is true of the forests and grasslands.

It's about maintaining that tissue and understanding that it is very vulnerable. These membranes are being taken away.

We can also reclaim the desert that is forming in the northeastern corner of Brazil, where there was rainforest a hundred years ago. The Brazilian desert exists because the Brazilian people won't stop cutting down their own trees. I say this very bluntly. If the Brazilian people want to demonstrate that they have some intelligence, then they'll stop cutting down the rainforest, which is the equatorial life support of our planet.

If the United Nations and if the American government want to demonstrate their intelligence, then they will suggest that we should give credits to these countries for their oxygen production.

We can reclaim the deserts by these new technologies, by taking the water out of the oceans and using it on the desert.

Where you run into the logjam, over and over with all these issues, is the question of energy.

How can we heal the ozone layer? It's going to take a tremendous amount of energy to do that. We have to replenish the oxygen that's not getting into the stratosphere.

One of the fundamental points that I try to make is about chlorine. It is a molecular demon once it gets into the ozone layer. One chlorine ion can interfere with the production of 100,000 molecules of ozone. So we have to eliminate as much free chlorine and bromine as possible.

But even if we entirely eliminated chlorine and bromine production, that would still not be enough to heal the stratospheric ozone layer.

Another significant cause of ozone depletion, one that is often overlooked, is the reduction in the amount of oxygen that should be transported into the stratosphere over the equatorial rainforests. Project Earth has been trying to educate people to this fact since the mid-eighties. The oxygen source has literally been cut off by deforestation. But we can heal that by reintroducing a tremendous amount of oxygen up there, and replanting the forest down here, on Earth.

It will take energy. Lots of it.

Adams: Can you describe how your life has been endangered because of your perspectives on free energy?

Trombly: If I had described my life to you since 1980, it would be a long, long story, and it would sound like a bad spy novel.

I've had a number of attempts on my life through really serious poisonings. My wife has had to revive me and give me CPR.

So we've had a whole nightmare component to our life. But we don't live in a nightmare at all. It's quite the opposite.

However, I must say that it has been almost unimaginable at times.

Once, in 1988, I was visited by a couple of scientists at my home in Colorado. One of them was Bob Dratch, a man who has done a lot of work in creating microwave detection equipment, which is widely used by the Department of Defense.

Basically, I was standing in my office, which was a large room, 27 feet long, and Bob Dratch was shaking change in his pocket, to demonstrate that his very sensitive microwave detector could pick up the signal this jingling generated. The signal would appear on the meter and the printout.

I pointed the horn of the device at Dratch to measure the effect. And then, as I pointed the horn away, I kept my finger on the trigger and happened to point it out the window of my office. To our surprise, the alarm went off on the machine! The red light went on, and the meter peaked.

My office was being microwaved!

I walked into my back yard and found the place where the signals were being broadcast. It was right behind my house, in a little forest, right next to an engineering company that is well known for making satellite antennas.

I clipped the cable to the antenna that was broadcasting microwaves at my house, and I called the FCC in Denver. I said told them that this was illegal, and I wanted it stopped now. I said, "Stop microwaving me." I already had cancer.

Within three weeks, this engineering company was totally gone. I assume they themselves had something to do with the broadcast, or they wouldn't have left so suddenly.

So dozens of people had to relocate to Kansas, or where ever.

But why were they trying to kill this body? We are perplexed at times by the strange modus operandi of this group.

The world is not going around very well right now, because people aren't loving. When people love, they become geniuses. Intelligence isn't about thinking, it's about feeling. I don't care how many times the force of darkness, which resists love, has attacked you and made you feel separate.

I don't care how difficult anyone's life has been. I guarantee you, I can match it. But suffering is finite, it's limited, it's not eternal. You can transcend suffering through love.

The resurrection we are called to is our resurrection. Once Jesus stood in front of Lazarus' tomb, and commanded, "Lazarus, come out." And we are told that Lazarus came out.

That is similar to what is happening right now. Surrounding this planet, there is a gathering which is inviting the human species into a new dimension. They are saying, "Lazarus come out, come out of your subjective tomb and out of your corruption. Come out of your doubt of God and out of your doubt of Love. In the midst of Infinity and Eternity, We command you."

Now, in this moment, we must come out and ask for help. When we can ask for help, we get it.

People don't understand that you become realized by incarnating love. We live only as expressions of love, in eternity. The only thing that is eternal is Love. Love as the presence of consciousness is eternal and infinite.

Time and space are subsets of eternity and infinity. Space and time are subjective states, and they have nothing to do with limiting the ultimate reality of consciousness, not even a little bit. They have to do with the gnarled subjective states of the contracted world.

Scientists talk about the accelerating expansion of the universe, but it's not that, it's the unremitting *transformation* of the universe that's happening, the inescapable transformation of the universe.

You don't have a choice about it this time. It isn't the same as it was two thousand years ago. We are in the midst of the time of the resurrection. It involves you and me and everyone on this planet, I don't care who they are.

There will be miracles everywhere. The most powerful thing is love. The whole astrophysical community is now acknowledging this power, but they call it the "dark energy." They give it this Darth Vader quality, because they don't know how to relate to the Light. It is the contraction of form and the denial of the Infinite Divine that causes the appearance of darkness.

Adams: How long has there been a conspiracy to prevent the development of free energy?

Well, if you are referring to the technological side of things, I guess you could say it started with Nikola Tesla. (Although the crucifixion was really an attempt to stop Free energy as well.)

Nikola Tesla was given the vision of infinite electrical power, without fuel, in the 1880s. He demonstrated it in 1886 and 1889, and then throughout the 1890s. He tried to give this gift, but the fossil fuel boys decided he couldn't give it. The fossil fuel boys decided that maybe they could make use of him, so they didn't kill him right away. They killed Tesla in 1943.

One of the detectives approached me in 1981, at a conference. This man told me that Tesla had been murdered. So I guess you could say that it all began right there. When I was a kid in school, nobody knew about Tesla. Tesla was the father of alternating current electricity. Tesla said he was inspired by aliens, beings from other dimensions. He was anathematized because he refused to kowtow; he refused to attend the same temple that the others worshipped in.

Adams: How can we make free energy available to the planet?

Trombly: There is no such thing as free energy without enlightenment and liberation. The technologies point to free energy. We are the technology. We are the free energy.

Great yogis like Sri Babaji demonstrate this. Yogananda talked about him. He was the physical demonstration of free energy. He was the physical demonstration of what the Tibetans called the Rainbow Body. He was transparent and transfigured in God realization, the realization of the Buddha Nature.

There are alien cultures and cultures in other universes who happen to be attentive to the events on this planet because this is one of the last archetypal moments. This will not continue anymore. This entire kind of universe is obsolete and will not occur again, because it would be masochism and sadism to allow it to be perpetuated.

There's a transformation that is occurring. It is about the liberation of all the energy that has been bound up in all of these worlds that are subject to corruption. That is the real physics. This is what is really important.

In the meantime, by understanding that this is true, we can tap into a field that we call Zero Point Vacuum Fluctuation or the quantum ether, and we can generate electrical power. Electrical power exists in complete abundance, without any capital cost for fuel.

Solar technology is so very expensive. We have 108 solar panels in our two facilities on Maui and it takes up a great deal of space. I would love to have ZP Technology here, but the fact of the matter is, if I had that working right now, this place would become a target.

The other side of this story is always the same thing. Just when Light appears on this planet, the subjective forces of darkness manifest with great tenacity. This government was overthrown and nobody knows anything about it. People are silent about it.

On the cover of *Newsweek*, on September 11, was an article about the secret vote that made Bush president. The article was about a conspiracy in the Supreme Court. *Newsweek* at that time was willing to challenge the Supreme Court. The Executive Branch of the United States government was about to fall, because it was going to be exposed.

But then the planes hit the World Trade Center.

If Al Gore had been elected, I know the man well enough to know that we would have been in a different economy after four years. We would've begun to implement these technologies.

The United States government has, right now, the technology to eliminate the energy crisis. This consoling gesture that George Bush made the other day, about developing hydrogen fuel-cell technology, is just a carrot that he's dangling before the American people.

Now there are military people who have come forward and are talking about the presence of aliens and alien technology on this planet. They are even talking about the fact that we are making our own flying saucers. This Disclosure Project is extremely important for people to know about (see Secrets from the Stars elsewhere in this issue).

We could be having the greatest economic boom in the history of history. We could actually do that. The technology exists. As early as the 1970s, Henry Kissinger, George Bush, Richard Nixon — all kinds of these guys — knew about this physics. But the downside is that we are on the brink of oblivion.

Parents are paying all this money to educate their children into the lie of physics instead of the truth of physics. Meanwhile, they are taking Prozac. We have legalized the anesthetization of our species. Depression is appropriate.

Adams: What is the purpose of your organization, Project Earth.

Trombly: The original foundation of Project Earth was to reveal to the human species the actual condition of our planet. We're not being told the truth about it. For the most part, the scientific community doesn't know the truth and has been so disempowered by their so-called education that they've lost vision.

Vision is the only thing that will save us. You have to be able to see where you're going.

The agreement that I made with the Divine is one that Bucky and I talked about. We would never just illuminate the problem, we would always offer a solution. If we talked about an energy crisis, we would talk about only it in the context of the fact that there is no energy crisis.

Electrical power is already abundantly available, pollution free. We like electricity. We can power our cars and flying saucers with infinite electrical power. We could have so much fun that living on earth wouldn't be a drag, but would be really great.

Your eyes would be so open that you would walk out the door and you wouldn't see the smog in Los Angeles, but you'd see the clear, sacred air.

Project Earth is not just about communicating the problems. It's about the transformation of humanity.

(End of interview transcript)

Adam Trombly, Director of Project Earth, is an internationally acknowledged expert in the fields of physics, atmospheric dynamics, geophysics, rotating and resonating electromagnetic systems, and environmental global modeling.

Taking the advice of his friend and mentor R. Buckminster Fuller, Adam has maintained a "synergistic, global view" within a multi-disciplinary scientific background. From this perspective, Adam offers unique insights into the changes humankind has effected on our environment, and the adjustments our future requires of us.

For further information about Project Earth, please visit ProjectEarth.com.

Trombly and Celeste Adams spoke on January 21, 2002.

Adam Trombly (Speech): Climate Change Factors, Ozone Layer Crisis, and Zero Point Energy Technologies

(Transcript, slightly edited from <http://www.repp.org/discussion/green-power/200205/msg00011.html>, of Adam Trombly's speech to the 1988 International Tesla Society Symposium, Colorado Springs, Colorado. Trombly provides additional details regarding Tesla's murder by painful poisoning, likely by the U.S. Government. It is reprinted in its entirety because I believe Trombly's message concerning energy in 2007 is even more urgent and troubling. Gary Vesperman)

As this is the last speech of the conference here, I'm going to give an overview of the development of zero point theory and I'm going to try and take into account all of you have been very patient...

The basic principle which we are obviously here to address, was originally elaborated by Nikola Tesla. The sense that Nikola Tesla conveyed of existence was, if not unique, then certainly it was profoundly inspired, not so much by initial analysis but by initial vision.

We have become a rather left brain biased society, an analytically biased society. As a result of this analytical bias we tend to refute or deny the validity of intuitive jumps or intuitive leaps and insight.

Tesla was an extraordinarily prolific inventor obviously, but in addition to being a prolific inventor, he explored very thoroughly, for his time, the dimension of the psyche. And I think that perhaps too often we tend to forget that he himself claimed that the source of his inspiration was not conventional.

He saw what he built, and then he described it to a draftsman, and built it. The draftsman was his interface with substance. To consider that when he was riding in his carriage or his Pierce Arrow here in Colorado Springs, not too far from where we are right now, he would often see devices in their totality, spontaneously.... is quite remarkable. (I myself have seen descriptions with drawings of some of Tesla's complicated machines. Genuinely amazing! Gary Vesperman)

When you see something in its totality, it tends to have a different meaning than if you tried to put the pieces of the universe back together to arrive at a conclusion. Tesla insisted that he rested in the conclusion in his own psyche. I think this is very important. Tesla was not an analytical apologist; he was not somebody who made gestures to the scientific community to make himself necessarily acceptable in his time. What was acceptable was that he produced. The means by which he produced were often unacceptable, especially in the last couple of decades.

Therefore, we heard a lot about Thomas Edison, and we heard a lot in our education about just about everybody else except Nikola Tesla. The reason I'm sure this Society exists is this left a vacuum, a huge vacuum that is not merely filled by the acknowledgment of Nikola Tesla, but by the acknowledgment of the function of a human being, the function of a being not being polarized to the left hemisphere, but balanced to the two hemispheres of the brain, in other words vision coupled with analysis.

In the development of our generator, which we originally called the "Acyclic Closed Magnetic Generator," vision was implicitly necessary to arrive at our conclusions. Basically we had to work from very little information. There were very few explorers in the field, and we had to begin to consider that perhaps the way we considered reality actually is fundamentally incorrect, that fundamental cornerstones such as the law of induction, for example, that particular cornerstone was not necessarily as we believed it to be.

What stimulated me, and I've said this before, since 1980, was the recognition that certain astrophysical phenomena express energies in excess of what the apparent input is. This is a very common thing in astrophysics, whether you're talking about quasi-stellar objects, or whether you're talking about the planet Jupiter.

When we first found out that the planet Jupiter was developing a looped current between itself and the moon Io, Jupiter was called, in a paper published by a Goddard scientist at NASA, a "Homopolar generator."

They tried to rationalize that the relative motion between the moon Io and Jupiter was actually responsible for the current that we could measure by virtue of its magnetic flux tube as tested by satellite probe. But when you went through some very simple calculations, you found that was not true.

So we decided that we would look into the matter of "Homopolar" generation itself – the history, who came up with it, as Bruce DePalma and others have pointed out. Even though Michael Faraday did an experiment on December 26th, 1831, in which he co-rotated a magnet with a copper disk and measured a current output. Even though he had done that experiment, his own law of induction tended to ignore that fact.

A professor with the Royal Society in London, a professor of science history, told me that the original Faraday cage was designed not to keep electromagnetic noise out, but to keep Michael in. You see he played with a substance we call mercury, and in those days there was very little appreciation for the toxicity of mercury. And so Faraday apparently suffered from a form of dementia, which we've heard very little about because it's one of the cornerstones of the building we have been living in, in science.

We found out after we found Faraday's diary, after we found the citations of the experiments that he had done, that there was a gentleman by the name of Bruce DePalma in Santa Barbara, California, who had suggested that on the basis of the co-rotation of a magnet and a conductor, which we were at that time contemplating ourselves, it might be possible to generate more energy out from the generator than input in.

I must say that my initial response to that was probably not as skeptical as some people might be when they heard such a thing, because in the fields of astronomy and astrophysics it is not uncommon, not uncommon at all to find an object that is obviously exceeding what we "know" to be its thermonuclear, or any other form, it's exceeding the output that it could possibly have by thermonuclear means, by fusion, by fission, by anything we normally consider.

And so, because we had seen that already in space there was this planet Jupiter clearly being a demonstration of what we initially considered to be an anomaly. Clearly putting out three times as much energy as it could possibly be receiving from the sun. We decided to reduce to practice a form of generator with the intention of practical commercial use, and through various good fortunes we arrived at funding.

We actually, for this field in those days, got substantial funding. And as a result of that work, we applied for a patent in 1980 which was, as many of you know, denied by the U.S. Patent Office as being implausible to the extreme. The statement was to the effect that, "This device could not even generate electricity." It wasn't that it couldn't generate electricity in excess of input, it was that the machine couldn't generate electricity at all. The patent officer himself was, as many of us, as all of us basically were unfamiliar, he being totally unfamiliar, with the fact that you could co-rotate a magnet with a copper disc, even though we had provided him with a copy of a page from Faraday's diary. He actually suggested that the diary notes might have been something created *ex post facto*.

My initial naiveté in entering this field was rapidly destroyed.

We felt that if we could produce a practical, commercial, viable unit, then the world would be very excited indeed. And what we discovered instead was we were dealing with a profound level of inertia; inertia in a frame of reference we didn't normally consider.

Economic inertia, intellectual stasis and dogma. Certainly the explorers in this field, over time, whether it's myself, or Bruce DePalma, or Tewari or going back to Moray, Tesla, Hubble. These people all discovered this inertia. It is an astonishing thing when you first encounter it. It is irrational. It says that no, indeed the Earth is the center and everything revolves around it. And the moons around Jupiter couldn't possibly be doing that what you say.

Galileo wasn't vindicated by the Catholic Church until 1984. If we took that many centuries to acknowledge zero point vacuum fluctuation-based technologies, we will all be dead. And that's the sobering realization that I have come to over the last five years.

Buckminster Fuller was a huge influence in my life. I met him when I was sixteen years old and largely because of his influence I wasn't permanently lost in space; lost in the theoretical level of things. And therefore, when I began to encounter this resistance he said something that was very important to me. He said that every new idea, every new technology, every major breakthrough, has an inevitable period of gestation. He said you must learn to be patient. He had experienced profound resistance, as you may know, to various ideas that he had in the thirties.

I think that what we are really seeing is not the resistance or inertia imposed upon this technology, but instead a resistance to a fundamental shift in perception about the Universe itself.

We have tended to describe ourselves in discrete terms, as encapsulated beings, with rather defined boundary layers, both temporally and spatially.

We're born and we die. The boundaries of our body are the boundaries of our being. Inspiration has a difficult time entering into a closed bottle. Where would it come from? Where would it appear?

How could Nikola Tesla say he got ideas from space? He was considered a very eccentric and crazy man as a result of his statements. People point out that he always had all these napkins piled up next to his plate. But by the end of his life, people had forgotten that his vision is what is powering these lights. And if we had continued with his vision, we wouldn't have a fossil fuel economy today. And J.P. Morgan and Rockefeller and a number of other individuals would not have amassed extraordinary fortunes on the basis of that fossil fuel economy.

I think this is extremely important for us to understand because when Nikola Tesla's vision was denied, a part of our own vision was denied. Just as when Galileo's vision was denied. The fact of the matter is that as we sit or stand here, a field of energy pervades us. This even relatively conventional physicists like John Archibald Wheeler stated in a 1962 article in the Review of Modern Physics. "Energy has a mass equivalence of ten to the ninety-fourth power grams per centimeter." You just need to look in the literature. That ninety-fourth power grams per cubic centimeter represents a rather coherent state. It represents something that we could very easily call a continuum.

But because of the taboo against the idea that you might perhaps be able to get water from the well of space, or what people call "perpetual motion", there has not been a sense of any kind of practical application.

Once in a seminar, well over a decade ago, I asked a question I found was extraordinarily taboo, and I said, "Why can't we tap into this field?" It had been established in the literature in Europe by Philip Sipolan (sp?) since 1951 and 1952, that not only did the fluctuation field exist, a fluctuation field of extraordinary energy equivalence. And that the vacuum field was bias able; that it was polarizable.

The polarizability of a vacuum, fluctuation background, I believe is the essential issue, and a very simple issue indeed that we need to really consider.

David Deutch in 1982 explored briefly in a book called "General Relativity," on Einstein's centenary, which was edited by Hawking, considered very briefly the fact that not only is the vacuum polarizable in terms of density, but that an ideal theoretical situation density polarization could asymmetrically approach infinite density and asymmetrically approach negative energy density. That means that within the vacuum fluctuation itself, stress can be created. That means that the vortical dynamic that Tewari speaks of is really not that difficult to imagine, because you have fluctuation density that wishes to remain isotropic, or uniformly distributed, disrupted, polarized, in a curved manifold, and that vacuum density once polarized wants to relax from that stress back into a more isotropic state.

Anybody who studies vortical physics, fluid dynamics, plasma dynamics knows that there is no greater stress than that by which we invoke a vortical momentum. And therefore it is not hard to imagine, if we simply consider the fact that we are dealing with a medium of this extraordinary density. It is not hard to imagine or even begin to feel that just by simply biasing this field in a rotating cylinder or perhaps in an oscillating circuit, by biasing this field correctly, we can precipitate vortical momentum.

Now we may only precipitate a quasi-electron. In the vacuum fluctuation of space, their production is occurring all the time. In a bias environment however, where an electrical potential exists, that quasi-electron, instead of annihilating with its anti-particle, might indeed be distracted along the potential and find its way into what we refer to very blithely as manifestation.

It doesn't necessarily take giga-electron-volts for this to occur. And that's why Tewari, DePalma, myself and others speak of the generation of power from space.

We need to very simply and seriously consider that it's already in the literature. It isn't just in the literature of the fringe; It's in the literature now even of Physical Review since 1975. Review of Modern Physics, since 1962. And in the European literature since the 1950's. It's a remarkable thing that because of the bias against so-called "perpetual motion", or so-called, "free energy", that nobody seems to want to extrapolate what is implicitly obvious.

The atom itself can then be seen as a dynamic modification of field space. Only a dynamic modification of field space, with no quality of stasis what so ever.

Harold Putoff, in his May 15th, 1987 article in Physical Review, pointed out that in order for the hydrogen atom in its ground state not to collapse, it had to be absorbing energy from the fluctuation background. In this moment. This is not something that happened at T equals zero – before the Big Bang.

This is something happening at this moment, real time present context, now with every atom and molecule that we see configured before us. It is happening right now.

It is wonderful to have Dr. Puthoff describe this energy in terms of the Bohr atom. It is implicit that the electron orbit dissipates energy. If we consider that to be a resonant shell with no locatable density bias, then it still pertains because the atom itself, even in its ground state, resonates in space.

We have a picture, that we got when we were young, that says a thing is solid, even though particle physicists are telling us that nothing is solid, and while that's all very fascinating on Nova television, we still have a picture that persists. Can an atom, existing in certain states of polarization and stress, perhaps become a conduit drawing upon the energy of space? A transducer in a certain light.

Obviously it must be, or else it couldn't exist. The electron itself must be spontaneously appearing out of the background field. If it was not spontaneously persisting then we have to invoke the somewhat Neanderthal concept that everything had to start at a certain moment. And because we have embraced this new cosmology of the Big Bang in the last couple of decades, we have some real problems.

This is not the best forum to go into this in great detail, but I will say this - the Universe is clumpy. That's a term that is used frequently in astrophysics to describe the fact that mass is not uniformly or isotropically distributed. It is simply not. On a large-scale basis with models that have assimilated data from observatories from all over the world, especially over the last few years, we have seen that the Universe we observe is indeed clumpy. It is in fact concentrated in a way that cannot be the artifact of a Big Bang.

Now that's a bold statement. Alfven (Swiss Nobel Laureate), famous for Alfven waves, has come up with an extraordinarily beautiful description of the plasma dynamics of space. And so far, interesting to note, although he was considered to be a complete heretic when he came out with his theory, every single observation we have made from space with satellite probes, has confirmed his predictions. I think it very important that everybody here who is interested in the reality in which we adhere, become familiar with either the esoteric or the exoteric level of Alfven's work. It's just beginning to appear in the literature. I think Discover magazine had a rather prosaic presentation of it, but it was also quite good. (June '88; the "Big Bang Never Happened.")

If there was not a Big Bang, where things conveniently began with a single event, then we need to begin to consider the fact that something that has a gram equivalence of about a gram per cubic centimeter, which is our body, must be a rather insignificant modification of a field that has a potential of ten to the ninety-fourth power/grams per cubic centimeter.

This impacts the way in which we live together; it impacts the way in which we live with the Earth itself.

I had not initially planned today to show some slides from the NASA program, but because this is a cap speech at the end of the day, I feel that it might be very useful to digress for a moment and observe the rather catastrophic impact that the very concept of discrete encapsulation has had upon human existence and the Earth itself.

And I would suggest to you, after considerable study of the subject, which is now becoming accepted in the literature worldwide, that we cannot sustain the dynamic of human existence any longer unless we begin to transcend the arbitrary, subjective boundaries that we presume to be true. Whether these boundaries are about ourselves, or all phenomena of manifest existence, until we begin to move beyond this anal-retentive state, in which everything must be particularized. Everything being particularized, leaves Humpty Dumpty.

We will never be able to re-assemble existence.

As Fuller pointed out to me at an early age, “existence is already implicitly whole, we break it into parts only in our minds only.”

It is already unified whether or not we have a unified field theory or not. And as Einstein suggested at his last series of lectures at the Advanced Institute at Princeton, “perhaps we can only appreciate the unified field by entering a conscious relationship with it.”

Again, this is something that would not have been at all contrary to what Nikola Tesla proposed, and yet some people would be embarrassed to say it.

I think we need to very succinctly consider that we cannot continue to burn fossil fuels on this planet, and that we really haven't found anything to do with our nuclear waste.

And that the appearance of bona-fide third party confirmation of the generation of energy from space is a significant event in history. It's not significant because it will make a few men popular, or unpopular. It's not significant because it will somehow create a minor change in our concept of being. It's significant because it represents a dramatic shift that we desperately need to embrace.

Right now we are sitting at the edge of an unprecedented human catastrophe on this planet. A friend of mine, Sayed Sayed (sp?), at Texas A&M who has for twenty years been a climatologist, in an elegant experiment recently carried out in Antarctica, has shown clearly that if we lose between 6% and 7% more of the remaining stratospheric ozone the phytoplankton in the oceans will die.

The phytoplankton in our oceans contribute 50% of the oxygen that we enjoy on this planet. It is extremely important to point out that prior to the appearance of photosynthesizing biomass; oxygen was a trace gas which basically appeared through the natural transitions of H_2O .

We simply cannot afford to lose any more oxygen than we already have. At this moment, literally hundreds of millions of internal combustion engines are running. A six-cylinder engine, of normal displacement, consumes eight hundred thousand (800,000) cubic centimeters of oxygen per hour. This transforms the breathable oxygen into combustion by-products, an entire spectrum of combustion products.

In the last twenty years, in Africa alone, we have destroyed 64% of the biomass ground cover. In the last twenty years! This is a United Nations Environmental Program figure, confirmed by satellite and manned space flight telemetry. (Remember that Trombly gave this speech in 1988. Perhaps these gloomy figures and reports are likely to be even worse now in 2007? Gary Vesperman)

Also, in the last twenty years we have consumed 29% of the photosynthesizing ground cover in Central and South America. In the last twenty years! You cannot consume oxygen at the same time you consume the factories that metabolize carbon dioxide and return oxygen to us, and expect to have a sustainable environment. Because as oxygen tensions decrease even a few percent in the troposphere, ozone tensions decrease disproportionately. This is because there is a column of oxygen and other gases that rises from the biosphere to the troposphere and then to the stratosphere. It is on the basis of the mixture of these gases, that we have ozone in the atmosphere.

I would suggest that we can not afford to wait to demand that serious money is applied to this research, Federal money. We need this to happen desperately and we need this to happen immediately. And for those of us who feel that we can be blasé, and wait and wait and wait until somehow this becomes acceptable, (the implementation of this new kind of technology) let me just say that if we think we can wait; we're sorely deluded.

You wonder why there is a drought in Ethiopia. You hear in Time magazine that the so-called scientists can't figure out why there is a drought. Well, Ethiopia at the beginning of the century was covered by 43% forest. Ethiopia today is covered by less than 4% forest. How is the hydraulic cycle supposed to maintain itself?

This at first, this entire consideration at first, seemed to be in rather left field of the consideration of energy generation. But, as I began to explore it further and further and lectured around the world, I began to discover that most of the human race has been entirely uninformed. Some people have suggested this is rather conspiratorial. The slides you are going to see in just a minute have been available, some of them, for several years. We finally got a few of them on CNN December 25th (1987?)

I think when you see them you're going to realize why they are so significant. And as always I would like to thank Richard Underwood of NASA, now retired, for providing these images. They are in the public domain, but anyone who has tried to get photographic data from the NASA space flight program, especially during the Reagan Administration, will find that it is a very difficult thing to do. As a matter of fact, most of the infrared photography is now stored at AMES, and you can't get into the building. Even though this material is not classified, the building itself is off limits.

I would like to have the lights dimmed, and I would like to show these slides and then we can go on from there. We can discuss in more detail about this and other things.

This is the way clouds are supposed to look over the rain forest. These are healthy clouds. These clouds are appearing over the Northern Congo area and this photograph was taken in the mid-seventies from Skylab. Cumulonimbus, stratocumulus, very beautiful cloud formations and an extraordinary density of water vapor as you can see.

Next slide. This is what the ground looks like after you get rid of the forest. This picture isn't from Africa, it's from Brazil; but literally millions of hectares worldwide look like this today. You can see that the watershed to this river, which is the Sao Paulo River, has been almost totally devastated. You can see that evaporation would occur rather rapidly instead of in a moderated sense through the membrane canopy of the forest.

The next slide shows the way clouds look after you do this. By the way, this is the same coordinate almost exactly, taken from the Space Shuttle in 1984, as the slides show big billowy beautiful clouds from Skylab ten years earlier. What you see beneath this cloudbank is now desert. So the cloud building is no longer healthy. Instead of that nice kind of veil of water vapor, you see an extraordinary, Los Angeles scale, optical density. That's dust.

Dust that has been lifted and aerosolized and now remains in chronic suspension over much of the African continent. The clouds are flat. The convective, humid currents that rose from the rain forest no longer carry water vapor in significant quantities.

(At the end of the above "Charles N. Pogue: 200+ MPG Carburetor" suppression case, this writer, Gary Vesperman, mentioned that he had taken an introduction to meteorology class given by University of Wisconsin-Madison climatology professor Dr. Reid Bryson. One memorable lesson was a study Bryson had conducted of why the Harappan Empire of ancient India had failed. Due to over-grazing by sheep and goats, the Harappan Empire's land had become barren. Each drop of rain is comprised of enough water vapor coalescing around a single dust particle that it becomes heavy enough to fall.

Bryson discovered that increasing dust in the air can reach a critical point where there are so many dust nuclei per unit volume that none of the drops of water can become heavy enough to fall as rain. A feedback cycle then starts up where lack of rain causes even more dust to be stirred up into the atmosphere. More dust causes even less rain to develop.

Bryson's suggested simple solution? Stop goats and sheep from over-grazing the land so as to allow the land to re-vegetate and keep down the dust. The feedback cycle then reverses itself – causing more and more rain to fall.

Currently the American southwestern states are enduring the worst drought in many decades. Are they about to suffer the same fate as the Harappan Empire?)

There was a great effort, a joint effort of the United Nations and several other countries to seed what clouds remain to see if the hydraulic cycle could be restored. Unfortunately somebody forgot to plant anything under the seeded clouds, so the desert is now growing. The Sahara desert is now growing six miles per year and is three thousand miles across. This is significant.

Next slide please. This is to give you an idea of the scale. We are not looking at the desert floor here. We are looking at a pall of dust that stretches as far as the eye can see, to the curvature of the Earth. Twenty-five maybe twenty-eight thousand square miles here. This area all used to be called the sub-Sahara and now is moving into the Sahara. Flat clouds, no rain.

The next slide will show you conclusively that when you see breaks in the pattern, you have a deeper understanding of the optical density. This density is equivalent to a critical day in Los Angeles. This again is chronic and has serious ramifications for us on this continent. Serious ramifications.

This has happened because somebody denied vision. This has happened because when in 1906 Nikola Tesla said that fossil fuels would one day create a corruption in the entire atmosphere of the Earth, he was called eccentric. Next slide please.

South of the aridification process, in Zaire we have fires. These fires are burning out of control. They have no planes to drop chemicals on the fires. They have no fire departments. They have no money. This is a small area, only a hundred by a hundred miles. You can see where the forest that was once there has already been stripped away, and the hydraulic cycle therefore undermined.

The next picture is Angola burning. The CIA did not win the war in Angola; fire did. 13,000,000 acres burned in 1985. When NASA scientists examined this photograph, they thought that this was some sort of strange cloud until they realized it was the combination of the plumes of smoke from the fires. Just consider the area involved, and consider the fact that this is now being visited on our country.

Alaska in the last three weeks has lost 750,000 acres to fire. The Secretary of the Interior, Hodel, said, "Let Nature take its course." They saved part of Yellowstone that was close to Old Faithful, but decided that the rest of the wildlife habitat was expendable.

And this while we are spending hundreds of millions of dollars producing neutron bombs and other clean kill weapons, which can never be used and God forbid that they ever should be.

The next slide please. This is Junguoy (sp?) Bay on the coast of Madagascar, and it is not uncharacteristic of bays all over the world now. This is what happens after the deforestation and after the fires. This bay was over six hundred feet deep twenty years ago. Now you can walk across it during the dry season it is so filled with silt. This is happening now, today. It is not theoretical. We have to move now.

Next slide please. This beautiful lake was called Chad. Lake Chad was the size of Lake Erie. Lake Chad supported 1.8 million human beings in peripheral agriculture and fisheries. The next slide is Lake Chad in 1982. (In his movie, *An Inconvenient Truth*, I remember Al Gore showed possibly this very same pair of satellite photos of Lake Chad in central Africa. For an alarming update on Africa's huge lakes, see http://news.yahoo.com/s/ap/20061209/ap_on_sc/warmer_world_african_lakes. Gary Vesperman)

It's the hole that was left when the hydrological cycle was destroyed in Africa. This is not a cyclical drought, and it is not a drought that will be only visited on Africa. The water vapor distribution on this planet is being changed dramatically by the destruction of biomass.

The water vapor budget on this planet is being changed dramatically because we have failed to feel beyond our own little subjective event horizons. We tend to exist like psychic black holes. We take a lot and give too little.

A few years ago I pointed out at the fourth International conference on Atmospheric that the drought of 1986 and 1988 would occur. Now they have occurred. They are not going to cease because we don't want them to occur. They are not going to cease until we realize that we need to mobilize every democracy on this planet, and hopefully this will someday soon include the Soviet Union, to implement this new class of technologies.

We can address these issues by planting forests and by using energy generated by these new technologies. Whether you call it an “N” machine or something else, I’m sure these technologies will continue to evolve.

By utilizing this energy which we can get directly from the “vacuum” of space, we can desalinate and re-irrigate. The Israelis if nothing else have shown us that you can resurrect a desert. We are going to need to resurrect a planet. We cannot posture ourselves and say that national security comes before the security of the human race. It is the security of the human race in total that is now threatened.

This is the last slide. I’m only going to show eleven slides today. I think they speak for themselves. This is a veil of dust that stretches out towards the horizon across the Atlantic Ocean, reaching from the Caribbean Sea, in the lower portion, all the way to the African coast. This is not a phenomenon that occurred in one year. This is a phenomenon that occurs every year – between eight and nine million square kilometers this year. (8-9,000,000 square miles)

This dust acts as condensation nuclei for water vapor causing precipitation in the south, over water, in Honduras, in Nicaragua, while the Midwest and Southeast are parched.

We are changing the way things work, and we haven’t even begun to inspect the ramifications. It isn’t just the “Greenhouse Effect”; it’s a much more complex issue.

Only by stepping over the threshold into a more synergistic view, which is not just a kind of convenient term bandied about for the sake of the “New Age,” but only by entering into a more synergistic view which acknowledges the inherent coherence of phenomena, can we begin to comprehend the fact that when you do something here it affects something over there. In quantum geometrodynamics, actually in a number of other studies, what we call action at a distance, in a coherent field, distance is not presumed.

I hope that this all has said something. Fuller’s suggestion was that Project Earth should either determine whether there was a reason why we had to implement these technologies, or whether it was no big deal.

“Can we last longer? – I need to get my next grant from DuPont.” To produce more chlorofluorocarbons? “Yes, it does seem that it might have that effect, but if I say that in the literature than I am defying my contract.”

Scientific integrity, which used to be something that characterized science, is something that is sadly lacking in too much of the scientific community. Too many have become grant whores and parasitic on society, posturing themselves as authorities, condemned to the inertia of the past and past conceptualizations of reality.

Recently I was lecturing at John Hopkins, which is in itself sort of a miracle, about zero point physics and while we were considering zero point physics somebody said, “Well this is all well and good that Mister Tewari did this over in India, and that it’s all well and good that you’ve done this in the United States. DePalma, it’s all well and good to demonstrate it, but what about the United States Government?”

“I mean wouldn’t the United States Government be doing something?” the child asked. A sixty-two year old child, a very nice man actually. And I said all you need to do is get a hold of the 1986 fiscal year “Request for Proposals” published by the Department of Defense.

Look on page 193 of that document, and you will see something very interesting. In AF section, which is Air Force section 86-77 subsection 6, you will see that a government which denies the reality of zero point technologies is requesting “further research into esoteric energies heretofore unknown including the zero point dynamic fluctuations of Space.” ... for propulsion. But it doesn’t exist you see...

But we want you to research it if you have a bona fide organization that happens to be a prime contractor with triple security clearance. This for propulsion for the Air Force when the entire human race is threatened. Now there is a certain kind of insanity somewhere implicit in that. It’s in the literature; you can order a copy from Project Earth, or call the Pentagon. This is not a classified document. I won’t get in trouble for saying anything. This is actually a program that is ongoing, right now, today, within the government enclave. Call Los Alamos and ask a question about it, and you might get a very long silence on the other end. Call Lawrence Livermore Laboratories and their Aberdeen Testing grounds. The same phenomenon will probably occur.

A significant amount of funding is going to make sure that this irrelevant, mythical phenomena is applied to weapons systems and weapons-carrying systems. Something is very wrong about that. I don't believe that anybody sitting in this room would say that it's in the best interest of our people, or any people of the world, for this kind of technology to be applied outside the realm of civilian application at such a time.

Six to seven percent further depletion in stratospheric ozone, and we are seeing depletion rate trends that indicate that this level of loss will occur very easily within the next two decades. Those of us who have really considered this, and as you consider it more and more I'm sure you'll realize that two decades pass very quickly, for all of us. It doesn't give us time, as I said before for subjectivity.

This field has survived, but not on the basis of being acceptable in the literature. Tewari has tried to publish. I know the IEEE (International Electrical and Electronic Engineers) is involved in this conference, but Tewari tried to publish in IEEE and was summarily rejected. Many of us have tried to publish and have been rejected. The reason Tewari even bothered to try to duplicate this "Acyclic Closed Magnetic Generator," after years of correspondence with DePalma, was because he was able to convince some mechanical engineers that it had some engineering method. You see they actually did material stress analysis.

We also analyzed. We used beryllium copper for a reason. It's just engineering. There are a lot of you in this room who are perfectly capable of doing it. There was nothing magical. We just operated on a different presumption. We said, "Maybe this experiment will work." And if it doesn't work, well then it's like 88% of the rest of them. If it does work, heh, then there is another level of confirmation.

Robert Kinchloe, Professor Emeritus of Stanford University, went to visit the, how can we call it, encumbered "Sunburst Machine". This machine was originally developed by DePalma, Richardson and Bernard at Sunburst Farms, Santa Barbara, California. Dr. Kinchloe just out of curiosity of his own mind, decided that he would just see if there was something about it that was unusual. He presented a paper on it, and I understand that it only got to Bruce through somebody else. But that's not unusual; my own attorney has directed my attention to an article I never knew existed. It's funny about that.

It's funny when representatives from our own Government look me straight in the eye and say, "Yes we know this is real, but we wonder why you would disclose it to foreign nations?"

I said, "I didn't disclose it to foreign nations. It was in an international publication in 1982, and I didn't even know about it."

I would suggest to you that it's time for us to not simply entertain a curiosity. I would suggest to you that it's time for us to enter a human process of inter-relationship, to try to attempt to reintegrate ourselves with one another and not in a floaty kind of "new age" sense necessarily at all. Just call ten people and ask them to each call ten people and tell them that we have an emergency on our hands. Demand that the people we are hiring represent us, supposedly, not the major corporations. We are hiring these people to represent US! Which one of you has the power to lobby in Washington?

We need to send a very clear message to Washington that states, "Gee, don't you think it's silly to be talking about Star Wars? We're only talking about Global Genocide." This without doing anything except for what we are doing right now. We don't have to drop a bomb or fight a war. Just continue exactly as we are now. All we have to do is remain in this collective state of inertia. And I don't personally believe we are going to do that. I don't believe that human beings are not going to rise to this occasion. I don't believe it for a second.

But, I do believe we need first to understand what we are confronted with. And then we need to understand that we can do something about it. We need to act, and we need to act like somebody who is being chased by a hot poker, or someone who cares.

Whichever your response is, Act!

Ten people calling ten people calling ten people, covers the country in a week. It's called "Exponential Networking." I didn't come up with the idea; Fuller did. Call ten people. Ask them to call ten people and find out what happens. It's the equivalence of an electron avalanche in human society. It works.

So, I wanted to try to give a wrap-up and I wanted to cite the fact that we wouldn't be here if it weren't for somebody's vision. Yes, their vision was applied. Yes, their vision, his vision, Nikola Tesla's vision was brought into life. Otherwise he would have been a mere mystic, wouldn't he?

Yes, we do have to sit down with our Macintoshes, or sit with our Hewlett Packard 41C calculators. We had a lot of money (for this field). A total between the two phases of the experiment of about \$200,000. And now I'm finally happy to say it looks like it's going to be produced, or at least this one is going to be produced. It looks like DePalma is also moving into that modality.

We are certainly hoping that more people will come out of the woodworks and say, "Hey, well I've had this thing for the last thirty years. But I was told that if I brought it out into the public when I was working at Los Alamos twenty years ago, they would basically permit character assassination to ensue."

It's hard to believe in some ways, and I don't want to paint a black picture, but I think we have to see the end of times when the New York Times calls a National Center of Atmospheric Research scientist to ask, "How come everyone in the world says that the Reagen report on acid rain is a lie?" And the man answers, "You don't understand the kind of pressure we're under here. People's careers are in jeopardy." This when all our lives are at stake.

So I would like to open the floor to questions....

".....I raised a question in another seminar about the oxygen depletion, and the speaker told me that even if we were to kill all the forests at once it would take a very long time for the oxygen to dissipate out of the atmosphere....

We are talking about a change in the mixture of gases, okay? There are people who say that even if you combusted all the carbon on the Earth, biomass and post-biomass, the oil reserves, everything, there would still 75% of the oxygen in the atmosphere. Unfortunately, they fail to take certain things into account. For example:

Today we sit, and if you knew what we went through to get this acknowledged in the world press (And it would take me an hour to tell you), but we now have it publicly acknowledged by NASA that we have between a 2.3% and 6.6% depletion in world wide atmospheric ozone depending on latitude and time of year. This not taking into account the rather large depression over Antarctica.

When this level of ozone depletion occurs, the level of ultra-violet influx increases the probability of photosynthesis in the lower atmosphere. So, the O_2 is preferentially converted into H_2O_3 for example. This would normally only appear in great quantities after a lightning storm in the past.

We have a lot of H_2O_3 in the atmosphere. We have a lot of O_3 in the troposphere, which until very recently was being attributed to internal combustion. But O_3 was appearing in large quantities in rural areas where there was very little internal combustion, relatively speaking. It became an embarrassment when the Department of Agriculture had to admit that 2.6 billion dollars worth of crops were being destroyed per year by ozone alone.

So the photosynthetic reaction that is occurring as the result of increased ultra-violet influx must be taken into account if we are going to begin to understand what is going to be sustainable in terms of oxygen tensions. It is the mixture of gases that rise from the biosphere through the troposphere and into the stratosphere that determines the tension of ozone, O_3 .

The Nimbus satellite, by the way which NASA has conveniently said is out of calibration even though it was in fine calibration last September, and in almost perfect agreement with the instrumentation on the ground in Antarctica. Which by the way at the center of the Antarctic hole, six miles up, we had 96% depletion levels last year (1987). The jumpsuits worn by some of my friends from the Center for Atmospheric Research, please understand there are a lot of good people there, people there I respect a lot, their nylon jumpsuits were actually degraded by ultra-violet exposure in just one flight. Several people had serious eye injuries.

Now anybody who is going to suggest that this type of influx is not going to effect the species of molecules that we have in the atmosphere, and the mixture of those gases, is denying an extremely important fact. So whereas I'm not suggesting we're all going to die of anoxia, what's going to happen when the phytoplankton in the oceans die? They are the basis of the entire oceanic food chain. If you are not familiar with them, they are the little critters that actually made all this possible. This conference would not be occurring today without their sponsorship.

I think we need to realize that we are sponsored by living things, and we need to support them so they can support us. Does that answer your question?

Yes, thanks.

It occurs to me that the resurrection of Nikola Tesla's vision and other people who have had the vision of the quantum ether, may yet be called on for a second offering. I think it's a good time to invest in this second offering of free energy. We did not invest the last time and now we are paying for it. I don't want to see anybody suffer. What will it be like in ten years, when already the American Cancer Society says that even with sunscreen protection ratings of 15 SPF, direct sun exposure should be limited to an hour?

I hope the Tesla Society will prosper, and move into a new age of manufacturing, implementation and further development. I want what has happened so far to be totally obsolete in ten years. One kilowatt in your pocket, why not?

There is absolutely no reason why not. You've got ten to the ninety-fourth power, grams per cubic centimeter energy equivalent field. It's not in a great big area, but it's a Lot of energy. If we can just scrape the surface, ever so slightly, we would never have to worry about it again.

That's what Nikola Tesla was scheduled to tell Franklin Delanor Roosevelt back in 1943. In 1943 he had proposed to FDR that perhaps we should look carefully at the fact that we can get all the energy we need from any space we happen to be in.

He didn't show up for his meeting with the president. He was found dead in his apartment, "Natural causes."

There is some suspicion that maybe his visionary paranoia of poisoning was not exactly paranoia, ... but premonition.

I have never mentioned this before, but when I spoke at the 1981 Conference at the University of Toronto, a detective, an older gentleman from New York, with a heavy New York accent, approached me afterwards and said that he was a detective at the time when Tesla had been found dead, and said he was involved with the investigation.

He said, for national security reasons, that nobody was to know that the coroner's report had indicated he had been poisoned.

I have never personally read the coroner's report, but the man was about the right age. He showed me a badge, and I had no reason to doubt this man who had come all the way up to Toronto from New York, just to tell somebody after all those years.

The coroner's report did say he had been poisoned. Now it turns out that the only medium to my knowledge it actually cites that Tesla had been poisoned is the Yugoslavian film on Nikola Tesla called, "The Secret of Nikola Tesla." So everybody can watch again the introduction, because they say it right at the beginning. And they also say perhaps that he was killed by the Nazis.

I did not really want to mention all this, but science cannot exist in an environment where science is not allowed to grow.

Any other questions? Well, you have all been a tremendously patient group. Thank you for your attention.

Thank you Adam.

Em-Tech Technologies: Advanced Solar Photo-Voltaic Crystal Lattice Cells

In 1989, during another flight of the Space Shuttle Atlantis, the U.S. military photographed a newly launched Soviet communications satellite in geo-synchronous orbit above Moscow. There were several things about the new Soviet satellite which were unusual. First, spectroscopic investigation of the signature of the satellite revealed the familiar tell-tale presence of nuclear material located in the aft section of the satellite. It was presumed (incorrectly, it later turned out) that this signature confirmed that the satellite was, indeed, powered by a small on-board thermo-nuclear reactor.

What did not make sense, though, was the fact that the power requirements, which American military analysts believed were needed to support the variety of functions being performed by the Soviet satellite, were believed to consume considerably more power than could possibly be produced by a nuclear reactor of the kind and size believed to be installed and operating on the satellite.

Further, the photographs revealed the presence of a peculiar kind of parabolic dish suspended from the nose of the satellite. It was shaped like the much larger satellite receiving dishes commonly used by television viewers in the West. The peculiar thing about this dish was that it was very small, less than three feet in diameter, and had a very flat parabolic surface. This meant that it did not focus the signals they presumed it received onto any boom-mounted collector or decoder device. No such device was mounted on or attached to the dish.

Finally, it appeared to be constructed of a material or combination of materials which was unknown at the time, but which appeared to be highly reflective, almost like a mirror. Interestingly enough, the dish was also apparently transparent to interstellar signals which originated behind it. For years it was believed that the strange parabolic device was a special kind of high-gain directional antenna. That assumption later proved to be totally false.

In fact, information recently supplied by the I.N. Frantsevich Institute for Problems of Materials Science (IPMS), Kiev, Ukraine, to support several of its patent applications confirms that the dish was constructed of the same crystalline lattice material which is used to construct the interior of exceptional energy storage devices, but built with some very special features. The purpose of the device was to convert sunlight and other ambient wavelengths of energy into ion flow or electrical current, in sufficient amounts to maintain the electronic and other operational functions of the satellite. In the West we refer to devices which act this way as photo-voltaic devices or solar cells. The device which looked like a high-gain antenna dish was certainly a solar cell, but it was much more than that.

The quantum physics and the new technologies which made it possible to produce the crystalline lattice structure of the energy storage devices also made it possible to produce a similar crystalline structure which was capable of simultaneously converting wavelengths of widely varying characteristics into ionic flow or electrical current. The strategy employed by this revolutionary new material worked across almost the entire spectrum of known wave lengths, from far out in the realm of extra-low frequency long wave lengths propagated by the original Big Bang all the way up through the visible light spectrum and beyond, into X-rays and ultra-high frequency, ultra-short wavelength wave forms associated with pulsars, quasars and quantum singularities.

The quantum mechanics which describe the characteristics of the crystalline lattice structure recognize two distinct features of wave/particle propagation which are nowhere integrated in the linear quantum mechanics or solar cell technologies of the West. First, the characteristic of crystals which differentiates them from all other known material substances is that they resonate (or oscillate, to be more precise) at both primary and harmonic frequencies.

A crystal-based tuning fork which resonates at “A” natural will also resonate in sympathy with any harmonic of “A” natural propagated across the entire wave spectrum if the wave form is detectable and of sufficient intensity to activate the crystalline structure of the tuning fork.

The crystalline lattice of the Soviet solar cell was deliberately designed and constructed to resonate at all the harmonic frequencies of the entire wave length spectrum, as defined by six discrete bands which embrace all known wavelengths. These bands are each a harmonic of the next, and all of them cause excitation (oscillation) of the crystalline lattice structure at the same time.

This phenomenon reflects a new feature of quantum mechanics, instantaneous simultaneity of crystalline oscillation regardless of the distance of separation. The potential of this phenomenon in future applications is truly awesome. Properly harnessed, for example, this property of crystal structures as defined by the IPMS version of quantum mechanics could make it possible to communicate over vast distances with no time lag. The oscillation characteristics demonstrated by these structures operate outside the normal context of space-time.

This writer, Gary Vesperman, happens to be the inventor of a major advance in torsion field communications, made possible by these special crystalline lattice structures. The maximum theoretical capacity of torsion field communications apparently is 40 billion channels of three-dimensional holographic television through the entire earth without attenuation at one billion times the speed of light.

It has long been recognized in the West that oscillating crystal structures can be engineered to create a usable flow of ions in the form of low-voltage direct electrical current. However, instead of relying exclusively on light in the visible spectrum alone to create ion flow, the Soviet system operates on all known ambient wave lengths simultaneously, in six harmonic resonant bands. It creates ion flow wherever and whenever such wave forms are present. It means that these devices operate on ambient heat remaining in a room or in the dead of night when there is no visible light present at all.

One more feature distinguishes the Soviet material from the Western photo-voltaic or solar cell. The Western cell operates by trapping photons of light in a cleverly designed network of glass, mirrors and other inter-connected reflective materials which are deposited on a substrate of a dielectric material. When the volume of "photon" traffic striking the dielectric material reaches a minimal threshold, electrical current is created.

That is, when enough photons have been captured to excite the surface of the substrate by either directly impacting molecules on the substrate surface or by creating heat energy sufficient to cause those molecules to oscillate, ion flow is induced. It is not a particularly efficient method, but it is the best that has been devised in the West.

In the Soviet material, because photons are known to behave in precisely the same manner as electrons, the photons (which are present in all wave forms, including visible light) are simply introduced to the energy wells between the tips of the molecular pyramids on the sheets of crystal lattice which overlay each other. The material is so efficiently designed that it actually absorbs (here is another place where imprecise common language gets us into technical difficulty) the individual photons in the same way it accommodates electrons.

During the discharge cycle, when a circuit is open and available, the photons simply follow the path of least resistance, which is out through the crystalline lattice and into an electrical circuit, energy storage device, or some other similar application.

The Soviet solar panel operates at a nominal efficiency of no less than 51% in the least consistent pieces which have been tested in the United States. The best pieces have produced test results demonstrating operating efficiencies in excess of 80%. These devices/materials produce electrical current at a higher rate per unit of exposed surface area in the dark of night than the best solar panel ever produced in the West will generate in the most ideal sunlight conditions.

The simple circular device attached to the Soviet satellite was a single solar cell which was used to power the entire ship and all its functions. The nuclear fuel signature detected by the Atlantis crew was nothing more than the emissions produced by a piece of spent nuclear fuel placed on board the satellite, intended to mislead the American surveillance team. It worked.

Advanced solar photo-voltaic cells produced by Em-Tech Technologies of Toronto, Canada, have demonstrated actual hands-on efficiencies in laboratory applications of more than 50%. These cells are based on designs developed by the IPMS. Theoretical models have yielded energy production efficiencies of more than 80%. These cells operate on such wide band-widths and at such high efficiency rates that their performance characteristics in the dark of night exceed those demonstrated in broad daylight by the best current, state-of-the-art solar cells produced anywhere else in the world. When applied to current global electric energy requirements for domestic, commercial, industrial and military use, the cost of electricity could be reduced to less than \$.002 per kilowatt hour, with the added capability of operating not only in daylight but at reduced loads throughout the night, regardless of weather, on virtually any scale.

(When I, Gary Vesperman, was peripherally involved with the IPMS inventions during the 1992-1994 period by way of preparing Rodger Ward's electric car IPO, I heard a cute story. Ashurst Technology Corporation was based in Las Vegas, Nevada, where I was also working. Ashurst wanted to bring some of the IPMS scientists to Las Vegas and set up laboratories. The scientists, who were used to the much colder climate of Kiev, Ukraine, balked at moving into the hot desert. Toronto, Canada was chosen as a compromise location for Em-Tech Technologies.)

For comparison, the very best solar cells ever produced in the West have been produced by the Japanese. These cells operate at a maximum of 19% efficiency. That is, they convert as much as 19% of the ambient visible sunlight shining on a clear, cloudless day into ion flow, which then becomes low-voltage direct electrical current flowing through a circuit. The Japanese panels require months per section to manufacture and literally cost more than their weight in gold to manufacture. They are very heavy and are so sensitive to vibration and calibration that once installed, they cannot be moved at all.

Joint ventures of the IPMS with more than a dozen private sector companies to develop these useful inventions have been repeatedly sabotaged by the U.S. Government's Defense Intelligence Agency and others. (Source: David G. Yurth, *The Anthropos Files: Tales of Quantum Physics from Another World* – 2nd Edition, 2007)

David G. Yurth emailed to Gary Vesperman on August 5, 2007 his own suppression story:

When I was hired in the Spring of 1992 by Ashurst Technology Corp, whose offices were then located on Western Avenue in Las Vegas, I was assigned the task of understanding everything there was to know about the new sciences and technologies developed by the I.N. Frantsevich Institute For Problems of Materials Science between 1945 and 1991, when the Berlin Wall came down. The owners of Ashurst had accidentally hooked up with three top scientists from the Institute, as reported in the publisher's proposal I submitted to my agent in the Spring of 1994. (Yurth's proposal comprised the original edition of *The Anthropos Files: Tales of Quantum Physics from Another World*. "Anthropos" is a Greek word meaning 'of man' or 'things related to humans'. Yurth used it in the title to his book about IPMS technologies because it occurred to him that their epic scientific and technological achievements offer everything needed to save Planet Earth from what we humans have been doing to it.)

My publisher's proposal was released by my agent to former Secretary of Defense Frank Carlucci at a luncheon they both attended at the Washington Press Club two weeks after I gave her my manuscript. Two weeks later, two guys in dark suits and thin black ties came into my office and attempted to confiscate my computer and all my records. I called the police, had them arrested and then was forced by the Director of the Western Regional Office of the Defense Intelligence Agency to forego publishing the book for five years under threat of prosecution and personal injury. When you read the treatment, you will understand why it was important. That was a major league suppression exercise, the scope of which you will come to appreciate after you have read my manuscript. They are still successfully suppressing many of the technologies that are cited in that piece of work. (Some of them are described elsewhere in this compilation of energy invention suppression cases.)

However, the most important scientific technology suppression story, in my estimation, is the successful squelching of the report issued to Discover Magazine by the CDF Collaboration at Chicago's Fermi Labs, citing the discovery and verification of sub-quarks as the constituents of quarks. I reported this information in my still unpublished book manuscript *Seeing Past The Edge* in considerable detail, including copies of the press releases and report abstracts issued by the more than 450 signatories to the report when it was issued. (This writer, Gary Vesperman, edited *Seeing Past the Edge*.)

If ever there was a significant suppression of essential, baseline scientific information, this was it. What it means to science, and what it suggests about the sufficiency of the Standard Physical Model is one thing. But what it says about the extent to which the gatekeepers for the scientific establishment are willing to go to suppress information that threatens their stranglehold on their own territorial imperatives is another matter entirely. If I were to choose between all the instances I know of scientific or technological suppression during the past century, this would have to be number one on my list, bar none.

Dave

Like energy inventors, physicists occasionally also encounter suppression. See <http://rense.com/general77/21.htm>.

Marshall Douglass Smith (Author): The Rise of Fascism in the American Energy Business

The ruthless geo-political strategy of corporate American energy oppression is clearly exposed by Marshall Douglass Smith in his book *Black Gold Hot Gold – The Rise of Fascism in the American Energy Business*. The book details the collusion of oil companies and the US military and federal government since the 1920s. A preview of Chapter 3 is available online at http://www.theForbiddenKnowledge.com/hardtruth/black_gold_3.htm, and is recommended reading.

To be fair, an experienced oil and gas geologist, a friend of Gary Vesperman, thinks Smith's account is false of how the end of the Vietnam War was intentionally delayed until the very day that Standard Oil had completed its exploration of oil offshore of Vietnam.

And what do you suppose is really happening with Iraq and Iran? The *Los Angeles Times* article "It's Still About Oil in Iraq" (8 December 2006) -- see http://www.truthout.org/docs_2006/120906Y.shtml -- affords us some clues. The U.K. *Independent* article "How the West will make a killing on Iraqi oil riches" (http://news.independent.co.uk/world/middle_east/article2132569.ece, 7 January 2007), and Truthout's "New Oil Law Means Victory in Iraq for Bush" (http://www.truthout.org/docs_2006/010807A.shtml) confirm the suspicion of what many people think is the real reason why the United States invaded Iraq.

Perhaps the key to peace in Iraq would be to share Iraq's oil dividends among the Iraqi people, in the same manner that Alaska shares oil dividends (see <http://www.iraqdividend.com>). Instead, the American and British oil companies, in collusion with Bush administration, are planning to keep the lion's share. Realizing the real purpose of the U.S. invasion and reconstruction of Iraq, Iraq's oil workers unions are struggling to prevent the handover of ownership of Iraq's oil to foreign oil companies (see http://www.truthout.org/docs_2006/060907A.shtml).

To order a video about the US warning to the Taliban in August 2001 to allow an oil pipeline through Afghanistan --- or bombs would start dropping in October 2001 --- visit http://www.nutech2000.com/category1_1.htm.

It is logical to assume that the real reason for both Gulf Wars, and the interim between the two wars which featured US Navy patrols of Iraq, was to allow major American oil companies to use explosions from US Navy bombs -- for well over a decade -- to seismically explore for oil in the Persian Gulf off Iraq's shore, at nearly no expense to themselves, just like Standard Oil did during the Vietnam war.

Is it now time to explore for oil in the Persian Gulf off Iran's shore? But first the oil companies have to secretly stampede the United States and Iran into a very long war with each other...

CONCLUSION

It should now be evident that the oil/auto and power monopolies viciously defend their global energy markets by threatening, persecuting or even murdering targeted energy inventors, and even entire nations.

U.S. Patent Office Holds Secret 5000 Patents

The most straightforward way to suppress development of new sources of energy and still maintain an appearance of legitimacy might be by controlling the United States Patent Office.

Under the Invention Secrecy Act of 1951, the government may restrict the publication and dissemination of information about new inventions if their disclosure could be "detrimental to the national security." At the end of fiscal year 2006, there were 4942 invention secrecy orders in effect. These "secretized" patents are kept in the vault at the U.S. Patent Office (Park 5 Building). They never receive a patent number, and the inventor is rarely, if ever, compensated by the government for use of the invention. (Source: http://www.fas.org/blog/secrecy/2006/12/patent_secrecy_orders_lifted_o.html. Other patent secrecy links: <http://www.fas.org/sgp/othergov/invention/admin.html>, <http://www.fas.org/sgp/othergov/invention/37cfr5.html>, <http://www.fas.org/sgp/othergov/invention/australia.pdf>, <http://www.fas.org/spp/starwars/>, http://www.fas.org/blog/secrecy/2006/12/patent_secrecy_orders_lifted_o.html, http://www.fas.org/blog/secrecy/2006/12/navy_mind_control.html, and www.fas.org/sgp/othergov/invention/program.html.)

The U.S. Patent Office has a nine-member committee that screens patents in order to protect "national security".

An understandable reason for suppressing certain types of energy inventions is that the knowledge behind them is also capable of producing tremendously destructive advanced electromagnetic weapons such as the "death ray" apparently invented by Nikola Tesla and the Russian military's deployment of plasma beam weapons. Hence many such new energy technologies, particularly those using this kind of knowledge of advanced electromagnetic principles, are considered "dual use" technologies that are among the 5000 un-numbered patent applications confiscated in a vault at the U.S. Patent and Trademark Office because of their military potential and the need to keep that knowledge from America's enemies.

A hidden purpose of this committee is to also find and remove from public access energy-related patents which could threaten the fossil fuel and power monopolies.

Canada's patent office doesn't have a similar screening committee. It is recommended that energy patents possibly in danger of being classified should be first applied for in Canada. Once granted, up to one year is allowed to apply for the same patent in the U.S. Patent Office. Now the patent can not be classified because it is already out in the public domain, courtesy of Canada.

Text of Generic Patent Secrecy Order

SECRECY ORDER

(Title 35, United States Code (1952), sections 181-188)

NOTICE: To the applicant above named, his heirs, and any and all of his assignees, attorneys and agents, hereinafter designated principals:

You are hereby notified that your application as above identified has been found to contain subject matter, the unauthorized disclosure of which might be detrimental to the national security, and you are ordered in nowise to publish or disclose the invention or any material information with respect thereto, including hitherto unpublished details of the subject matter of said application, in any way to any person not cognizant of the invention prior to the date of the order, including any employee of the principals, but to keep the same secret except by written consent first obtained of the Commissioner of Patents, under the penalties of 35 U.S.C. (1952) 182, 186.

Any other application already filed or hereafter filed which contains any significant part of the subject matter of the above identified application falls within the scope of this order. If such other application does not stand under a security order, it and the common subject matter should be brought to the attention of the Security Group, Licensing and Review, Patent Office.

If, prior to the issuance of the secrecy order, any significant part of the subject matter has been revealed to any person, the principals shall promptly inform such person of the secrecy order and the penalties for improper disclosure. However, if such part of the subject matter was disclosed to any person in a foreign country or foreign national in the U.S., the principals shall not inform such person of the secrecy order, but instead shall promptly furnish to the Commissioner of Patents the following information to the extent not already furnished: date of disclosure; name and address of the discloser; identification of such part; and any authorization by a U.S. government agency to export such part. If the subject matter is included in any foreign patent application, or patent, this should be identified. The principals shall comply with any related instructions of the Commissioner.

This order should not be construed in any way to mean that the Government has adopted or contemplates adoption of the alleged invention disclosed in this application; nor is it any indication of the value of such invention.

(The harsh punishment for a violation of this secrecy order, should an inventor exploits or even simply discusses his or her invention which is classified by a patent secrecy order, is 20 years in federal prison. In effect the U.S. Government brutally and suddenly orders unlucky energy inventors to keep absolutely quiet and not do any more work on their inventions – without compensation for their well-meaning efforts. Thus a shocked, intellectually shackled and frustrated inventor would end up losing everything he or she had invested in his or her invention. The public is also ruthlessly denied any benefits from the invention.)

US Congress: Energy Inventor Protection and Patent Declassification Act

The newly elected United States Congress should immediately write, introduce, and pass a bill titled, "Energy Inventor Protection and Energy Patent Declassification Act of 2007". Included should be 24/7 protection of energy inventors and their property by armed guards, and declassification of as many as 5000 energy patents unfairly held in secret by the U.S. Patent Office. (In spite of what one email correspondent suggests is the appearance of appointing a fox to guard the henhouse.)

Remy Chevalier suggests that the U.S. Congress needs to put back into question the entire review process of patent law, and its consequences on environmental health, by imposing strict fines to who ever is caught buying energy patents for the sole purpose of keeping its protocol out of commercial circulation.

In this fourth version of Gary Vesperman's compilation of specific energy invention suppression cases, the body count rose to a disgusting high of as many as 17 innocent people who were brutally murdered just to ensure the global market supremacy of giant energy monopolies. 31 energy inventors and associates are known to have been threatened with death, and 5 energy researchers and associates have been imprisoned or falsely charged.

The Congressional bill should also include a provision to hunt down and imprison for many years the secret government/corporate energy invention suppressors and their hired bullies and assassins.

The U.S. Congress in 2005 gave the oil companies \$2.6 billion in tax breaks as a reward for \$190 million in campaign contributions. (Source: League of Conservation Voters)

Wilhelm Reich: Orgone Energy Motor

In the mid 1930s Wilhelm Reich, MD, began noticing an energetic connection that is shared by all living beings and had the clarity of mind to not dismiss the observation as unimportant. Dr. Reich called this energy "orgone" and worked for decades demonstrating its laws and studying its various manifestations.

Dr. Reich in 1948 got a "synchro" type of electrical spinner motor to run from both an orgone energy accumulator and an orgone-charged high-vacuum tube. James DeMeo and Nicholas Reiter have each written an article on the orgone energy motor construction and use, with eyewitness quotes and many construction details. DeMeo has also published a third article on the subject of electrostatic motors, which are powered by sources bearing some resemblance to what Reich used in conjunction with the orgone accumulator.

An assistant, either suspected to be secretly working for the U.S. Government or was simply an incompetent and thief, had helped with its mathematics and construction. This assistant then took some of Reich's money and the motor with him that winter on the pretense of working on further refinements. Instead he disappeared. None of his claims about his past including previous employment were verifiable.

The U.S. Government then campaigned for many years to thoroughly ban and burn Reich's books and any other printed literature that included the word "orgone". U.S. Government violations at the time included the warrant-less invasions and searches of the homes of people peripherally associated with Reich. In one such case, a home was searched, and Reich's books were confiscated from private bookshelves. School teachers and doctors who worked with Reich were fired from their jobs.

Reich died at the age of 60 after serving eight months of a two-year federal prison sentence. Reich had been falsely labeled a quack and a racketeer by the U.S. Government and the corrupt American medical system. (Sources: Emails from James DeMeo, <http://www.proliberty.com/observer/20030310.htm>, <http://www.orgonelab.org/cgi-bin/shop.pl/page=xpulse.htm>, <http://www.orgonelab.org/cart/xpulse.htm>, and http://pw1.netcom.com/~rogermw/Reich/orgone_motors.html.)

Energy invention suppression much too frequently involves energy inventors unjustly being deprived of their constitutional rights. Years ago James DeMeo, Ph.D., wrote a scathing well-referenced article "Anti-Constitutional Activities and Abuse of Police Power by the U.S. Food and Drug Administration and other Federal Agencies" (see <http://www.orgonelab.org/fda.htm>). The flagrant abuses by the U.S. Government he cites are clearly reflected by U.S. Government-sanctioned energy invention suppression terror tactics. At its end, he lists the pertinent constitutional rights which for over two centuries hundreds of thousands of Americans have defended with their lives as sacred:

The Constitution of the United States Bill of Rights, 15 December 1791

Amendment I: Congress shall make no law ... abridging the freedom of speech, or of the press...

Amendment IV: The right of the people to be secure in their persons, houses, papers, and effects, against unreasonable searches and seizures, shall not be violated...

Amendment V: No person shall be ... deprived of life, liberty, or property, without due process of law...

Bruce DePalma (Interview): A Peaceful Revolution against Energy Oppression

A University of California at Santa Barbara 1983 interview by Daily Nexus Staff Writer Evette Justus quoted Bruce DePalma, local physicist and scientist:

"A peaceful revolution can occur providing we can free ourselves from the oppression which is dominating us and controlling our day-to-day existence. This oppression is the necessity to make payments to a system which gives us the energy to heat our homes, transport ourselves, brings our food and fertilizer to grow our food, and makes the plastic that goes into our clothes. When we can be released from that we will have a choice. And this can be the only revolution – a peaceful revolution, and free energy technology makes this peaceful revolution possible." (Quote submitted by David Crockett Williams.)

How to Stop Energy Invention Suppression

Compiling energy invention suppression cases is the most disgusting project this writer, Gary Vesperman, has ever done. All too many times while writing these stories, I have recoiled in dismay at the meanness of the energy invention suppression bullies who for DECADES have conducted their vicious operations paid for by giant lying greedy energy monopolies and their secret allies in the United States Government.

Even if HALF of these suppression cases can somehow be found to be false, the conclusion is still inescapable that we have a very, very serious problem of which very, very few people are even aware.

Hundreds of billions of dollars of energy business are at stake. I can not think of another issue that is more fundamental to American politics than energy invention suppression.

Energy invention suppression indirectly impacts on the largest scale economics, national security, foreign policy, Middle Eastern oil wars, the environment, food production, preservation of beloved parks and wilderness areas, protection of endangered species from extinction, trade balances, climate change, conservation of scarce natural resources, company and personal bank accounts, and the health and safety of ourselves and our loved ones.

The perpetrators of energy invention suppression constitute the world's single most powerful economic force. They are secretly committing acts of high treason for which their leaders should be hunted down and severely punished. The Internet can educate and empower a widespread grassroots revolt against energy invention suppression. To stop paying hundreds of dollars a month of tribute to the energy tyrants as soon as possible, each of us millions of energy consumers must again and again identify and carry out specific organized actions – the combination of which hopefully will culminate in a peaceful overthrow of those traitors, restoration of full constitutional rights to energy inventors, and gaining our rightful energy freedom.

- In each energy activist's immediate geographic area, establish or join an Adopt an Energy Inventor Group to financially support and even physically protect a local energy inventor against harm.
- Petition the U.S. Congress to pass specific legislation against energy invention suppression such as the above suggested "Energy Inventor Protection and Energy Patent Declassification Act of 2007". One by one, each Congressperson must be closely questioned, monitored and held accountable for his or her actions concerning energy invention suppression. Government and corporate officials as well as Congresspersons who are found to be committing high treason by supporting often vicious energy invention suppression should be hunted down, quickly brought to trial and, if convicted, severely punished.
- Review and modify, where needed, existing federal and state laws and regulations which either intentionally or unintentionally suppress energy inventions. For example, in the suppression case described above of the Fish/Kendig Variable Venturi carburetors, the possibly corrupt California Air Resources Board forced a young college student to remove a Fish/Kendig carburetor from his Mercury "gas hog", even though it doubled mileage and reduced pollution.
- Educate and persuade local groups, companies, labor union locals, and government agencies to pass resolutions advocating energy invention freedom.

- Monitor energy research web sites such as www.keelynet.com, www.rexresearch.com, www.zpenergy.com, www.nexusmagazine.org, www.pureenergysystems.com, www.orgonelab.org, www.bob-dratch.org, www.teslatech.info, www.byronwine.com, www.commutefaster.com, www.freeenergynews.com, www.padrak.com/ine, www.cheniere.org, http://peswiki.com/index.php/Congress:Member:Leslie_R._Pastor, <http://www.atlantisrising.com>, <http://www.newenergycongress.org>, http://peswiki.com/index.php/New_Energy_Congress, <http://www.borderlands.com/freeenergy.htm>, <http://www.lenr-canr.org>, www.green-salon.com, <http://www.novainstituteoftechnology.com/>, <http://www.electrifyingtimes.com>, and <http://www.energysuppression.com>.
- Sell or give away millions of "End Energy Invention Suppression Now!" T-shirts, bumper stickers, yard signs, banners, etc.
- Subscribe to and buy back issues of alternative energy research publications such as Fusion Facts, Cold Fusion Times, Nexus, New Energy Times, Infinite Energy, Extraordinary Technology, Journal of New Energy, Borderland Sciences Research Foundation, New Energy News, Electrifying Times, Space Energy Journal, New Energy Movement, German Association for Field Energy, Swiss Association for Free Energy, and Canada's Planetary Association of Clean Energy.
- The mission of <http://www.energysuppression.com> includes a repository of energy invention suppression cases. Energy freedom activists may post notices relating to putting a stop to energy invention suppression. Energy freedom activists who organize a local "Adopt an Energy Inventor Group" will find resource materials and a place to announce and coordinate their anti-suppression activities.
- <http://www.energysuppression.com> will enshrine an honor roll of "Warriors for Energy Freedom". These are companies, university student groups, labor union locals, individuals, environmental organizations, and other groups who advocate restoration of full constitutional rights and adequate financial support to inventors of new sources of energy. A description of their actions, which can be as simple as a publicly declared corporate resolution, would accompany their listings. New nominations will be voted in by majority vote of the New Energy Congress.
- <http://www.energysuppression.com> will display an "Energy Invention Suppression Hall of Shame" listing the names of those who have been clearly identified as perpetrators of energy slavery. New nominations will be voted in by majority vote of the New Energy Congress.

The U.S. Congress and the environmental organizations quibble about raising automobile mileage standards a paltry few miles per gallon. Let's get real! Let's instead now begin this ultimate environmental crusade with millions of bumper stickers, meetings, state legislative resolutions, demonstrations, emails, yard signs, labor union boycotts, T-shirts, energy inventor adoptions, movies, live concerts, crusades, letters and phone calls to the U.S. Congress, web sites, television documentaries, sit-ins, college lectures, protests, and banners in the streets and on vehicles blowing in the wind...

End Energy Invention Suppression Now!

DISCLAIMER: Inclusion of any invention or technology described in this compilation of energy invention suppression cases does not in any way imply its suitability for investment of any kind. All investors contemplating any investments in these devices and technologies should first consult with a licensed financial professional. Prospective investors should exhaustively perform their own investigation of pertinent facts and allegations of facts. Investors should also ensure thorough compliance with regulations of the federal Securities and Exchange Commission and appropriate state securities divisions. For more information, see <http://www.zpenergy.com/modules.php?name=News&file=article&sid=1655>.

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 September 3, 2007

Thank you for your comment, Gary Vesperman.

The comment tracking number that has been assigned to your comment is SEDDSupp20012.

Comment Date: December 1, 2011 21:12:42PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDSupp20012

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Attachment: Locomotive_Power_Sources.docx

Comment Submitted:

Attached is my compilation of candidate power sources for high-speed rail locomotives. It is available in my website www.padrak.com/vesperman.

My website also has my compilation of 95 energy inventions that have been thoroughly and sometimes violently suppressed by the U.S. Government and others.

Both of these documents include similar descriptions of the IPMS-developed thorium-227 electricity generator:

IPMS: Thorium-227 Electricity Generator

The I.N. Frantsevich Institute for Problems of Materials Science (IPMS), Kiev, Ukraine, from 1951 through 1991 secretly employed 6600 of the most brilliant theoretical physicists in the entire Soviet Union to work for nearly 50 years with complete freedom. They were able to develop whole new sciences, technologies and materials unknown in the West.

Their models of non-linear quantum mechanics, plasma physics, atomic engineering, nuclear physics and related mathematical and theoretical constructs, which made their development possible, are so unique that they challenge the validity of the most fundamental assumptions embodied in the Copenhagen Interpretation model currently held in general acceptance in the West.

For example, Western-developed particle/wave quantum mechanics is described by Einstein's $E = MC^2$. The Soviet nonlinear model of quantum mechanics is described by the formula $E = MKv$ [Energy = Mass @ rest as a function of a mathematical constant].

Einstein's theory of relativity assumes that the speed of light is constant. However, measurements have shown that the speed of light has slowed down 7 per cent over the past two centuries. (See <http://worldnetdaily.com/news/article.asp?ARTICLEID=39733>.) Einstein's famous equation is therefore not based on the real world of peer-reviewed experimental results. Consequently the more correct Soviet model has enabled numerous technical advances not even dreamed of by Western science.

Among several energy inventions developed by the IPMS are free-standing thorium-227 isotope electric power generating plants. They can be small enough to power a single home and large enough to power whole communities. They also can operate for up to 18 years without ever requiring refueling or maintenance.

Arrangements to commercialize these useful energy inventions by joint ventures of the IPMS and more than a dozen private sector companies were repeatedly sabotaged by the U.S. Government's Defense Intelligence Agency and others. (Source: David G. Yurth, *The Anthropos Files: Tales of Quantum Physics from Another World* – 2nd Edition, 2007)

(End of excerpt)

This Draft Solar PEIS should precisely compare the cost-effectiveness of a World War II Manhattan Project-styled crash program to develop and commercialize the IPMS-developed thorium-227 electricity generator with covering and otherwise ruining millions of acres of pristine wildlands with relatively inefficient solar energy collectors and transmission lines.

Locomotive Power Sources

High-speed trains typically rely on some means of supplying energy to the locomotive from an external source. For example, cumbersome overhead electric lines are tapped to directly power a locomotive's electric drive wheels. Another method of connecting the locomotive to an electricity grid is with a dangerously exposed high-voltage third electrified rail. Linear magnetic propulsion mechanisms have been researched.

It would be much cheaper and easier to build and operate high-speed trains if their locomotives utilize an internal practically fuel-less power source.

The following candidate high-speed locomotive power sources appear worthy of further research. Some may be found to be worthwhile for building and testing prototype self-powered locomotives.

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BlackLight Power's Hydrino Generator

BlackLight Power, Inc., is developing an exotic new source of clean energy from ordinary water. Either an electrolytic cell or gaseous potassium ions in a vacuum compress hydrogen atoms into lower-energy-state hydrogen atoms called "hydrinos". When the hydrinos are formed, energy is released which in magnitude is between chemical and nuclear energy. BlackLight Power, Inc., has ambitious plans for retrofitting fossil-fueled and nuclear power plants.

BlackLight Power, Inc., is developing a 100-kilowatt generator which can power a car 100,000 miles on a tank of water. BlackLight Power, Inc., claimed some years ago that it is developing a 10-kilogram battery which can supply 150 horsepower for 1,000 miles.

BlackLight Power, Inc., has already licensed 8,250 megawatts of clean, safe hydrino generation fueled by water to seven utilities (Hoover Dam's nameplate capacity is 2,080 megawatts) – eliminating \$2 billion/year in fuel costs.

Focus Fusion

See <http://www.focusfusion.org/>. Apparently this method is much less expensive than hot fusion.

Thorium PowerPack

Bob Dratch's thorium powerpack would generate electricity at approximately one-tenth of the cost of current methods of producing electricity. Thorium is sufficiently abundant that the entire planet can be powered for millennia. After ten years of continuous operation, a trace amount of U-233 is produced. U-233 recovery to re-purify the thorium is easily accomplished. Thorium thus lasts a long time when recycled and consequently is a very efficient energy source. After extraction from ore, thorium does not require energy-intensive enrichment as is the case with uranium.

A thorium-powered reactor is inherently safe. It doesn't run the risk of "meltdown" or explosion nor can even a dirty bomb be created. Its nuclear reaction simply stops when its neutron exciter is turned off.

The simplest and smallest "table top-sized " neutron exciter design is something close to the size of a 4-D cell flashlight, and starts at about 500-kilovolt neutron output. In fact this smallest most cost-effective system can run off 4 D cells for its power.

A thorium powerpack's neutron excitor does not use radioactive flux components as conventionally done for portable systems. Instead it relies on Dratch's invention of a novel method of resonant phonon pair cleavage using specifically designed nuclear lattice holo-forms (holographic waveforms) to induce neutron imbalance in a host atom where the host atom then attempts to establish "balance" through the liberation of neutrons. Dratch demonstrated the first model of this novel design back in 1966.

Commercial thorium powerpacks can be developed with 50 or 100 kilowatts of output for home use, and up to 1 megawatt for industrial use. They actually are "power amplifiers" with power outputs of 60 times over input power. Maintenance would be minimal.

IPMS Thorium-227 Electricity Generator

The I.N. Frantsevich Institute for Problems of Materials Science (IPMS), Kiev, Ukraine, from 1951 through 1991 secretly employed 6600 of the most brilliant theoretical physicists in the entire Soviet Union to work for nearly 50 years with complete freedom. They were able to develop whole new sciences, technologies and materials unknown in the West.

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Among several energy inventions developed by the IPMS are free-standing thorium-227 isotope electric power generating plants. They can be small enough to power a single home and large enough to power whole communities. They also can operate for up to 18 years without ever requiring refueling or maintenance.

Micro-Fusion Reactor Employing Stable High-Density Plasma Electron Spiral Toroids In Neutron Tube

Electron Power Systems, Inc., (EPS) has discovered the explanation for ball lightning and from that has invented and protected with five patents an Electron Spiral Toroid Spheromak micro-fusion reactor. Safe, pollution-free micro-fusion reactor-powered generators could reliably generate electricity with capacities ranging from 10 kilowatts through 1000 megawatts at the cost of 10% of today's electricity. All transportation vehicles could be reliably and safely powered with micro-fusion reactors with substantially lower production, operating and maintenance costs and without poisonous emissions. EPS expects to reduce the mass and cost of aircraft by 70%, and space launch costs by more than 95%.

Each year 15 million cars and trucks are sold in the USA, and 48 million are sold worldwide. EPS expects to eventually replace all of them with silent, reliable, safe, emissions-free micro-fusion reactor powered electric vehicles with substantially lower production, operating, and maintenance costs.

In addition, EPS has designed a 10kW generator that will operate on clean, non-polluting fuel, and can operate locally. This innovation will potentially improve the lives of most of humanity by making available low cost electricity that anyone can produce in their own homes. It will help literally billions of people. The paper design shows that the EPS generator will be the approximate

size and cost of a 10 kW generator available today in any hardware store, with the advantage that it will not use fossil fuels, but will use clean energy instead.

An article in the Institute of Electrical and Electronic Engineers, Inc., Spectrum magazine over ten years ago stated that world demand for electricity increases approximately 500 megawatts every day. To put this in perspective, the equivalent of another Hoover Dam would have to be built every four days to keep up with world electricity increase demands. The EPS innovation will make local generation possible without the need for more power plants or more power lines.

Major contributors to air and water pollution are the fossil-fueled engines of aircraft, farm harvesters and tractors, ships, boats, snowmobiles, trains, military vehicles, and all-terrain vehicles. Their engines could be replaced with cheaper electric motors and batteries charged by safe, non-polluting onboard micro-fusion reactor powered generators.

Electron Power Systems, Inc., (EPS) is an early stage company working to develop the Electron Spiral Toroid Spheromak micro-fusion reactor. From EPS will come new applications, including a practical micro-fusion electricity generator, a low-cost space launch vehicle, a high-kinetic energy anti-missile beam, and practical zero-emission cars, trucks, buses, farm equipment, construction equipment, military vehicles, and jet aircraft.

EPS is moving to commercialize these concepts. EPS has assembled a team of engineers, and plasma physicists, all as contractors. EPS is working on proof of concept demonstrations for the applications.

EPS plans to build a laboratory demonstration unit in two to three years with present funding levels, and then the first commercial prototype. Recent breakthroughs in the EPS lab give confidence this will happen within this timeframe. More funding will make this happen sooner.

EPS is seeking \$2 million as a first round of investment to complete the development of a demonstration unit in eighteen months. A second investment of \$8 million will be needed to complete a prototype unit in eighteen months after the demonstration unit.

Up until now EPS has had no sales and operates with funding from angel investors, each of whom is retired and has accumulated a substantial personal fortune, allowing these types of investments of high risk, high reward. EPS also operates with funding from the founder.

EPS operates on a low budget, spends only what it has, and has incurred no debt or obligations. In this manner it is able to operate indefinitely, while continuing to make progress each year. Additional small amounts of funding will speed developments.

EPS has made a new discovery in physics with the potential to locally produce low-cost, clean energy for homes and buildings, independent of power plants. EPS owns the new technology and plans to initially produce a safe, clean, 10-kilowatt electricity generator that needs no nuclear fuels nor fossil fuels and will produce no green house gases. A home owner would need a one-liter sized container of environmentally benign hydrogen/boron fuel per year at a 20:1 fuel cost savings compared to commercially produced electricity or fossil fuels.

EPS's new discovery would allow anyone worldwide to buy a small home generator, about the size but less than the cost of a Sears 10-kilowatt portable generator. It would power their home plus

several nearby homes even where there are no power grids or power plants. This will be a step towards providing low-cost, local electricity to help eliminate poverty worldwide.

EPS plans to build 10-kilowatt generators by applying its newly discovered technology to improve work done by others to create energy. The basic work was shown successfully in the 1980s at the University of Miami. But that technology had limitations at that time. EPS's new technology will overcome those limitations.

From a modest start with producing 10-kilowatt micro-fusion reactor powered generators, EPS expects to branch out to other applications of its technology as well as producing larger and larger generators.

Mankind's practically insatiable demand for energy implies a simply humongous market potential for EPS which would encompass all of the world's producers of oil, coal, uranium and electricity plus all manufacturers of transportation vehicles including cars, trucks, buses, farm equipment, ships, boats, construction equipment, trains, satellites, aircraft, snowmobiles, and military vehicles.

Several thousand neutron tubes are in use in the USA today that safely collide hydrogen ions to produce neutrons, which in turn are used for medical testing, industrial process control, and homeland security. An ion source produces hydrogen ions (deuterium), which are accelerated to 110 kilovolts, then directed to hit a hydrogen target (also deuterium), which produces neutrons, and also heat as a waste product. Neutron tubes today produce neutrons and a low level of heat energy. The low density of the hydrogen ions limits the amount of energy produced.

In the 1970's, Dr. Wells at the University of Miami collided two plasma toroids to produce low-level fusion energy in the TRISOPS system. The amount of energy produced was limited by the short duration time of the plasma toroids used, as well as their low density and their low level of energy.

Electron Power Systems, Inc., (www.electronpowersystems.com) has discovered a plasma electron spiral toroid that remains stable without magnetic confinement, by using background gas pressure for confinement instead. These new plasma toroids are observed to remain stable for thousands of times longer than classical plasma toroids, which opens the way for new clean energy applications.

EPS's new stable plasma electron spiral toroids overcomes each of the neutron tubes limitations, and will potentially result in fusion with no magnetic containment required – thus producing a practical micro-fusion reactor. EPS's challenge is to adapt the new stable plasma toroid to the TRISOPS method.

The micro-fusion reactor adapts the Electron Spiral Toroid (EST) Spheromak to the neutron tube design. The EST Spheromak is patented jointly with MIT scientists who also have published papers confirming the EST Spheromak physics and data. The EST Spheromak will overcome the neutron tube limitations by increasing ion density by 2500 times. A metal containment can be used for efficient heat energy collection and conversion.

The EST Spheromak micro-fusion reactor will be less than three feet in length, the same as for present neutron tubes, and small enough to fit in an electric car. Elimination of the need for magnetic containment allows this power supply to be small and compact. A micro-fusion reactor will use hydrogen/boron to produce clean energy without neutrons. The energy in one pound of

hydrogen/boron fuel equals the energy of 250,000 pounds of gasoline. Hydrogen and boron are plentiful and will not run out, as oil is projected to do in the 21st century.

The Electron Spiral Toroid Spheromak (ESTS) is a plasma toroid that is self-organized and self-stable with no magnetic fields needed to contain it. Inventor Clint Seward has not seen any published descriptions of any devices nor phenomena similar to the ESTS. The US Patent Office agrees and has issued five patents.

The micro-fusion reactor was recently selected by the New Energy Congress as one of the few technologies now known to have a genuine potential to replace fossil fuels. See the lengthy analysis of the micro-fusion reactor in http://pesn.com/2006/03/08/9600242_Spheromak_Plasma_Toroid/.

"Locomotive Power Sources" for high-speed rail in www.padrak.com/vesperman includes the micro-fusion reactor with BlackLight Power's hydrino generator, focus fusion, Robert Dratch's thorium powerpack, Kiev, Ukraine's I.N. Frantsevich Institute of Problems of Materials Sciences (IPMS) thorium-227 electricity generator, Clem over-unity vegetable oil engine, thin-film electrolytic cells, noble gas plasma engine, Searl effect generator, Magnatron - light-activated cold fusion magnetic motor, Oleg Gritsevich's hydro-magnetic dynamo, IPMS energy storage/battery device, metamatter which is solid crystallized fully-ionized plasma, Gordon Ziegler's electrino fusion power reactor, and environmental heat engines.

Some of these listed new energy inventions appear to have at least one limitation that is not shared with the ESTS micro-fusion reactor.

The Electron Spiral Toroid Spheromak (ESTS) micro-fusion reactor has five patents and is documented in published papers confirming the physics and data. (1), (2), (3), (4)

Clint Seward discovered the ESTS (5) while studying ball lightning. Seward has developed a secret formula to produce the ESTS that is not reported in any other reference to date that he has seen.

Why this is important is that all spheromaks reported to date dissipate in microseconds, while the ESTS has been observed to endure with no confining magnetic field for hundreds of milliseconds, and theoretically will remain stable for many seconds.

1. Seward, C., Chen, C., Ware, K., Ball Lightning Explained as a Stable Plasma Toroid. PPPS-2001 Pulsed Power Plasma Science Conference, June 2001.
2. D. C. Seward, C. Chen, R. Temkin, Energy Storage Device, US Patent 6,140,752, Oct. 31, 2000.
3. C. Chen, R. Pakter, and D.C. Seward, Equilibrium and Stability Properties of Self-Organized Electron Spiral Toroids, Physics of Plasmas. Vol. 8, No. 10. Oct. 2001.
4. W. J. Guss, Chen, C., Equilibrium of Self-Organized Electron Spiral Toroids. Physics of Plasmas. August 2002.
5. Seward, C., Ball Lightning Explanation, Leading to Clean Energy. Acton, MA 01720. Seward Publishing Co., 2011.

EPS plans to initially produce a safe, clean, 10-kilowatt electricity generator that needs no nuclear fuels nor fossil fuels and will produce no green house gases. A home owner would need a one-liter sized container of environmentally benign hydrogen/boron fuel per year at a 20:1 fuel cost savings compared to commercially produced electricity or fossil fuels.

But first EPS needs to obtain \$2 million as a first round of investment to complete the development of a demonstration unit in eighteen months. A second investment of \$8 million will then be needed to complete a prototype unit in eighteen months after the demonstration unit.

EPS's new discovery would allow anyone worldwide to buy a small home generator, about the size but less than the cost of a Sears 10-kilowatt portable generator. It would power their home plus several nearby homes even where there are no power grids or power plants. This will be a step towards providing low-cost, local electricity to help eliminate poverty worldwide.

From a modest start producing clean, reliable, safe 10-kilowatt micro-fusion reactor powered generators, EPS plans to methodically produce larger and larger generators. EPS even has a preliminary design with supporting calculations for massive 1000-megawatt baseload generators.

Mankind's demand for energy implies an enormous market for micro-fusion reactors encompassing all of the world's producers of oil, coal, uranium and electricity plus all manufacturers of transportation vehicles including cars, trucks, buses, farm equipment, ships, boats, trains, satellites, aircraft, mining equipment, snowmobiles, construction equipment, and military vehicles.

Countries which export oil will benefit from not having to quickly burn up their finite oil reserves on cheap gasoline and diesel fuel. Instead they will be able to draw down their reserves more slowly by making products of higher value such as plastics, medicines, fertilizers and synthetic textiles.

Some years ago a Forbes article stated that PECO (formerly Philadelphia Electric Company), with an income stream to back it up, was able to sell on Wall Street \$4 billion worth of bonds paying 5.8 per cent. A micro-fusion reactor powered generator manufacturer could simply sell bonds to build and operate generators at a low interest rate. Generator loan payback times may be in the ball park of a half-year to a year, depending on the local electricity market price. As soon as a micro-fusion powered generator is paid for, the revenue from that time on would be almost pure profit. Once a track record is established by successfully installing a few micro-fusion reactor powered generators, Electron Power Systems, Inc., could raise money to build and install more generators by simply selling billions of dollars of bonds instead of stock. So therefore, there wouldn't be any dilution of ownership.

EPS plans to partner with major electricity producers and suppliers. EPS will license them to produce electricity as they do now. EPS plans to partner with automobile manufacturers to license the technology. EPS plans to partner with defense and aerospace contractors to license the technology.

MANAGEMENT

Clint Seward is the discoverer of the Electron Spiral Toroid Spheromak and received the initial patents. He has been working ever since to scale up the results, which he has been able to do recently. He has been a project design engineer and program manager for many years, working initially with the US Air Force B-58 Hustler program, and as a project manager and engineering

manager in several major corporations. His work was defense initially, moving to security and process control, then energy related.

Clint was an Engineering Manager for Mosler, an American Standard Division 1970 thru 1978, and an Engineering Manager and VP of Marketing for Bristol-Babcock 1978-1985 – an ACCO fortune 500 Company. He was General Manager of Iontrack, a Division of a large international company 1985-1989 (now a Division of GE). He has been President of his own company Electron Power Systems, Inc. from 1989 to present.

Education: MSEE; University of Michigan 1965; BS at US Military Academy at West Point 1963.

D C Seward is the VP Engineering of Electron Power Systems, Inc. He has worked on the micro-fusion reactor technology since its inception in 1986. He has the responsibility for organizing the experiments and bringing qualified people in to help with the work. DC has worked as the VP Engineering of EPS on a contract basis from 1998-Present as funding allows. He is employed full time as a Field Sales engineer for Ember Systems, a wireless technology company, 2005-Present. Previously he was a Product Design Engineer, Trimble Navigation: 1994-1998

Education: MSEE Massachusetts Institute of Technology, 1994.

Jim Becker is acting CEO and Marketing VP. Jim has experience as a senior executive in the high tech sector with extensive experience managing rapid growth organizations. He has a broad technology background with proven skills in computer systems, avionics industries, and health care information technology along with direct functional experience in finance, sales, marketing, engineering and corporate management in both domestic and international settings.

Education: Thayer School of Engineering, Dartmouth College; Master of Engineering 1976; Master of Business Administration 1975; Bachelor of Engineering 1970.

PAPERS AND PATENTS for Clint Seward:

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ESP's President Clint Seward collaborated with Gary Vesperman in writing a description of Seward's invention in www.padrak.com/vesperman. See "Locomotive Power Sources".

The Products page of www.electronpowersystems.com sells a book "Ball Lightning: Leading to Clean Energy" and a paper "Spheromaks Observed Forming in Atmosphere". Paper's abstract:

Plasma toroids, called spheromaks, are reported here as observed forming in partial atmosphere from high power electric arc events similar in power to lightning ground strokes. The spheromaks are observed to be stable in partial atmosphere with no confining magnetic fields and are observed to last for more than 200 milliseconds in partial atmosphere. This paper describes the observations and presents a model that explains the properties of these spheromaks, which we call Electron Spiral Toroid Spheromaks (ESTS's) due to the spiraling motion of the charged particles. It includes four TV images. The model presented is a hollow toroid with a thin outer shell of electrons that all travel in parallel paths orthogonal to the toroid circumference, in effect spiraling around the toroid. A comparable inner surface of ions acts to neutralize the space charge. The paper provides formulas describing the ESTS. Potential ESTS applications include X-ray production, air defense, and energy production.

The cost to produce a 10-kilowatt EST Spheromak electricity generator would be about \$1100 in production quantities. The EST Spheromak generator would have fewer parts than a comparable Sears generator.

Electron Power Systems, Inc., does not have a working prototype. The company has identified the instrumentation and needs another \$100,000 for laboratory work. With \$2,000,000, the company expects to have in two years a demonstrable prototype. In an additional year for \$8,000,000 a production prototype is expected to be built. Remember, each piece of the project uses technology others have demonstrated.

Clem Over-Unity Vegetable Oil Engine

Richard Clem was a heavy equipment operator who had noticed that a hot asphalt sprayer would continue to run for up to an hour even after the power was turned off! So he built a modified version as a 200-pound engine which ran on vegetable oil at 300 degrees and was started by a 12-volt battery. The heat is internally generated by the engine. During a nine-day test conducted by Bendix Corporation engineers, the engine in its self-running mode consistently generated 350 horsepower into a dynamometer. The engine is constructed from off-the-shelf components except for a hollow shaft and a custom cone with enclosed spiral channels.

If the automobile industry adopts the Clem over-unity engine, motorists could change its eight gallons of vegetable oil only every 150,000 miles and never buy any gasoline. To illustrate the engine's durability, the only working model of the Clem engine has been continually running on his son's farm for several years.

Combining the Clem over-unity engine with the hydrosonic pump could provide distilled ocean water as well as hot water for space heating, kitchens, and bathrooms at *no* energy cost.

The Clem over-unity vegetable-oil engine is not patented. It may be fairly straightforward to set up a small machine shop for manufacturing hollow shafts and cones.

Thin-Film Electrolytic Cells

A number of seasoned technology integrators have developed thin-film energy storage technologies which hold considerable promise. Dr. George Miley, Dr. Robert Hockaday and others have developed thin film technologies with energy densities exceeding 250-400 watt hours per kilogram. Dr. Miley's invention is illustrative. Using a flowing pack-bed type electrolytic cell with 1-molar LiSO_4 in light water, 1mm plastic beads with a very thin [500-1,000 angstrom] film of metal [nickel, palladium, titanium] are employed. A special sputtering technique is used to spray the metals onto the surface of the beads. With 2-3 volts of electrical power and 1.5 milliamperes of current, the single film experiments have shown the material to produce more than 10 times as much output power as input. The input power is no more than 0.01 watts while .5 watt of heat is produced.

It is likely that the physics involved in this reaction involve the release of energy as a by-product of nuclear transmutation. Dr. Miley has written, "The key finding from these studies has been the observation of a large array of "new" elements (i.e., different from the original bead coating), many with significant deviations from natural isotopic compositions, after the run.

Great care has been made to ensure that these elements are distinguished from isotopic impurities by use of a "clean cell" with high purity components and electrolytes, in addition to the pre-and post-run analyses. Even low-energy radiation was detected from the bead days after each experiment. Applications to space power, providing a 1-kilowatt cell with only 500 cubic centimeters of active electrode is predicted." Note that this particular invention, with its large over-unity energy yield, was awarded a NERI grant by the DOE. At the insistent urging of the American Physical Society and representatives from MIT and other universities whose laboratories are currently engaged in high-temperature gas-cooled nuclear reactor research, Secretary Richardson eventually withdrew the grant. The tangle-footed Department of Energy actively discourages the development of new sources of energy, presumably to appease the oil, uranium and coal companies. The U.S. Patent Office has unfairly classified secret nearly 5000 energy patents. Luckless energy inventors then risk 20 years in prison if they work on, sell, or publicize their energy invention – often created at great personal sacrifice.

Searl Effect Generator

The Searl effect generator (SEG) can be used to charge the batteries in a self-powered electric vehicle. A solid-state device, the heart of an SEG is a series of three concentric magnetic rings with magnetic rollers going around the rings. Both the rollers and rings are comprised of four layers of titanium, iron, nylon, and neodymium.

The magnetic fields impressed on the rollers have both AC and DC components. The AC component is for floating the rollers so they don't touch the rings. The DC component is to prevent them from flying off. The innermost set contains a minimum of 12 rollers for the same reason that a linear motor will not operate with less than 12 phases.

The inner set of rollers travel around at 250 miles per hour, the middle set travels at approximately 600 miles per hour, and the outer set at approximately 1500 miles per hour. Hundreds of millions of volts are generated the energy of which is picked up by brushes positioned all around the outside set of rollers.

An SEG also creates an anti-gravity field. An uncontrolled SEG will rise about 50 feet as the rollers increase speed, emit a light blue halo which indicates energy is being extracted from the ether, and then shoot up into the sky gaining speed, never to be seen again. At least one roof has been holed by an SEG. The friction-less rollers can be prevented from reaching the critical velocity that produces lift by use of a “governor”, either mechanical or electronic.

An SEG can be easily controlled by immersing it in an electromagnetic wave field the frequency of which is a harmonic of the SEG’s primary frequency. While in resonance, the magnetic poles of the rollers reach a unification state, and they stop moving.

The inventor has built and flown a small “inverse gravity” vehicle. A flying saucer-like SEG-powered aircraft about the size of a bus is currently being built in England by a private group.

The inventor for some years independently powered his house off the power grid with a home-sized electrical generator version of the SEG. A householder could set up a 45 x 45-cm unit and generate an output of 11 kilowatts of free electrical power.

Oddly, a house powered by an SEG has been observed to have greater healing powers than conventionally electric powered houses. The healing effect is claimed to be due to the electrons zapping the occupants, taking away pain and returning blood more quickly to damaged tissue. The SEG would also help combat asthma, bronchitis, hay fever and lung complaints due to the increased supply of oxygen in the body. Conventional methods of electric power do not pump out electrons which results in tired eyes and a tired brain.

The SEG's negative charge also means that dust stays in the carpet instead of floating in the air. This is similar in action to negative ion generators sometimes sold as air fresheners.

Two Russian scientists replicated the Searl effect generator and vindicated all of these somewhat unusual claims. See their paper “Experimental Research of the Magnetic-Gravity Effects”, V. V. Roschin and S. M. Godin, Institute for High Temperatures, Russian Academy of Science, Izhorskaya 13/19, Moscow 127412, Russia.

At one time, a German power company reportedly considered replacing a nuclear power station with eight fuel-less SEGs costing a total of about \$4.5 million and generating a total of 240 megawatts with no pollution.

Noble Gas Plasma Engine

Joseph Papp was granted US Patent #3,670,494 for his “Noble Gas Plasma Engine”. A mixture of recycled inert gases (helium, neon, argon, krypton, and xenon) is exposed to a high-voltage discharge in a sealed cylinder with a piston. The spark causes the gases to expand violently though no combustion occurs. Mechanical energy is delivered by the piston's displacement. The gases immediately collapse to their original density, and the cycle is repeated. After several thousand hours the gases lose their elasticity and are replaced. The operating cost is 15 cents an hour.

The first prototype was a simple 90-horsepower Volvo engine with upper end modifications. Attaching the Volvo pistons to pistons fitting the sealed cylinders, the engine worked perfectly with an output of three hundred horsepower. The inventor claimed it would cost about twenty five dollars to charge each cylinder every sixty thousand miles.

There were indications that such an engine could provide its own electrical power and being a closed system, require no fuel. It is not by definition an electromagnetic engine, however. It is believed that at the heart of the Papp engine is the development of high-density electrical charge clusters which provide the energy to expand the gases.

Other patents are 5319336, 4151431, 3670494, 4046167 - Mechanical Accumulator, 3680431 - Method and Means for Generating Explosive Forces, and 4,428,193 - Inert Gas Fuel, Fuel Preparation Apparatus and System for Extracting Useful Work from the Fuel.

Magnatron – Light-Activated Cold Fusion Magnetic Motor

During the late 1970's Howard Rory Johnson, a brilliant inventor in Elgin, Illinois, combined light-activated cold fusion with a new type of magnetic motor into a "Magnatron". His prototype Magnatron produced 525 horsepower but only weighed 475 pounds. It could propel a large truck or bus 100,000 miles on about 17 ounces of deuterium and 1.5 ounces of gallium before being recharged. This was years before either Pons and Fleischman or Dr. James Patterson entered the scene with their cold-fusion technology.

Johnson discovered the light-activated cold fusion portion of the Magnatron by accident when as he was developing a new type of electronic circuit using deuterium oxide and gallium, he noticed the two materials were producing energy on their own. He could not figure out what was triggering the energy production for some time until he finally discovered it was light.

The Magnatron's flow of deuterium (an isotope of hydrogen) is controlled by magnetic tunnels. At the point where the deuterium strikes the gallium (a heavy metal electron donor), a beam of light from a diffraction prism forces their fusion. That controlled reaction results in the fusion of two atoms forming a new atom. In the process, electricity is released, and that is what powers the magnetic motor. The Magnatron is sealed, however, so 'light' is provided from photon energy produced from coils tied directly to the motor. It is more or less a pulse-generated system.

A photon is a football-shaped particle of electromagnetic wave energy. Its energy content is a product of its frequency f and Planck's constant h . When an electron in orbit around the nucleus of an atom drops to a lower, less energetic orbit, a photon containing the energy equivalent to the electron's energy drop is emitted. This explains why light and other forms of electromagnetic energy such as gamma rays and radar are sometimes observed as particles and other times as waves. The heated filament of a light bulb is an example of photon production.

There is no way to explain, using contemporary electrical theory, how his relatively small motor could produce such tremendous horsepower. Utilizing his own new electrical-magnetic energy theory, involving a process he called "attract-attract", Johnson exploited the magnetic field. He used the top and bottom rotors in his motor. First, the top rotor attracted, released; then the bottom rotor attracted, released. The action of attraction, alternating between upper and lower magnets, used the windings to complete the attract field.

Robert Nelson's compilation of articles about the Magnatron provides much more technical detail on the Magnatron than the foregoing. (See <http://www.rexresearch.com/magnatron/magnatron.htm>.)

Johnson constructed his prototype Magnatron's 525-horsepower magnetic motor without any of the hardware that is presently used in present state-of-the-art electric motors. Conventional motors use the accepted principle of attract-repel, an energy form that doesn't utilize the magnetic field to its greatest advantage. For comparison, a typical 500-horsepower electric motor has wires exiting it that are the size of a garden hose.

The sealed self-contained Magnatron has no wires. Thus, other than the Magnatron's infrequent refueling with small amounts of deuterium and gallium, the stand-alone Magnatron uses no input power. The Magnatron's entire output power is conveyed by its magnetic motor's rotating shaft.

Fuel for the Magnatron is plentiful: deuterium is derived from water, and gallium is extracted from abundant aluminum bauxite. Commercially available pure gallium is still scarce and expensive. It may well be possible, however, to cheaply transmute another less expensive element into gallium. See Gary Vesperman's list of over two dozen methods of neutralizing radioactive waste in <http://freeenergynews.com/Directory/NuclearRemediation/Vesperman/> which includes possible transmutation methods. Additional methods are briefly described in <http://freeenergynews.com/Directory/NuclearRemediation/>. Dr. Santilli's method plus an explanation of suppression of radioactivity neutralization methods are available at <http://www.nuclearwasterecycling.com/>. Robert A. Nelson's survey "Transmutations of Nuclear Waste" is at <http://www.rexresearch.com/articles/nukewa.htm>.

The Magnatron uses no fossil fuel in its operation, and it emits no pollution. The magnetic motor's RPM is 8,000 with a gear ratio of 2:1. Lubrication for the sealed motor is synthetic motor oil which does not need changing and does not need a filter, because foreign materials such as carbon and varnish are not introduced into the system, as they are in the internal combustion piston engine.

This writer, Gary Vesperman, attended the 3rd International Symposium on New Energy in Denver, CO (April 25-28, 1996). I remember being impressed by Gerald Orłowski's lecture "Magnatron, Fusion Magnetic Motor", during which he provided substantial technical information on the Magnatron.

Orłowski reported that, "Some inside information revealed that OPEC had been keeping track of all competitive technology", and Johnson was #1 on their hit list! Johnson was about to manufacture the motors through a nationwide dealership. Some motors still exist, but the owner wants several million dollars for them."

This writer Gary Vesperman knows of very few inventions of new energy sources which are reasonably large stand-alone energy producers. Besides the Magnatron, they include Oleg Gritskevitch's hydromagnetic dynamo, and Electron Power Systems' micro-fusion reactor, which employs stable high-density plasma electron spiral toroids. Almost all inventions of new energy sources are, or claimed to be, relatively small over-unity power converters that convert input power to greater amounts of output power. Bob Dratch's thorium powerpack is an exception (see above).

At the September 14, 2005 public meeting in Green Valley Ranch casino regarding the proposed Regional Fixed Guideway traversing Las Vegas, Nevada, this writer Gary Vesperman submitted comments suggesting possible power sources for the train, including descriptions of the hydromagnetic dynamo and the micro-fusion reactor (<http://www.rtcsonthernnevada.com/rfg/documents/September2005PublicMeetingMinutes.pdf>, pp. 19-77).

No wonder the Magnatron's inventor, Rory Johnson, was rumored to have been "Number One" on Organization of Petroleum Exporting Countries (OPEC)'s hit list.

The following is an excerpt, slightly edited, from Orlowski's lecture transcript where he tells about his unwitting personal involvement with the U.S. Government's suppression of the Magnatron:

"After I saw the Magnatron motor, my life changed. I was no longer a happy camper working by myself in a wonderful, fully equipped research machine shop for the Greyhound/Armour Corporation in Arizona. While on a business trip, I saw this motor running in the Magnatron, Inc.'s showroom located in Elgin, Illinois.

"During my 15 years of electric motor repair, among the hundreds of motors I repaired, I rewound a 500 HP electric motor. That motor had wires exiting it that were the size of a garden hose. The Johnson motor being shown had NO wires. Surely this motor was unreal, a con-job to get money for dealerships. Yes, there he was, Rory Johnson standing next to his sealed self-contained electric motor.

"Upon returning to the Greyhound Towers and telling them what I had seen, they instructed me to call Mr. Johnson. Greyhound wanted Johnson to put forth a plan to install a motor in one of their buses for testing purposes.

"I called Johnson. He was delighted that a Greyhound employee had seen the motor running, and replied that the testing idea was acceptable. He would set a time frame for just when a bus should be delivered to him.

"Two years went by, with no business proposal from Johnson. Then, his former business partner, Mike Marzicola, called to say Johnson had passed away. He wanted me to work with him to get one of the motors running. I flew to Orange County, CA, saw the motor, took pictures, and put forth a plan to Greyhound. Subject to a contract with Marzicola, one of the old worn motors would be brought to the research shop. I would then very carefully reconnect the generator wires that Johnson had cut off prior to moving from Elgin, IL to California.

"Discussions with Marzicola brought out that the U.S. Government (given the authority by the Congress of 1952) had issued a GRAB order to take Johnson's motors. Rumor has it, the DOE is run by US oil companies and OPEC, and they want no competition, period. Because of this grab order, Johnson had cut the generator wires. He had then put his 'total shop', with motors and all, on several U-Haul trucks and left Illinois in the middle of the night. He went to California to re-establish his business. But before he could get a motor running, he passed away.

"Surely, Greyhound would agree to let me re-start one of Johnson's motors. The wonderful proposal put forth to Greyhound was rejected by mail. Very agitated, I went to the top office at Greyhound demanding an explanation. I was met at the door with the comment, "We know why you are here." Knowing the potential savings to the bus company, surely they could have only one reason for rejecting the proposal. They must have believed I was not qualified to start up the motor.

"Greyhound's top legal advisor stated he was present when the Greyhound board met and discussed my written proposal. He stated the following, "At NO time was the thought put forth that you would not succeed. In fact, we discussed all of the hardware designed and constructed by you, and started the conversation from what happens when Greyhound has a running motor. We contacted a State representative who felt this motor should not be allowed to be used in 4,000+ buses. The loss in tax

dollars for fuel alone would be a very huge sum.” He then asked me to leave, stating he was sorry that he had to tell me the reason the plan was rejected.

“Telling Marzicola of the rejection, I offered to personally put in a few thousand dollars toward the parts to get one motor running. In return, I would be assigned the dealership for the Phoenix metropolitan area. We signed legal papers in exchange for the money agreed on, and went to work. (I still have the signed dealership.)

“The first thing I noticed was that someone had been working on repairing the motors. Three motors already had new commutator assemblies installed. Each assembly consisted of 3 commutator assemblies on one insulated tube with a metal case to secure it to the shaft.

“One motor still had the old worn commutator assembly, as it had not yet been repaired.”

Orlowski goes on to describe his reconstruction efforts and includes interesting technical details about the Magnatron’s structure and theory.

Johnson did not know that OPEC tracks all potential competition to its oil business and that he was reportedly number one on OPEC’s hit list. His first mistake was publicizing, in many magazines, his plans to manufacture and distribute his revolutionary motor.

Erik Masen has spoken with a few people who even signed up for distributorships. Erik Masen had included Johnson and his Magnatron in his energy invention suppression anthology (see http://www.electrifyingtimes.com/erik_masen_suppression.html).

In 1979, Johnson placed his engine in a Buick Electra and was preparing to drive it around the country to sign up more distributorships when the US Department of Energy and the State of Illinois teamed up to prohibit his company Magnatron, Inc., from producing and selling Magnatrons. They first placed a gag order on all the people in the company by using the Secrecy Act of 1952.

Secondly, the State of Illinois immediately requested the company to provide information about all of their employees, distributors, stockholders, investors, suppliers, etc. They asked questions that blatantly deny anyone’s constitutional rights to privacy. The pressure from the State of Illinois became so overwhelming that Johnson decided to move his entire business to California in the middle of the night.

After a year of hearing nothing but silence from Johnson, Greyhound agents tried to contact him – only to be notified that he had passed away unexpectedly. This is a particularly troubling part of the story, since he had been in his early fifties and in robust health. Later, Greyhound learned that shortly before he died, Johnson had inexplicably moved out of his laboratory in the middle of the night and taken all of his motors and technology to California.

Bob Bass, in his report copied below on low-energy nuclear transmutation, claims that the CIA, the KGB and the Mossad, etc. all have "sprays" which can be sprayed upon someone and cause him or her to die of apparently natural causes. One speculation is that Johnson’s death – apparently due to heart failure – had been artificially induced by such a spray.

In a January 20, 2007 email to Gary Vesperman, Terry Sisson reports:

“Hi Gary,

“I visited Magnatron, Inc., in July 1979. I wish I would have taken a photo. Placards were placed over every inch of the large windows in the front of the building listing all of the questions the State of Illinois requested his company to provide. He wrote, “When has the government ever had the right to ask this of any company.” I peeked in the front window and saw one of his motors mounted on an engine stand. Nobody appeared to be there so I walked around to the rear of the building. I found the rear garage door open and could see the Buick Electra inside. I was about to approach nearer when a man emerged. We talked, but he quickly informed me that due to a US gag order he was unable to talk about anything. I managed to get his phone number and called him from time to time for years following. He was an assistant of Rory’s and he kept the information very close to the vest. He did tell me that it was real and it worked, yet not how it worked.

“About 1984, I began to call all the Johnsons in the phone book in Elgin. I finally got a hold of Rory’s son. He too said that it was real, but I got nowhere. Around 1992, I met Jerry Orlowski, and he told me his experience as the employee of Greyhound who was sent to investigate the technology, since he wound electric motors for several years. Jerry was very upset about the whole incident, particularly Greyhound’s Board of Directors refusal to utilize the technology after he found the technology to be authentic. Jerry even witnessed the government’s seizure of the motors in California. --- Terry Sisson.”

Hydro-Magnetic Dynamo

The hydro-magnetic dynamo is a doughnut-shaped large-scale emission-free electrical generator which does not require external fueling and operates safely, reliably and silently at moderate temperatures. The dynamo is capable of powering larger transportation vehicles such as buses, trucks, ships, locomotives, and airplanes. Doubt remains about making dynamos compact enough to power automobiles.

The circumstantial evidence for the Russian inventor’s performance claims for his hydro-magnetic dynamo is reasonably strong. While three experimental prototypes have been built with Russian and Armenian expertise and equipment, a fourth demonstration prototype needs to be built with more modern Western engineering expertise and equipment to verify dynamo performance claims and to further explore the dynamo’s potential capabilities. Performance claims are as follows:

Hydro-magnetic dynamos are scalable from 100 kilowatts to 1,000 megawatts. One doughnut-shaped, fuel-less 1000-megawatt dynamo is about the size of a two-car garage. For comparison, Hoover Dam’s 17 generators have a total nameplate capacity of 2,080 megawatts. Seven 1000-megawatt dynamos can be vertically stacked to comprise a single 7000-megawatt dynamo.

A dynamo can reliably run continuously for 25 years or more with little or no maintenance, no external fuel source, and no pollution. If a dynamo’s output is 1,000,000 watts, its total input power is approximately 10,000 watts. So the dynamo’s energy efficiency is 10,000%, or 100 to 1.

The source of the dynamo’s massive electrical output is a nuclear reaction which is not generally known to mainstream science. However, it is known that the dynamo produces alpha particles which are helium nuclei made from fused deuterium, an isotope of hydrogen with one proton and one neutron. The electrons missing from the helium nuclei are what seem to provide a copious “sink” of electricity, and which happen to be the secret to the dynamo’s ability to generate an exceptionally large amount of electricity.

It is also known that the dynamo uses high-density charge clusters. High-density charge clusters are the basis of plasma-injected transmutation of elements and also neutralization of radioactive materials.

There were three dynamo prototypes built. The first two small experimental prototypes were built in Vladivostok. The third and last prototype continuously generated electricity, except when turned off to incorporate improvements, from 1992 to January 1997 in Armenia. (It was sadly destroyed during an armed rebellion by local religious fanatics who were unhappy with the Armenian government.) It generated a constant current of 6,800 amperes at 220 volts DC. That multiplies out to nearly 1.5 megawatts. The Armenian prototype dynamo's toroid weighed 900 kilograms and had a diameter of approximately 2 meters.

Cooling water is circulated through copper pipes wrapped around the toroid. The heat is expelled from the cooling water with a heat exchanger.

After a dynamo is assembled in a factory, the water is literally jump-started (by discharging a large bank of capacitors) to moving around the toroid. The dynamo's controls are temporarily set to generating enough of a modest amount of electricity to sustain itself, even while being transported from the factory to its site. For the Armenian prototype dynamo, two 10-farad capacitor banks (from Russian military radar stations) were used to provide the initial water motion (acceleration and excitation of water). Using a total of 20,000 joules, 100,000 volts with 0.05 amperes of current were applied to the Armenian dynamo for 3 - 5 minutes for starting its generation of electricity.

After these Russian radar capacitors were used to jump-start the Armenian prototype dynamo, a bank of buffer batteries sustained continuous operation when water motion and ionizing occurs. This battery bank contained 8 powerful 12-volt, 150-ampere lead batteries. The Armenian dynamo's sustaining input power was 14,400 watts. The nominal maximum output power is nearly 1,500,000 watts. Once, the output current was accidentally increased to 40,000 amperes for almost a minute. Fortunately, the power was reduced to a safe level before the water started to boil. Internal coils (windings) control water velocity and therefore dynamo power.

The dynamo's production cost is estimated at \$500 per kilowatt which is competitive to nuclear power's capital costs of \$5,000 per kilowatt, windmill capital costs of \$4,000 per kilowatt, etc. A well-run nuclear power plant can generate power for 1.5 cents per kilowatt-hour, coal 1.8 cents, natural gas 3.4 cents, and oil 4.1 cents, on the average. The dynamo's operating cost would be approximately .1 cent per kilowatt-hour with no external fuel needed nor pollution.

Dynamos could replace all nuclear power plants, solar installations, wood-burning furnaces, hydro-electric dams, windmills, fossil-fueled power plants, etc. Satellites, locomotives, heavy trucks, buses, airplanes, and ships are obvious transportation applications. It does not seem that dynamos can be made compact enough to power electric cars although it certainly would be worth trying.

A Forbes article states that PECO (formerly Philadelphia Electric Company), with an income stream to back it up, was able to sell on Wall Street \$4 billion worth of bonds paying 5.8 per cent. A dynamo manufacturer could simply sell bonds to build and operate dynamos at a low interest rate. Dynamo loan payback times may be in the ball park of a half-year to a year, depending on the local electricity market price. As soon as a dynamo is paid for, the revenue from that time on would be almost pure profit.

Once a track record is established by successfully installing a few dynamos, the dynamo company could raise money to build more dynamos by simply selling billions of dollars of bonds instead of stock. So therefore, there wouldn't be any dilution of ownership.

A recent IEEE Spectrum article stated that world demand for electricity increases approximately 500 megawatts every day. To put this in perspective, the equivalent of another Hoover Dam would have to be built every four days to keep up with world electricity increase demands. Or, a dynamo manufacturing company would have to build another 500-megawatt dynamo every single day of the year to keep up with world electricity increase demand in addition to replacing all existing generators fueled by hydro, nuclear, and fossil fuels.

The following is a highly condensed summary of the "Description" of the dynamo's Russian patent IPC H 02 K 44/00 "Method of deriving of electrical energy and organization of Gritskevich's MHD-generator for its realization":

The dynamo is a sealed toroid filled with distilled water with heavy water (deuterium oxide) added. Movement of water inside the closed loop and use of unique properties of water as a polar liquid cause a release of electrical energy as an outcome of a rupture of hydrogen connections. Additional electrical energy is drawn from nuclear reactions and micro-cavitational processes. The liquid gets ionized and moving around the toroid at start-up time by a running magnetic field with the help of stimulating electromagnetic windings.

A layer of segnetoelectrical material covers the internal surfaces of the toroid. 32 electrodes made from a hard-alloy material are inserted into the toroid at equal distances apart. These 32 electrodes are connected to a power supply. Additional stimulation windings are also connected to the power supply.

The partially pre-ionized (on the part of the heavy water) water gets ionized further by the high-voltage discharges by the 32 electrodes. With the help of the stimulation windings, a running magnetic field is created which moves the water in one direction inside the toroid. An electromotive force gets created by the electromagnetic induction in a separate set of windings. During the movement of the water stream free electrons get created, and an additional energy gets emitted because of the water's friction (viscosity) against the layer coated on the inside surface of the toroid, because of electrostatic breakdowns of cavitational-vacuum structures, and because of the ongoing nuclear reaction. 100 times as much electrical energy is generated as required for electrical energy input.

Note that the hydro-magnetic dynamo is always producing electricity once it is manufactured and jump-started at the factory. Whenever a locomotive is parked in sub-freezing weather, its hydro-magnetic dynamo's electricity output would be used to heat the dynamo's containment to prevent its water-filled toroid from freezing.

Whenever a locomotive is parked, its hydro-magnetic dynamo's excess electrical output could be sold to the local power grid.

IPMS Energy Storage/Battery Device

During the summer of 1984, airborne intelligence surveillance teams of the United States Air Force, operating out of specially configured and equipped Boeing 707 airframes (called AWAC's) electronically detected (and then shortly thereafter photographed) bursts of coherent light of

enormous power originating in the vicinity of Dushambe, Turkministan. The bursts of light, a brilliant blue-green color, lasted just a few seconds and were shifted almost to the ultraviolet end of the light spectrum. The “laser” beams were directed upwards out of the atmosphere towards American military communications satellites.

At precisely the same time the AWAC’s detected and photographed the laser bursts (they were referred to in that jargon by American military analysts but later proved to be something almost entirely different), several of the satellites essential to America’s global military command and control communications systems became inexplicably inoperable.

The Defense Intelligence Agency, under the direction of the National Security Council and assisted by the National Security Agency, escalated its surveillance of the remote site in the Ural Mountains from which the bursts first originated. For several months, during a concerted campaign of uninterrupted observation by AWAC’s and American spy satellites, no additional bursts were observed or reported. Then, without warning, in the middle of the night nearly seven months later, AWAC’s crews operating just outside the territorial airspace of Afghanistan detected similar laser bursts of lower intensity during a period of intensive localized ground warfare.

The Afghanistan bursts were apparently aimed at targets under attack by Soviet infantry units. The laser bursts continued in a sustained, localized but obviously mobile attack pattern, as frequently as four or five times per hour, until nearly sunset of the next day. Photographic evidence gathered at the time by the AWAC’s crew, and later corroborated by photographs taken at the actual site of the fire fight and forwarded to the U.S. for analysis, showed that the targets of the laser bursts were ammunition and fuel supply depots located in the remote desert. Several of the ammunition and fuel caches had apparently been destroyed during the attack, as demonstrated by the evidence of explosions, fire, smoke and residual infra-red heat patterns detected, photographed and electronically recorded on-board the AWAC’s.

All this information was transmitted (via encrypted communications bursts, routed through the military Global Command Control satellite system) to the National Security Agency (NSA), located at Fort Meade, Maryland. Analysts there recognized that they were looking at evidence of a weapons system which had never been observed before. They did not know what had produced the laser bursts. But they did know that the technology which made such a thing possible was not available to the countries participating in the NATO Convention. They were terrified at the implications of such a development.

Within hours, the information was packaged into classified documents and conveyed to the Joint Chiefs of Staff. The Joint Chiefs examined the information while they were being briefed by the AWAC’s crews which had witnessed and recorded the events. After the briefing, the crews were dismantled, and their various members stationed far away from one another, with orders never to discuss the events they had witnessed. Officially, the laser bursts never had occurred.

Secretary of Defense Frank Carlucci took delivery of the packet at his residence in Falls Church, Virginia, three days later, at a private, secret meeting held in the middle of the night. No one has yet adequately explained why the Joint Chiefs waited three full days to brief the Secretary. Early the next morning, he was driven in a specially prepared bulletproof limousine to the White House. He personally delivered the information to the new President of the United States, Ronald Reagan. The content of the Secretary’s report had an immediate, measurable impact.

It was this series of events which principally precipitated the Strategic Defense Initiative, a program of military defense and reprisal based on America's state-of-the-art satellite-borne laser-optical and particle accelerator technologies. The S.D.I. system was intended to provide the U.S. with a meaningful deterrent to further aggressive use of the technology developed by the Soviet Military.

There was only one problem with this system, aside from the fact that its astronomical costs almost bankrupted the American economy: it did not work. S.D.I. was designed to respond to a kind of technology which was not achievable in the West, and which could not be explained by any of the models, materials, technologies or sciences known in the West.

In 1985, the top-secret military version of the space shuttle, code named Atlantis, embarked on a special orbital mission. One of its mission assignments was to retrieve, examine or photograph the military spy satellites which had been disabled by the laser bursts recorded in 1979-84. The results of this investigation have not been declassified or released in any but the most censored version to the public. What we do know for certain, as a matter of publicly available non-classified information, however, is that each of the disabled satellites appeared to have had at least one, and in some cases as many as four or five precisely measured holes, approximately the size of an American silver dollar, melted completely through them from the outside.

The photographs taken of the satellites show evidence of intense heat, charring and carbonized residue evenly distributed around the perimeter of each hole. The evidence is clear and unmistakable – the satellites were disabled by a coherent beam of some sort, characterized by such intense energy that it was possible to melt consistently measured holes through the exterior and interior components of American military satellites, after having passed through the atmosphere of the planet and into space for as many as 325 miles. Such a thing has scarcely been dreamed of by the American military, much less put into any but the most nominally effective operational form.

After more than ten years of political, economic and technological wrangling, and after the expenditure of more than one hundred twenty billion dollars in largely ineffectual research and development efforts, it is inescapably clear that no amount of money or political pressure, no amount of geo-political posturing or economic sanctions was going to compel the disclosure or replication of the technologies which produced the results photographed over the Carpathian Mountains and the Afghanistan deserts. The Soviets had developed a weapons system which was so revolutionary that it could not be explained, replicated or defended against.

The Reagan Administration's lack of specificity about the nature of the implied threat to which S.D.I. was supposed to respond subjected the Administration, the Defense Department and the R&D proponents of the most prominent American aerospace corporations to an endless barrage of charges by the Press and the Congress. They were characterized as being disingenuous and accused of being unreasonably secretive during successive appropriations battles in the Congress.

The truth of matter is that the Administration and the Pentagon were not being disingenuous at all. They simply could not admit to the American public that they were attempting to develop an effective response to a weapons system which they did not understand and could not replicate.

There are a number of issues intrinsic to this set of circumstances, along with several dozen others which, though less well known or economically dramatic, are no less important from a technological standpoint. It is certain that the implication of these technologies has not been lost on those multi-national corporations whose entire capital structure may be threatened by the new

sciences, technologies and materials which have been developed in secret laboratories, hidden in caverns excavated beneath the Carpathian Mountains, in the former Soviet Union.

Over the past decade the West has enjoyed occasional gratuitous glimpses into the heart of Soviet science. Attempts to disclose or discuss these developments in the press have been ruthlessly suppressed by powerful special interests vested in both the public and private sectors.

The science which underlies the series of events recounted here remains at the outer limits of the most advanced technology of which the West is capable. The questions posed by the military and corporate analysts about this laser beam weapons system are far-reaching in their scope and implications. Some of them are illustrative:

1) New Model of Quantum Mechanics: The sciences and models of quantum mechanics which produced such stunning recent developments in the West as the laser and maser make quite clear how much energy is required to create a beam of coherent light powerful enough to penetrate the atmosphere, retain its coherence in spite of atmospheric diffraction (and other effects described in quantum mechanics as “thermal blooming”), and melt a two-inch hole clear through a satellite made of the most sophisticated alloys ever produced in the West. Except for limited short-distance demonstrations conducted with industrial grade lasers used in cutting operations, there is no known combination of materials or technologies extant in the West to make such a thing possible.

2) New Materials: The materials necessary to create an electrical charge large enough to power a device capable of producing such a beam certainly do exist. In quantum mechanics the term large enough does not make sense, but we can agree for the purposes of this discussion on the effect of it as represented by such commonly accepted constructs as frequency, voltage, current and ionic flow rates [as distinguished by the phenomenon of resistance].

Hydroelectric plants and large, fixed-base nuclear power plants are capable of producing enough energy to theoretically power such a device. But the energy bursts in both the Carpathians and the Afghan desert were generated by sources which moved from one location to another. In order to do that, several additional considerations must be addressed:

a. Portability: The power source would have to be transportable or be capable of storing sufficient energy to repeatedly power such a device. Western technology cannot produce either a portable power production unit or energy storage system capable of the performance requirements everyone agrees must be met to make the weapons system work, either in the laboratory or in the field. System portability was the most puzzling feature of the NSA/DIA report.

When carefully analyzed, the computer-enhanced enlargements of the photographs taken by the spy satellites and AWAC’s crews failed to provide evidence of any tracks which could be attributed to wheeled or tracked vehicles operating in the precise locations and at the same time as the laser bursts which were observed. The implications of this set of circumstances was almost too much to believe – the devices were apparently either hand held or transportable and rechargeable in such a way as to allow them to be transported by one or more foot soldiers, without vehicular support.

b. Enormous Power Requirement: The materials and technologies used to construct a device capable of generating a beam of such enormous power and magnitude would have to be sufficiently advanced to enable the components to be transported without damage over significant distances in unpaved areas of very rough terrain. Such strategies, engineering techniques, construction technologies or materials do not exist in the Western inventory.

c. The continuous repetition of the laser bursts suggests that the devices can be operated repeatedly at short intervals of 12-15 minutes. This means they can be triggered with significantly higher frequency and intensity than anything which can be produced in the West, even for laboratory use. Industrial strength lasers used to cut metals require careful setup, accommodate only limited use in short bursts, require extensive cooling and must be continually recalibrated. These limitations obviously did not apply to the devices being operated in the Afghan desert. Analysts at AMTL agreed that the units would either have to be recharged via an external, independent device or somehow be capable of self-recharging in the field.

Such a thing is almost unthinkable by current Western military standards. Not only can we still not replicate the technology in any meaningful form, but the Soviets had refined the technology to a point which allowed it to be carried on the shoulders of ordinary foot soldiers and recharged in the field without motorized support.

Unbelievable! How was such a thing possible? According to some of the highly qualified scientists who scrutinized the photographs, it is not possible. The “Not Invented Here” syndrome is alive and well in the American engineering community. Some of them still insist that the pictures were either fabricated or demonstrate something completely different than this narrative suggests.

3) Energy Recharge-Batteries: How did such high-intensity laser beam generators get recharged in the middle of the Afghan desert, in the absence of powered support vehicles or fixed-based power plants? There are a number of possible alternatives. They could have been powered by some sort of advanced battery technology. It’s possible, but if the battery technology used in the West is used as a model to support such a thesis, it would take a bank of the most sophisticated batteries ever designed by NASA, arrayed in series and parallel configurations larger than five full-sized Soviet T-60 tiger tanks to power such a device.

This theoretical battery bank, operating at 100% efficiency (which is not practically or theoretically possible; the best batteries manufactured in the West operate at less than 60% discharge efficiency), could conceivably produce enough direct current voltage (in a zero resistance super conductive circuit, which is not possible, either) to perhaps produce one burst of light equal in intensity to 20% of the power required to burn a 2-inch hole through a satellite moving at 20,000 miles per hour at a distance of 325 miles.

Soviet ground forces were generating bursts of this magnitude every 12-15 minutes for more than 10 hours with nothing but ground troops. During eight hours of this exchange, it was totally dark. Something pretty remarkable must have been going on to make such a thing possible.

4) Energy Recharge – Solar Cells: Another alternative would have been to have whatever energy storage devices were being used to power the “laser cannons” recharged by sunlight. The state-of-the-art in photo-voltaic cells produced in the West simply would not support such an undertaking. The very best solar cells ever produced in the West have been produced by the Japanese.

These cells operate at a maximum of 19% efficiency - that is, they convert as much as 19% of the ambient visible sunlight shining on a clear, cloudless day into ion flow, which then becomes low voltage direct electrical current flowing through a circuit. The Japanese panels require months per section to manufacture and literally cost more than their weight in gold to manufacture. They are very heavy and are so sensitive to vibration and calibration that once installed, they cannot be moved at all.

Photo-voltaic cells capable of providing enough electricity to recharge a theoretically infinite energy well would have to operate at efficiencies of 50-80% to recharge batteries of infinite electrical capacity with enough power to trigger such a device. Such cells would have to be very light weight and able to withstand extremes of heat, cold, vibration, dust, wind and other conditions encountered in a hostile battlefield environment. Nothing like that exists in the Western technological arsenal.

5) Dielectric Materials – Transformers and Capacitors: Another consideration must be reconciled before this issue can be theoretically put to rest. In order to produce a burst of coherent light of sufficient intensity to have the effect which was observed and recorded by the surveillance teams, the voltage and amperage required to support such a device would have to be staggeringly high. In order to operate at all, the voltage supplied to the system must be released all at once, not in a continuous stream but in a single coherent burst so intense that any materials known in the West would either evaporate or melt. Not only would the best dielectric materials known to Western Science melt because of the heat produced by such enormous energy bursts, but before a bolt of energy of this magnitude could even be released to such a device, it would have to be accumulated and stored somehow.

A similar set of requirements of a less dramatic type is present in all the electronic devices manufactured and marketed in the West. This includes the entire range of electronic devices such as VCR's, computers, televisions and sound components, telecommunications, information storage, transmission and retrieval systems of every kind. We could not live as we do without them. The components which convert, store and release ion flow into the circuitry of these devices are known as transistors, transformers and capacitors.

This discussion delves into a slightly technical area here, so non-scientific types will need to either become familiar with the fundamentals of electricity to understand what is meant or simply give it a possibility that what is developed in the next section is a true representation of the way such things actually operate. The discussion deals with such commonly used and seldom understood concepts as voltage, current, frequencies and resistance.

(a) Transformers convert voltage at one level of current (amperage) to either higher or lower voltage levels. When the voltage is increased, the amperage or current is proportionately decreased. A low voltage produced at a high current level can be transformed into a much higher voltage at a proportionately lower level of current or "power."

(b) Capacitors: The decrease in amperage which accompanies a transformation of low voltage to higher voltage is often compensated for by a device known as a capacitor. In the most simplistic terms, capacitors "store" electrical energy until the amount of voltage and current reach a certain minimal threshold. When that point is reached, the entire store of energy is released all at once in a single burst.

The tantalum materials used in the West to manufacture such devices conform to certain standard rules which are commonly accepted by electrical engineers. These rules have only recently been stretched by new technologies and materials developed in the West. For the purposes of this discussion, though, it is safe to say that electrical engineers have long relied on these rules because they have always produced the same results when applied in the same way. Here's an example.

It is standard engineering fare which dictates that a transformer capable of accommodating one volt at one ampere of current across a grid of one ohm of resistance will be one cubic meter in

dimension. If followed to its logical conclusion, this standard rule of electrical engineering would require that a transformer capable of supporting a laser burst device of the kind operated by the Soviet ground forces in the Afghan desert would have to be approximately the size of a building built on a base 100 feet to a side, nearly 150 feet high.

Surely such a device could not have been hidden from the AWAC's eye in the sky which can clearly photograph the letters on a license plate from 60,000 feet altitude, nor could it have been moved on the shoulders of ground troops without wheeled vehicular support. The fact that there was absolutely no trace of such a huge, massive transformer device (or any other kind of structure or vehicle which could be construed to serve that purpose) means that something else must have been used instead. Military analysts had absolutely no idea what it could have been.

Such a burst system cannot operate without a capacitor of some sort. A capacitive device capable of storing the amount of energy required to power a single burst from a laser cannon, made of the most advanced dielectric material known in the West, would have to have been equally massive and, further, would have to have been cooled by some sort of strategy which would have been instantly and unmistakably detected by the infrared cameras and spectroscopic scanners used aboard the AWAC's and the spy satellites which investigated the scene.

The practical requirements of such a system are best demonstrated by the massive equipment required to operate and cool the Super Conductor Super Collider linear particle accelerators recently designed by the United States and Japan. No evidence of any such capacitive device was recorded in either the Carpathian Mountains or the Afghanistan desert. How can we explain it?

Without going into any detail about how the technologies were developed, suffice it for now to say that the Soviet ground forces in Afghanistan were equipped with a prototype of a hand-held plasma beam accelerator, the likes of which had only been roughly imagined by American military analysts. The device relied on some innovative strategies. Among these were:

Energy Storage Devices: The power source for the Soviet light cannons was comprised of a back-pack array of specially designed energy storage devices. The closest thing we have in our vocabulary to compare to them is described by the term "battery." In the limited sense that these devices store electrical energy, they are batteries. Any other similarity to the batteries we are accustomed to in the West ends there. The literal translation of the Russian name for them is energy accumulators.

The batteries relied on in the West are based on the chemical properties of components which, when combined in certain configurations and proportions, interact chemically with one another. The result of this chemical interaction is that it creates both heat and a stream of liberated ions – electricity. In dry cell batteries, the process of chemical interaction is one way – once they have been expended, they are simply disposed of. It is estimated that more than 12 billion expended dry cell and lead-acid batteries are dumped into America's landfills every year.

Other batteries are designed and constructed so that the chemical reactions which liberate electrical current are reversible in some degree. These rechargeable cells are characterized by the lead-acid batteries which are used in automobiles and in commercial and industrial applications. Various strategies have been developed to make batteries relying on chemical reactions maximally effective, but the theoretical limits of effectiveness of such devices have surely been reached.

A consortium of aerospace companies working with NASA recently announced the development of an advanced sodium-hydride-based rechargeable cell which is the most efficient battery yet invented in the West. Unfortunately, it operates at an ambient temperature of 2000 degrees centigrade and, if allowed to reach temperatures outside a very narrow safe operating zone, will explode with the force of a small thermo-nuclear device of approximately ten-kiloton yield. It is not safe, but it is the best Western science has come up with.

The energy storage device developed by the I.N. Frantsevich Institute for Problems of Materials Science (IPMS), Kiev, Ukraine, works on a completely different principle. Its construction is the result of a completely unique nonlinear quantum mechanical model which makes it possible to create crystalline lattices of absolutely pure carbon (and other materials) in sheets of infinitely variable dimension which are exactly one molecule thick. The crystal formation techniques and the whole body of new science which allows for their creation in the first place are completely unknown to Western science.

The mono-molecular sheets deposited by this technique are wrapped back and forth on top of each other, more than one million times per millimeter, and are separated from each other by a distance of less than one atomic diameter. At this level of construction, the material becomes subject to the rules of quantum mechanics which are almost entirely probabilistic. That means a whole atom of carbon (or almost anything else except an electron or photon) will not fit in the space which separates the lattice sheets.

When viewed under an electron microscope, the sheets produce a pattern which looks for all the world like an endless field of four-sided pyramids, connected base to base, on a single plane, with the tips of the pyramids protruding endlessly, uniformly upwards. When wrapped back and forth on top of each other, these sheets of pure carbon crystal, made of carbon molecules shaped like trillions of identical tiny pyramids, all arrayed endlessly in identical formation, are positioned so that the tips of the pyramids on the bottom sheet are matched with the tips of the pyramids on the top sheets. What remains between the pyramid tips are open “spaces” or energy wells.

The quantum physics which describes the characteristics of the energy wells created between the layers of crystalline lattice is largely unknown to Western physicists. The Soviet model predicts with a high degree of probability that the quanta of energy referred to in the West as electrons (and, in some cases, photons), the stuff of which electricity is made, will, when introduced to the lattice structure, search, find and fit into the energy wells with military precision.

During the recharging or loading phase, the energy storage devices made of the crystalline lattice material channel one electron at a time into each well created by four carbon pyramids on the bottom layer and four carbon pyramids on the top layer. Because the rules of quantum mechanics which operate in this tiny environment demand it, each electron or quanta of energy has a certain polarity, spin and “color” (and other mathematically defined characteristics) which must be accommodated if it is to find, fit and stay in an energy well. Interestingly enough, when a current is applied across the lattice-work structure, the electrons behave precisely as nonlinear quantum mechanics predicts they will. They flow much like a fluid into the lattice field, then separate into individual energy quanta and spin into the last energy well in each layer, automatically adjusting their individual spin, polarity and color to match their characteristics to fit the requirements of each well, until the lattice is full.

Because no chemical reactions are involved in the process of marching electrons into or out of the energy well fields, there is no resistance in the circuit. In the absence of resistance, the electrons fill

the wells at light speed, never missing a space, automatically adjusting polarity, spin and other characteristics, and creating no heat. The amount of time required to “charge” such a cell is less than 5% of the time required to recharge a conventional chemical battery of similar voltage and current.

The validity of $E = MC^2$ is called into question by the way these devices function. When the battery is fully charged, it actually demonstrates more mass than when the energy storage device is empty or discharged. The laws of quantum mechanics relied on in the West state categorically that this is not possible. It is the answer to the question, “How much does a beam of light weigh?”

According to the Soviet model, this is precisely as it should be. When this phenomenon was first demonstrated to scientists in the West who were testing the energy storage devices at INEEL in Idaho, they were thunderstruck. The quanta of energy, or electrons as we refer to them, which are poured into the crystalline lattice demonstrate characteristics of mass even though they are bundles of pure energy sitting in stasis, literally at rest. The characteristic of mass is verifiable – you can measure it by weighing the energy storage devices before and after they are charged. When they are charged, they demonstrate appreciably more mass than when they are fully discharged.

If this is confusing to you, to suggest that pure energy can be shown to demonstrate verifiable mass while at rest (in stasis), perhaps you can begin to appreciate how fundamentally different the physics of all this is when viewed in the terms of Einstein’s classic equation $E = MC^2$.

The existence of this technology clearly is proof positive that not only does energy demonstrate the characteristics of mass, but it does so in a state of non-motion or stasis, sitting idly in an energy well. A state of stasis is a very far cry from the terminal theoretical velocity required by the constant in Einstein’s equation, equivalent to the square of the speed of light.

The scientific implications of this phenomenon are truly staggering. At very least, the verification of mass as a property of energy quanta at rest suggests that Einstein’s theory of relativity may be altogether incorrect as a means of describing the dynamics underlying the real nature of the material world and its relationship to energy.

The existence of this technology suggests at very least, that energy and mass are equivalent characteristics of all things which are manifest in the material world. It is this fundamental contextual difference which distinguishes the Soviet model of quantum mechanics from the Western model. “The proof of the pudding,” they say, “is in the eating.”

Theoretical physicists may argue endlessly about the validity of the assumptions relied on by the IPMS scientists to develop their unique sciences, technologies and materials. But they cannot argue about the existence of the materials which have arisen from that context. They are as real as they can be. And they are unlike anything ever seen or contemplated in the West.

In the same way energy quanta stored in the energy wells of crystalline lattice materials demonstrate complete mathematical satisfaction with staying there indefinitely, when allowed to flow out in the form of an outgoing wave of electrical discharge, these quanta (electrons or photons, as you prefer) march right back out without resistance at light speed through a closed circuit to another use.

When these energy storage devices are discharged, they demonstrate other attributes which are not known in Western science, and which, because of the very nature of the chemical reactions we are accustomed to, are not theoretically possible according to conventional wisdom. Conventional

chemical batteries, when fully charged, produce electric current at a useable voltage for perhaps 30-40% of the total discharge cycle. After that, either the voltage or amperage (or both) drop to low enough levels that the devices being powered by them cannot recognize or use the electrical current which remains available. At that point, the batteries either have to be recharged or replaced.

The crystal lattice batteries have been demonstrated to produce precisely the same current and voltage levels throughout 98% of their discharge cycle. They produce no heat during discharge, regardless of the rate at which they are discharged. This is absolutely contrary to our experience with batteries, transformers or capacitors. Until the crystalline lattice materials were specifically engineered to register an electronically detectable blip at 95-96% discharge, it was impossible even for the scientists who developed them to distinguish a partially discharged battery from a fully charged one.

There is another characteristic which is intrinsic to energy storage devices which comes into play here. It is a characteristic of materials which is described as energy density. For non-scientific readers, this concept can simply be construed to mean the amount of measurable electrical current which can be produced by any device or material when its mass is converted into electrical energy. The concept is expressed in mathematical formulas as the number of watts and hours of consumable energy which can be converted from each kilogram of material. It is expressed as watt-hours per kilogram.

Here is an example we can all understand. Consider gasoline. When converted into electrical power at 100% efficiency, gasoline has been theoretically shown to have an energy density of between 550 and 600 watt-hours per kilogram of mass. In easy terms, that means that if one kilogram of gasoline were converted into pure electricity at 100% efficiency (with no loss due to heat, resistance, waste, etc.), the reservoir of energy would power a 100-watt light bulb for 5.5 to 6 hours.

Most of the high-end conventional automobile batteries of the lead-acid variety operate at an energy density rate of between 20-25 watt-hours per kilogram. The best NASA sodium-hydride batteries operate at 48-50 watt hours per kilogram. The energy accumulator devices which have been tested at the Idaho National Electronic Laboratories have demonstrated energy densities of between 850 and 1050 watt-hours per kilogram.

What does this mean in practical terms? It means, for one thing, that for the first time in the history of science an energy storage device has been created with an energy density which is greater than gasoline or any other refined fossil fuel. It means that devices which rely on these energy storage technologies can theoretically be designed to store and deliver clean electrical power at higher rates of efficiency than any fossil fuel ever discovered.

The global implications of this technology are irresistible. It means, among other things, that the technology exists, right now, to eliminate the need to build another nuclear power plant or dam another river to produce hydroelectric power. It means we can no longer justify burning another ounce of petroleum, another piece of coal, another cubic centimeter of natural (or unnatural gas) or another tree to produce heat, electricity or power for any purpose, including transportation.

When coupled with the plasma beam devices being tested by the Soviet infantry units in Afghanistan, these energy storage devices operated at such unbelievably high rates of discharge efficiency that they made it possible to repeatedly induce huge electrical discharges in a highly mobile configuration.

The same technologies which were used to produce the energy storage devices have been adapted to create transformers and capacitors with previously unimaginable performance characteristics. Instead of adhering to the conventional western model of “One Volt at One Amp across a resistance of One Ohm equals One Cubic Meter,” the Soviets have produced a capacitor which measures more than 1200 farads at 10,000 amperes in a package the size of a tuna sandwich.

When tested by the Technology Materials Testing Laboratory of the Defense Department at the Pentagon and at the I.N.E.E.L. in Idaho, totally new testing equipment had to be designed, engineered and constructed just to test the devices. The scientists at those laboratories had never tested anything like these materials before.

Instead of having to house transformer and capacitor devices in a series of trailers towed by diesel tractors or huge fixed-base facilities, the operating apparatus which supplied transformed power and high intensity capacitive bursts to the light cannons weighed less than ten pounds and could easily be transported in a backpack by a foot soldier.

One final question remains unanswered. “How did the energy storage devices, once dissipated or discharged, become recharged in the field, especially in the dark of night?”

The back-pack plasma beam device detected by the AWAC’s during limited combat use in the Afghanistan desert was powered by energy storage devices constructed of crystalline lattice materials. After each laser burst, the energy storage devices were recharged every 12-15 minutes (nearly 45 minutes in the dark of night – the residual ambient heat of the desert is a very efficient source of infrared energy) by sunlight, collected and converted to electricity by four-foot square panels of “solar cell” material arrayed on a pole like a flag, each weighing less than ten ounces.

The electrical energy stored in the back-pack energy accumulators was transformed into enormously high voltages and released at almost unbelievably high current levels when the super-capacitors were sufficiently charged. The beam of “light” detected by the AWAC’s crews was a field of plasma, flowing at the speed of light and demonstrating characteristics of mass (and, therefore, kinetic energy). The phenomenon represented by these bolts of lightning are not comprehensible according to the model of quantum mechanics and plasma physics currently being used in the West.

Battery packs utilizing these energy accumulator materials have been designed, produced and tested which provide more than 14 hours of continuously transmitted power on a single charge to conventional hand-held cellular telephone devices. Similar improvements in conventional battery/energy storage capacity have been developed and are being tested for such devices as video camcorders, laptop and portable computers and other similar consumer, commercial, industrial and military applications.

IPMS research in the field of layered crystals has thus led to the creation of capacitors with a very high level of capacitance (measured in farads). This technology is based on a revolutionary production technique which forms polarized surfaces of one molecule thickness, separated by less than one atomic diameter of space, held together by weak Van der Waals energy forces. The special properties created by these layered crystalline structures provide previously unimaginable internal surface areas. Super capacitors are constructed of layered materials numbering more than one million dipole sheets for each millimeter of crystal thickness.

These devices provide a virtually limitless number of charge-discharge cycles at astonishingly rapid charge and discharge rates. The potential impact of such devices on all electronic equipment currently being produced is incalculable, since virtually all electronic devices rely extensively on the West's state-of-the-art tantalum capacitance technologies.

At present, IPMS has on hand (among others) a super-capacitor roughly the size and dimension of a sandwich which develops more than 1,200 farads at 10,000 amperes. It also boasts production of a battery whose active mass energy density exceeds 850 watt-hours per kilogram. For the non-scientist (and all the rest of us as well) this means that a "battery" has been produced which, for the first time in history, produces more power per unit of mass than any fossil fuel ever devised.

Prototype testing of larger-scaled devices designed specifically for providing power to electric vehicles is currently underway. Prototypes are expected to be capable of sustained highway speeds of up to 70 miles per hour with a range of 525 miles on a single charge. The power plant for this application has been recently improved by the inclusion of a proprietary solid-state ceramic electric motor which weighs 7.2 kilograms and produces 100 horsepower on 12-volt direct current. For comparison, an electric vehicle employing a 100-horsepower electric motor performs the same as with a 500-horsepower gasoline engine.

If these performance attainments can be sustained in broad-based applications, electrically powered vehicles could be produced which would meet or exceed virtually all performance characteristics currently available in equipment relying on internal combustion, petroleum-based engines. Gasoline/diesel-powered transportation devices can be replaced by cleaner, more efficient and significantly less expensive alternatives.

The world market for current energy storage applications which will be superseded by these energy storage technologies is estimated to be in excess of \$24 billion per year (1991), exclusive of electric vehicle considerations.

Metamatter

9/25/1997 11:16 AM

From: Robert Bass

To: James Bowery<jabowery@netcom.com>;

CC: Robert W. Bass<rbrtbass@pahrump.com>; Gary Vesperman<vman@skylink.net>;

Subject: for the postulated "Bass page"?

Jim,

I just went to <http://www.generalstore.com/> and see nothing but "under construction, etc." Is this you, or someone else in another state? Do you know how to (reasonably economically) do Mass-eMailings? Say either from a rented Data Base of known Investors, or just blindly to "millions"?

How about posting the following

Potentially Awesome Speculative Investment Opportunity?

=====

Venture SEED Capital? Low Risk, AWESOME Payback!!!

I seek one or more High-Technology-Oriented "High-Roller" Nerves Investor(s) who would be intrigued by the following proposition (if demonstrably sound and absolutely genuine): Suppose you go to "Super Monte-Carlo" in the sovereign nation of Erewhon, and you come to a table with a Croupier who says:

"I have here a coin the size of a U.S. silver dollar, which is perfectly evenly balanced between Heads and Tails to 10 decimal places [with the edge for Heads in the 11th decimal place]; and a certificate from the US Bureau of Standards certifying it is not "loaded" to favor either Heads or Tails to the best measurements they can make.

"You can flip the coin yourself.

"I have here Certificates of Deposit for \$30 Billion in a centuries-old Swiss Bank of spotless reputation.

"My croupier's fee for allowing you to play is ridiculously modest.

"How much are you willing to wager on the honest flip?

"Now suppose the preceding scenario is repeated, except that several of the most reputable scientists in the world assure you that the coin is 'loaded' so that the chances of Heads are between 95% and 99%. Your own experts assure you that you have at worst One Chance in 20 of losing.

"Finally, the croupier says, you may play for \$150,000."

To recapitulate, the odds are 20-to-1 that you will win \$30 Billion, versus one chance in 20 that your entire \$150,000 wager will be lost.

Would you play?

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-----PRIVATE Communication-----

----- (NOT a Publication) -----

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I need Seed Capital of \$150,000 under circumstances exactly analagous to those outlined in the Risk/Reward scenario above. If "Heads" comes up, then my patented [Plasmasphere](#) technology can be escalated to a Metamatter technology, where by METAMATTER I mean a solid, *crystallized* fully-ionized plasma.

An ordinary crystal has nuclei spaced apart distances of about 10^{-8} cm, the [Bohr radius](#), because the [electron cloud](#) makes the atoms behave like little billiard balls of the size indicated.

However, in a plasma, the positively-charge nuclei and the electrons are equal in number, but the electrons are not in orbit around individual nuclei; they are "mixed up" as in a plum-pudding. Most plasma physicists will tell you that in order for hydrogen gas to be fully ionized (i.e., all electrons stripped from all nuclei) the temperature of the gas would have to be above 150,000 degrees Kelvin (i.e., 15 times hotter than the surface of the Sun). But this is demonstrably FALSE (both theoretically and experimentally).

If the gas is dense enough, it can be fully ionized at "low" temperatures, e.g. 5000 Kelvins [so-called "pressure ionization"].

Now suppose that the fully ionized low-temperature gas is condensed into the physical state of a liquid metal. I call this a Liquid Metallic Plasmoid (LMP). The characteristic of an LMP is that, like mercury, it keeps a constant volume; unlike a gas, it does not expand to fill all available space (if in a vacuum). The positive nuclei remain on average equidistant, and the electrons circulate around the dynamic lattice as in a giant crystalline molecule. Cook called it a "Cryscapade"; whereas others might call it a Liquid Crystal.

Fewer than a score people in the world understand that LMPs can exist. One LMP was photographed in half a dozen or so photos on the cover of the [Journal of Applied Physics](#) in 1957 by [later] Nitro-Nobel Medalist, physical chemist, Dr. Melvin Cook. The theory by which Cook explained his accidental discovery has been *independently* rediscovered (in 3 separate countries, USA, UK & France) by researchers seeking to explain the illusive natural phenomenon of Ball Lighting.

The late expert on High-Energy Lasers and Shock Tubes, Dr. Jay Blauer of Rockwell Rocketdyne, who died early of [leukemia](#), helped me to design an experiment that would prove beyond shadow of a doubt that LMPs can be created at will. The basic idea is to use a combination of Shock Tube technology and High-Energy Laser technology, with my patented Plasmasphere technology, in order to achieve in a non-self-destructive, reusable device, what Cook discovered accidentally with high-explosives in a self-destructive experiment.

Once the mere EXISTENCE of producible-at-will LMPs is achieved (for the Risk Capital of \$150K), it will be trivially easy to raise several million more for refinement of the device to move the LMP into a cryogenic [vacuum chamber](#) where (since it is electrically conductive) it can be magnetically levitated and allowed to cool by radiation.

Use of the Brush-Sahlin-Teller [Equation of State](#) (used to design the H-bomb) shows that as the LMP cools, its volume contracts, and it becomes more and more dense. There can be shown to scientists sufficiently expert to understand the evidence, a mass of recent experimental evidence (as well as expert theoretical evidence) that before the LMP gets down to room temperature it will crystallize into a Metastable Solid Crystal, namely a *new form of matter* never seen before on Earth!!!

The density will be intermediate between that of ordinary condensed matter and that of [neutron stars](#), wherein a teaspoonful weighs tons.

I propose to manufacture 3 kinds of Micro-Crystals of Metamatter: MSP, MSD, and MSD. Each addresses in a truly *revolutionary* way a trillion-dollar market, with a multi-billion dollar profit potential. In many ways, Metamatter will have a bigger impact on human civilization than any prior discovery, including both computers and atomic energy! In fact, consider the following:

MSP (Meta-Stable Protium [hydrogen]) will be the IDEAL room-temperature [Superconductor](#), which will revolutionized both the Computer/Electronics industry and the Electric Power industry.

MSD (Meta-Stable [Deuterium](#) [heavy-hydrogen]) will be the ideal 5th [Generation Cold Fusion fuel](#); when triggered by an infra-red photon of 17.7 eV, a micro-pellet will undergo a phonon-mediated and Lattice-Catalyzed ANEUTRONIC chain-fusion reaction to cleanly release the energy of 10

sticks of dynamite, to make steam for mechanical heat and conversion at 67% efficiency into electrical energy. This can make both homes and automobiles independent of the present electrical utility companies, though they will still need to buy the almost dirt-cheap MSD fuel micro-pellets from Metamatter Industries.

MSH (Meta-Stable Helium) will be the IDEAL [rocket propellant](#) for expanding human civilization into the [Solar System](#) (e.g. to colonize Mars); when a micro-crystal of MSH is triggered by the right frequency of laser-light, it will return to the form of gas as if it had been compressed by tens of millions of atmospheres of pressure; it will release 43 times more energy per unit weight than any conceivable chemical combination!

During the mid 1980s, the [Air Force Systems Command](#) sent a group of 7 or 8 Colonels who held Doctorates in the physical or engineering sciences to scour the USA for 9 months, in groups of 2 or 3, and to report back on what futuristic technology would have the greatest potential impact on the [USAF](#) and USA economy by the year 2000 if reduced to actual practice. They listened to 600 industrial and academic presentations and selected MSH as the greatest payoff (for least risk) choice! The USAF Rocket Propulsion Lab was supposed to issue 8 parallel contracts for 8 "crash" projects to see if bulk MSH could be manufactured. I was slated to get one of the 8 contracts, but my approach (through solidifying a helium LMP) was radically different from that of the other 7 selected proposers.

With MSH as fuel, one could take a 50 percent payload to Mars and back in two weeks! (Accelerate there and return at one gee.)

But a Princeton professor of Physics, Will Happer, then Secretary of the JASONS [advisers to DOD/DOE], advanced theoretical arguments which appeared to shoot down the practicality of the other 7 approaches, and the whole project was canceled. But Happer's arguments are totally irrelevant to my approach. Moreover, Happer was later Chief Scientific Advisor to [Admiral Watkins](#) (Secretary of DOE) when the ERAB Report was produced.

Those who understand the recent work of Arata and Zhang in which the aneutronic conversion of deuterium nuclei to helium nuclei inside of a palladium lattice is recorded in Real Time (inside of a sealed apparatus which contains a Mass-Spectrometer and which give ZERO helium when the heavy-water deuterium is replaced by ordinary-water hydrogen) know that Aneutronic [Cold Fusion](#) (CF) is a demonstrable FACT and that Happer and the ERAB Report were WRONG. Therefore it is logical to consider the possibility that Happer was also wrong when, before he shot down CF, he also shot down MSH.

There is ZERO risk in producing an LMP; it is just that 99.999% of all scientists are ignorant of Cook's work.

There is a slight technical risk in crystallizing an LMP at room-temperature; conceivably, it will remain liquid until below the temperature of [liquid nitrogen](#), in which case my proposal will have been a failure. But the payoff is so AWESOME, and the chances of failure so tiny, that the risk seems worth taking.

I can supply drawings of the Proof-of-Principle Process Prototype Plasmasphere demonstration designed by Dr. Blauer and myself. Jay Blauer told me that he could do the experiment in his spare time evenings and weekends "in two weeks" using shock-tube and laser equipment already in his lab at [Rocketdyne](#), provided he had \$10,000 cash for items and materials not on hand.

Several "reputable" labs have explained to me that they would not even consider bidding on doing the Bass-Blauer experiment for less than \$100,000. I have personal contacts at 22 government and private labs (such as JPL, SRI, LANL, etc.) which I would like to visit with my former graduate student Dr. Lou Puls (who, unlike me, is an accomplished experimental plasma physicist) to make joint presentations on the theoretical and experimental aspects of creation of an LMP, preparatory to asking them to bid. After 22 weeks spent in such visits, (and paying Dr. Puls Consulting Fees) I expect to have \$50,000 left to offer the Highest Bidder. I also expect that no one will bid less than \$100,000. But I also expect that out of the 22 presentations, at least several will become so excited that they will offer to Cost Share. In several labs, the working-level scientists interested in LMPs have told me, "If you can get the Management to pay attention, we have in place already a mechanism and a precedent to Cost Share."

Remembering what happened to Fleischmann and Pons it will accomplish naught for me to take the \$150K, rent the equipment, and do it in my own garage. Nobody will believe it, and nobody will pay any attention. However, if we spend 6 months getting suitable technical personnel of nationally reputable laboratories excited about the subject of LMPs, and then some lab with the prestige of, say, JPL or LANL or SRI, announces the production of an LMP, many other labs will immediately undertake to "catch up" and to replicate the result at their own expense. Once 3 or 4 labs have announced successful replication, no one will doubt and then it will be trivially easy to raise the venture capital to go from LMPs to solid, crystallized Metamatter micro-crystals of MSP, MSD, and MSH.

I can supply a large amount of written technical material to anyone who is interested in raising the \$150,000 seed capital required to get Metamatter Industries off the ground (and for me to file the pioneering Patent Applications, and since I am now licensed to practice Intellectual Property Law before the PTO I can do it myself at no extra expense – as did the physicist/patent-attorney who invented the Xerox process).

This will be BETTER than getting in on the ground floor of Xerox or Polaroid or [Microsoft](#)!

Sincerely,

Robert W. Bass, M.A. Oxon, Ph.D.
Dr. Robert W. Bass, Registered Patent Agent 29,130 [ex-Prof Physics]
Inventor: Topolotron, Plasmasphere, issued; QRT Cold Fusion, pending
P.O.Box 1238, Pahrump, NV 89041-1238; phone/FAX (702) 751-0932/0739
Voice-Mail: (702) 387-7213 e-Mail: rbrtbass@pahrump.com

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XXX.YYY
XXX Venture Partners

Dear XXX,
Have you got your _____ Fund off the ground yet? Did you receive the Proposal I sent you last week?

Do you agree that the logic of the Analogy I used for the proposed Low-Risk, AWESOME Payoff, "Proof-of-Principle" (POP) [Experiment](#) is sound? If a rational Investor were convinced (e.g. by the photos published by Nitro-Nobel Medalist, Melvin Cook) that it is possible to put a plasma in the state of liquid metal (Liquid Metallic Plasmoids, or LMPs), and that the ONLY risk is that when cooled to room temperature they will not yet crystallize [but won't crystallize until down below, e.g.. the temperature of liquid nitrogen], which risk will be taken by OPM [[Other People's Money](#)] when the scientific community realizes that LMPs can be created at will, and that there is ZERO risk in performing the proof-of-principle demonstration experiment to convince them of this fact, and that this can be done for as little as \$150,000 (which will also permit Patent Applications ensuring the inside track when LMPs get crystallized), don't you agree that the Reward to Risk Ratio of $\$3 \times 10^{10} / \$1.5 \times 10^5 = 2 \times 10^5$ multiplied by the probability of crystallization at room temperature (which is supported by hundreds of theoretical papers on MSH and at least one recent paper in Physical Review Letters on MSP, as much, much better than 50%), namely an EXPECTED REWARD/RISK RATIO of more than 100,000-to-1 implies that this Proposal is "better" than any proposal made in this field yet, when you note that each of the 3 main products to be manufactured from crystallized LMPs, namely MSP, MSD, and MSH, EACH separately addresses a different Trillion-Dollar Market with a clear Profit Potential of more than \$10 Billion?

Moreover, this is a Proposal in which the Investor who RISKS \$150K will know within a mere 6 or 7 months WHETHER OR NOT Phase One of his speculation has paid off! (And it is highly likely that the Absolute Answer will be known within another 3 months, considering how fast the scientific community reacts to something, e.g. High-Temperature Superconductors, which is both surprising and EASY to replicate!)

Please tell me when a Speculative Investment Possibility better than this one has last crossed your desk? (I'll bet, NEVER!)

Regards,

Bob Bass

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Electrino Fusion Power Reactor

Gordon L. Ziegler has discovered how to make a clean electrino fusion power reactor capable of generating up to a net of 1880 megawatts of DC electricity. The proposed energy source would produce no carbon emissions and no radioactive wastes. (By reversing the order-to-disorder arrow in the second law of thermodynamics, a \$50,000,000 electrino fusion power reactor could be built which would also reverse all aging, disease, and decay processes within a one-mile radius.)

Power output, however, cannot occur in this system without the simultaneous operation of two aspects of the invention. One is an accelerator-collider making a field reversing the order-to-disorder arrow in the second law of thermodynamics in a controlled area. Among other things, that field makes the other aspect of the system (the power source) efficient enough to be self-sustaining and prevents the formation of radioactive wastes.

Electrons are generally regarded to be structure-less spinning point charges. But that contradicts a reasonable postulate that occurred to Gordon L. Ziegler in 1967: "A spherically or cylindrically symmetric smooth charge distribution cannot have detectable spin." Electrons have detectable spins. Therefore they must not have smooth structure-less symmetric charge distributions. They must be lumpy and have internal structure. An application of the Parsimony Principle shows that they must be composed of two half-charges orbiting each other at the speed of light. The reason scientists concluded that the electron was structure-less was that it could not be blasted apart in collisions up to 700 MeV each particle.

But in Ziegler's model, electron sub-particles are bound together by confinement by a speed of light barrier (they are trapped going faster than the speed of light). They cannot be blasted apart, even though they are two particles.

The two sub-particles of electrons make a whole different structure for matter than quarks and leptons. The sub-particles can also fuse with each other – making new particles. Fusing sub-particles of positrons reverses the order-to-disorder arrow in the second law of thermodynamics – making the power source efficient enough to be self-sustaining and preventing the radioactive wastes from forming. Fusing the sub-particles of electrons comprise the power source.

Key components include a polarized positron source, injector accelerators, inflection magnets, end magnets, and the beam transport.

Governments and utilities would buy electrino fusion power reactors because the process is a clean, inexpensive way to produce electricity. It is 1000 times as efficient as nuclear reactors. It does not require uranium or plutonium for fuel. It can run on anything for fuel such as dirt, sand, sewage, ground garbage, toxic chemicals, radioactive wastes, sea water, etc. without carbon nor radioactive pollutants.

Assume that the collision energy were 940 MeV to avoid unwanted heat (operate at room temperature), and the current in each beam was 1.0 ampere of electrons. The energy investment into the electrino fusion would be 1880 megawatts. The energy released in annihilation photons would be 3760 megawatts. Recoverable net power would be 1880 megawatts or less.

The collision energy of the linear accelerator would be 940 MeV (each particle – 1880 MeV in the center of mass frame). The current in each beam would be 1.0 amperes of electrons. There would be two beams 180 degrees from each other.

The energy released in annihilation photons would be 3760 megawatts. "Annihilation photons" are the 940 MeV X-Rays produced when a negatron annihilates a proton. These X-rays are converted to electricity by order-to-disorder arrow reversed photo-voltaic cells with nearly 100% efficiency.

In summary the 3760 megawatts output of annihilation photons would be converted to electricity. However, in order to keep the electrino fusion reaction going, 1880 megawatts would be taken from the 3760 megawatts to power the linear accelerator. The net energy output would thus be 1880 megawatts-electric.

The size of an electrino fusion reactor would be about 80' x 10' x 10'. The fuel is whatever brass or copper James M. Potter uses in constructing the walls of his linear accelerators. James M. Potter, Ph.D., is President, JP Accelerator Works, Inc., 2245 47th Street, Los Alamos, NM 87544, 505-690-8701 or 888-301-2833 or 505-661-8155, jpotter@jpaw.com, <http://www.jpaw.com>. 155 lbs of

brass would be consumed over 100 years before shutdown for refueling. The linear accelerator would be a standard commercially available model. It would not need to be customized for an electrino fusion reactor.

The smallest electrino fusion reactor that would be possible to build is now about 80' x 10' x 10'. It may eventually be the size of a filing cabinet.

The projected cost of the first 1880-megawatt electrino fusion reactor is approximately \$100 million. This clean source of electricity could be built in two years, and the necessary Refresher built in one year. Electricity could be generated for only about 1.5 percent of current rates (a little over 0.1 cent per kwh). Subsequent clean energy sources can be built for \$37.5 million each.

The 1880 megawatts (net) of electricity generated by an electrino fusion power reactor would be Direct Current (DC). A utility would need thick wires and the biggest busbars and transformers on the planet. Conversion from DC to Alternating Current (AC) would require the world's largest inverters.

The electrino fusion reactor requires the Refresher to be self-sustaining. But the Refresher has several positive medical side effects due to reversing the order-to-disorder arrow that cannot be eliminated – in a controlled area reverse adult aging and wipe out diseases.

Refresher 1 Design Specifications

Size of accelerator	20 meters long by 3 meters wide
Diameter of channels	4 cm (maybe a little more to allow for water cooling channels)
Type of accelerator	Folded linear accelerator with pulsed klystron RF power supplies and S-band cavities (2856 MHz)
RF power supplies	Eight 35 to 50-megawatt pulsed klystrons
duty factor	0.1% (peak current 1000 times average current)
Average power	400 kW (20 kW per meter of accelerator)
klystron efficiency	~50%
total system power	800 kW
cooling water requirement for each 5 m section	5 to 10 gpm

cooling water required by each klystron	~ 5 gpm
cooling towers capacity	800 kW
Cost:	
Linear accelerator	\$12 million
Klystrons	\$ 8 million
Klystron power supplies and cooling towers	\$ 2 million
Magnets and their power supplies	\$ 2 million
System with controls	\$ 8 million
10% contingency	\$ 3.2 million
Builder's cost	\$35.2 million
Other budgeted items	\$14.8 million
Total budgeted	\$50 million
Creation time total	3 years
Design time (beam dynamics, rf power systems, cooling, and computer control)	1 year
Fabrication and subassembly testing	18 months
Installation and commissioning	6 months

(The following chapter is taken from *Formulating the Universe*, Volume II, by Gordon Ziegler, Chapter 7. Copyrighted by Benevolent Enterprises 2004. Used with permission.)

Chapter 7

SECOND LAW OF THERMODYNAMICS

A. Introduction

Everything goes from a state of order to more disorder. Brand new automobiles wear out and rust. Objects break or are damaged. A thermos bottle falls off the counter, and the inner glass bottle is shattered. We do not expect the shattered bottle to fall back up to the counter and become whole again. There is a one-way arrow for the events to transpire. That arrow is the Second Law of Thermodynamics.

Houses grow old and fall into decay. Barns fall down. Fruit spoils, people and animals grow old and die. Viruses mutate. People become ill and die. Crime and disorder in society increase. Homes break up. Aborted fetuses disintegrate. Dead people and things decompose. All of these negative occurrences are the outworking of the second law of thermodynamics – that part of which is an arrow making everything go from order to disorder.

Let us consider what other people have written about the second law of thermodynamics.

"Second law of thermodynamics

"An equilibrium macrostate of a system can be characterized by a quantity S (called entropy) which has the following properties:

"(i) In any infinitesimal quasi-static process in which the system absorbs heat dQ , its entropy changes by an amount

$$dS = \frac{dQ}{T} \quad (7-1)$$

where T is a parameter characteristic of the macrostate of the system and is called its *absolute temperature*.

"(ii) In any process in which a thermally isolated system changes from one macrostate to another, its entropy tends to increase, i.e.,

$$\Delta S \geq 0. \quad (7-2)$$

"The relation (7-1) is important because it allows one to determine entropy *differences* by measurements of absorbed heat and because it serves to characterize the absolute temperature T of a system. The relation (7-2) is significant because it specifies the direction in which nonequilibrium situations tend to proceed."¹

The above expression of the second law of thermodynamics is regarding entropy and heat. Other writers include the order-to-disorder arrow in the second law of thermodynamics.

"It is a matter of common experience that disorder will tend to increase if things are left to themselves. (One has only to stop making repairs around the house to see that!) One can create order out of disorder (for example, one can paint the house), but that requires expenditure of effort or energy and so decreases the amount of ordered energy available.

"A precise statement of this idea is known as the second law of thermodynamics. It states that the entropy of an isolated system always increases, and that when two systems are joined together, the entropy of the combined system is greater than the sum of the entropies of the individual systems. For example, consider a system of gas molecules in a box. The higher the temperature of the gas, the faster the molecules move, and so the more frequently and harder they collide with the walls of the box and the greater the outward pressure they exert on the walls. Suppose that initially the molecules are all confined to the left-hand side of the box by a partition. If the partition is then removed, the molecules will tend to spread out and occupy both halves of the box. At some later time they could, by chance, all be in the right half or back in the left half, but it is overwhelmingly more probable that there will be roughly equal numbers in the two halves. Such a state is less ordered, or more disordered, than the original state in which all the molecules were in one half. One therefore says that the entropy of the gas has gone up. Similarly, suppose one starts with two boxes, one containing oxygen molecules and the other containing nitrogen molecules. If one joins the boxes together and removes the intervening wall, the oxygen and nitrogen molecules will start to mix. At a later time the most probable state would be a fairly uniform mixture of oxygen and nitrogen molecules throughout the two boxes. This state would be less ordered, and hence have more entropy, than the initial state of two separate boxes."²

"The explanation that is usually given as to why we don't see broken cups gathering themselves together off the floor and jumping back onto the table is that it is forbidden by the second law of thermodynamics. This says that in any closed system disorder, or entropy, always increases with

time. In other words, it is a form of Murphy's law: Things always tend to go wrong! An intact cup on the table is a state of high order, but a broken cup on the floor is a disordered state. One can go readily from the cup on the table in the past to the broken cup on the floor in the future, but not the other way round.

"The increase of disorder or entropy with time is one example of what is called an arrow of time, something that distinguishes the past from the future, giving a direction to time."³

B. Electrino Model and 2nd Law

The natural tendency of leptons in beta decay is that the parent lepton combines with one or more gravitons to produce more particles. In all natural reactions, the order energy of the resultant particles is less than or equal to the order energy of the original particles.

1. Negative Energies. Let us consider antimatter more carefully. "In the Dirac theory also, *the permissible energy values for a free particle range from $+mc^2$ to $+\infty$ and from $-mc^2$ to $-\infty$* . The first of these results is of course just what we expect for a free particle – that its total energy can have any value greater than its rest energy. But the second result is quite puzzling, since it implies the existence of states of *negative total energy*."⁴ Anderson in 1932 discovered positrons in cosmic radiation. These were regarded as Dirac's negative energy particles. "The first two solutions of the Dirac equation . . . clearly describe a free electron of energy E and momentum \mathbf{p} . The two negative energy electron solutions . . . are to be associated with the antiparticle, the positron."⁵

However, in the annihilation it is not $(+mc^2) + (-mc^2) = 0$, but $2mc^2$ is the result of annihilation.⁶ There is something strange going on with the minus signs in these equations. The calculations are inconsistent.

Maybe there are two kinds of energy considered. One we can call entropy energy E_s . In the annihilation reaction, $+\#mc^2 + -\#mc^2 = 2mc^2$. Entropy energy is the higher value. The other energy is order energy E_o . In order energy the same reaction is $(+mc^2) + (-mc^2) = 0$.

Let us consider entropy energy and order energy for particle decay schemes. There are a few decay schemes where no negative order energy (anti-matter) is introduced in the right hand side of the decay schemes. In those few instances, the final order energy is equal to the initial order energy (when kinetic energy is taken into account). But in most cases, a trace of negative order energy (anti-matter) is introduced into the right side of the decay schemes. There is nothing on the left hand sides of the decay schemes to correspond to this addition of a trace of negative order energy on the right sides of the decay schemes. Therefore, total order energy is less on the right hand sides of the decay schemes than on the left hand sides (if only by a trace). A few decay schemes introduce a lot of antimatter (as K^-) on the right side of the decay scheme. The loss of order energy in the systems is greater in those cases. But in every case, for all natural processes, the order energy final is \leq the order energy initial, or

$$\Delta E_o \leq 0. \quad (7-3)$$

Let us check the order energy for electron electrino fusion reactions. Electrons made energetic by acceleration (as heavy as protons) fuse and form anti-protons. Matter is converted to anti-matter. Entropy energy is conserved, but not so order energy. Order energy is reduced in the extreme from +938 MeV to -938 MeV or more for each electron fused (two electrons are fused in each reaction).

The order-to-disorder arrow for electron electrino fusion points in the usual direction. The system does obey the second law of thermodynamics.

2. Reversing the Order-to-Disorder Arrow. What would happen if we fused the electrino constituents of positrons instead of the electrino constituents of electrons? Entropy energy E_s would again be conserved. Entropy would be increased. However, order energy E_o would go from $-2 \times 938 \text{ MeV}$ to $+2 \times 938 \text{ MeV}$ – from disorder to order. The order-to-disorder arrow would be reversed. This would be a reaction that would be prohibited by the second law of thermodynamics – unless the strong gravitational force that fuses the anti-semions would be stronger than the second law of thermodynamics (which otherwise governs weak interactions). The stronger of the strong gravitational force and the second law of thermodynamics should be determined by experiment. More rides on that one experiment than perhaps on any one other experiment in this generation. If it is found that strong gravity is stronger than the second law of thermodynamics, then order can be restored at first in a small area, and then for the whole earth.

Here we see that the entropy arrow of time and the order-to-disorder arrow of time are separate and distinct, and are not one and the same thing. While all the reactions the author has studied increase entropy, the fusion of positron anti-semions reverses the order-to-disorder arrow, making more order out of the disorder.

Positron constituent electrino fusion might not only take the electrinos from disorder to order. It could make other physical processes in a local area go from disorder to order. The positron fusion not only violates the second law of thermodynamics, it reverses the order-to-disorder arrow of that law in a local area, making other processes in that area reverse. Let us consider that process more to see how it might be regulated.

We guess the desired relationships for reversing the order-to-disorder arrow in the second law of thermodynamics through dimensional analysis. We want to solve for r , the maximum radius in which the reversed law would be effective. There is a way we can obtain a length from combinations of our variables and constants. That way is in the right hand side of Eq. (7-4). The whole expression is the thermodynamic relation we are seeking. The thermodynamic relation is:

$$(\Delta E_o)_t > 0 \text{ where } r < \frac{(\Delta E_o)_1 c}{ik}, \quad (7-4)$$

where E_o is the order energy – the positive or negative energy in the pair production of particles; ΔE_o is the change in the order energy, where $(\Delta E_o)_t$ is the change in the total order energy of the system, and where $(\Delta E_o)_1$ is the change in the order energy for a single source reaction – for a positron fusion reaction it is approximately $2 \times 10^9 \text{ eV/collision} \times 1.6 \times 10^{-19} \text{ joules/eV} = 3.2 \times 10^{-10} \text{ joules/collision}$; c is the speed of light – approximately $3.0 \times 10^8 \text{ m/s}$; we shall solve for the effected radius r ; i is the beam current in each beam in Coulombs per second (we will solve for 10^{-11}); k is the ratio of particle energy to particle charge. This energy per charge is the accelerated energy of the particle (roughly $1 \times 10^9 \text{ ev}$ times $1.6 \times 10^{-19} \text{ joules/ev} = 1.6 \times 10^{-10} \text{ joules}$) divided by the charge of each positron ($q = 1.6 \times 10^{-19} \text{ coulombs}$), which equals $10^9 \text{ joules per coulomb}$. The collision efficiency eff is not needed in this equation, because the result is not in particles, but is already in collisions.

Incredibly, the lower the current, the bigger is the radius of the affected area. The greater the current, the smaller is the radius of the effected area. With 10^{-11} A beam currents, the effected

radius r solves for 9.6 meters – roughly 10 meters, which describes a small area – less than a tenth of an acre.

To get an idea of the positron beam currents needed to reverse the order-to-disorder arrow of the second law of thermodynamics in what size of affected radius, see Table 7-1 below.

For an area the size of	r	beam current
House	10 m	10 pA
four football fields	100 m	1 pA
community	1 km	100 fA
city	10 km	10 fA
Israel	160 km	0.6 fA
U.S.	2,400 km	0.04 fA
World	13,000 km	0.008 fA
Sun	1.7E11 m	6E-22 A

Table 7-1. Beam currents versus affected radius for reversal of the order-to-disorder arrow of the second law of thermodynamics.

We must make sure that reversing the second law will do only good and not evil before we flip the switch. Inspired evidences will be studied in the next chapter on a wide range of phenomena affected by reversing the order-to-disorder arrow in the second law of thermodynamics.

¹F. Reif, *Statistical Physics*, Berkeley Physics Course--Volume 5 (New York: McGraw-Hill Book Company, 1967), p. 283.

²Stephen Hawking, *A Brief History of Time--From the Big Bang to Black Holes* (New York: Bantam Books, 1988), pp. 102, 103.

³*Ibid.*, pp. 144, 145.

⁴Robert B. Leighton, *Principles of Modern Physics* (New York: McGraw-Hill Book Company, Inc, 1959), p. 665.

⁵Francis Halzen, Alan D. Martin, *Quarks and Leptons* (New York: John Wiley & Sons, 1984), p. 107.

⁶David S. Saxon, *Elementary Quantum Mechanics* (San Francisco: Holden-Day, 1968), p. 386.

(End of Chapter 7)

EXECUTIVE SUMMARY OF BUSINESS PLAN

electrino energy is a new company formed to develop the inventions envisioned by the new model of physics—the electrino fusion model of elementary particles. Our company provides theoretical work and guidance to licensees. Our focus is the reverser of aging, disease, and decay processes (Refresher 1) and whatever else we must do to fund the Refresher 1.

electrino energy was formed October 12, 2005 as an invention development and theorist service specializing in four high-technology inventions – inertia-less craft; artificial gravities; reverser of aging, disease, and decay processes; and electrino fusion reactors generating electricity. All four inventions have potentially extremely high value. But all four inventions currently have three principle difficulties: 1) they are unbelievable by almost all persons – including agency heads, venture capitalists, congressmen and senators; 2) almost all of them cost scores of millions of dollars to develop; and 3) **electrino energy** has no money to develop them. With no capital and no revenue stream or other assets to fall back on, **electrino energy** cannot even get a guaranteed loan.

But **electrino energy** is not resource-less and in a hopeless condition. It has three principal approaches that it can take to resolve this dilemma:

1) Though the aging reverser is the most urgently needed, a miniature inertia-less craft can be constructed for a whole lot less money. It should be possible to construct one for a few hundred dollars borrowed from friends. But that technology could be licensed for hundreds of millions of dollars – enough to finance all the four high-tech inventions.

2) As a back-up to that approach, venture capital angels could be approached to advance the money to finance the reverser of aging, disease, and decay processes. This invention is not only high tech, but medical. The other inventions could be developed at a later time.

3) As a back-up to that approach, the owner could pursue his particle theory, predicting the masses of particles. That may be difficult, but not impossible. This would do what no other physical theory can do. Such a feat would be publishable, arousing interest among scientists for creating a facility to test the model – opening the way for government funding of the high-tech inventions.

A master decision tree flow chart linking and employing these three alternatives for funding the development of the inventions is in Section 7.0 Financial Plan.

According to alternative 1), projected sales and profits for the first four years of operation are summarized below:

Year	Sales(\$)	Profits(\$)	Profit/Sales(%)
1	200,000,000	0	0
2	0	0	0
3	0	0	0
4	10,000,000,000	9,000,000,000	90.0

According to alternative 2), there are no actual projected sales and profits for the first three years of operation. Year four is the same as above. According to alternative 3), there are no projected sales or profits for the first five years.

Currently, there are no competitors for any of these inventions. Once public incredulity is overcome by demonstration, the devices should have huge market potential.

The size of the electricity generating market is essentially enormous. It would be up to 50 percent of electric generation world-wide eventually. That's probably over a trillion dollars.

A self-powered high-speed locomotive powered by an electrino fusion power reactor would need to be at least 85 feet long.

Environmental Heat Engines

Las Vegas inventor Robert Stewart developed his "Stewart Cycle" engine for transportation vehicles, electricity generators, and large-scale water lifters. His efficient and pollution-free engine uses ambient heat to expand a working fluid such as Freon or ammonia and move pistons through sealed chambers. His patent is for Vapor Actuated Power Generating Device, No. 4,033,136.

A possibly more up-to-date version is Ralph J. Lagow's Method of Generating Power from a Vapor, Patent No. 4,693,087. Ken Rauen's Rauen cycle and Superclassical cycle engines also expand working fluids with environmental heat to provide useful net mechanical power.

Mr. Stewart claimed that his fuel-less engine could lift Colorado River water from below Hoover Dam back up into Lake Mead, thereby doubling Hoover Dam's output of electricity. He also proposed lifting water from the Columbia River into the Colorado River via a canal, generating electricity as the water flowed back downhill.

DISCLAIMER: Inclusion of any invention or technology described in this list of inventions does not in any way imply its suitability for investment of any kind. All investors contemplating any investments in these devices and technologies should first consult with a licensed financial professional. Prospective investors should exhaustively perform their own investigation of pertinent facts and allegations of facts. Investors should also ensure thorough compliance with regulations of the federal Securities and Exchange Commission and appropriate state securities divisions. For more information, see <http://www.zpenergy.com/modules.php?name=News&file=article&sid=1655>.

Thank you for your comment, Gary Vesperman.

The comment tracking number that has been assigned to your comment is SEDDSupp20013.

Comment Date: December 1, 2011 21:28:28PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDSupp20013

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Attachment: Locomotive_Power_Sources.docx

Comment Submitted:

Attached is my compilation of candidate power sources for high-speed rail locomotives. It is available in my website www.padrak.com/vesperman. Page 9 has this:

Thin-Film Electrolytic Cells

A number of seasoned technology integrators have developed thin-film energy storage technologies which hold considerable promise. Dr. George Miley, Dr. Robert Hockaday and others have developed thin film technologies with energy densities exceeding 250-400 watt hours per kilogram. Dr. Miley's invention is illustrative. Using a flowing pack-bed type electrolytic cell with 1-molar LiSO₄ in light water, 1mm plastic beads with a very thin [500-1,000 angstrom] film of metal [nickel, palladium, titanium] are employed. A special sputtering technique is used to spray the metals onto the surface of the beads. With 2-3 volts of electrical power and 1.5 milliamperes of current, the single film experiments have shown the material to produce more than 10 times as much output power as input. The input power is no more than 0.01 watts while .5 watt of heat is produced.

It is likely that the physics involved in this reaction involve the release of energy as a by-product of nuclear transmutation. Dr. Miley has written, "The key finding from these studies has been the observation of a large array of "new" elements (i.e., different from the original bead coating), many with significant deviations from natural isotopic compositions, after the run.

Great care has been made to ensure that these elements are distinguished from isotopic impurities by use of a "clean cell" with high purity components and electrolytes, in addition to the pre-and post-run analyses. Even low-energy radiation was detected from the bead days after each experiment. Applications to space power, providing a 1-kilowatt cell with only 500 cubic centimeters of active electrode is predicted." Note that this particular invention, with its large over-unity energy yield, was awarded an NERI grant by the DOE. At the insistent urging of the American Physical Society and representatives from MIT and other universities whose laboratories are currently engaged in high-temperature gas-cooled nuclear reactor research, Secretary Richardson eventually withdrew the grant.

The tangle-footed Department of Energy actively discourages the development of new sources of energy, presumably to appease the oil, uranium and coal companies. The U.S. Patent Office has unfairly classified secret nearly 5000 energy patents. Luckless energy inventors then risk 20 years in prison if they work on, sell, or publicize their energy invention – often created at great personal sacrifice.

(End of excerpt)

This Draft Solar PEIS should compare the cost-effectiveness of an all-out World War II Manhattan Project-styled crash program to develop and commercialize thin-film electrolytic cells with the cost-effectiveness of covering and ruining millions of acres of pristine wild lands with relatively inefficient solar energy collectors and transmission lines.

Locomotive Power Sources

High-speed trains typically rely on some means of supplying energy to the locomotive from an external source. For example, cumbersome overhead electric lines are tapped to directly power a locomotive's electric drive wheels. Another method of connecting the locomotive to an electricity grid is with a dangerously exposed high-voltage third electrified rail. Linear magnetic propulsion mechanisms have been researched.

It would be much cheaper and easier to build and operate high-speed trains if their locomotives utilize an internal practically fuel-less power source.

The following candidate high-speed locomotive power sources appear worthy of further research. Some may be found to be worthwhile for building and testing prototype self-powered locomotives.

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BlackLight Power's Hydrino Generator

BlackLight Power, Inc., is developing an exotic new source of clean energy from ordinary water. Either an electrolytic cell or gaseous potassium ions in a vacuum compress hydrogen atoms into lower-energy-state hydrogen atoms called "hydrinos". When the hydrinos are formed, energy is released which in magnitude is between chemical and nuclear energy. BlackLight Power, Inc., has ambitious plans for retrofitting fossil-fueled and nuclear power plants.

BlackLight Power, Inc., is developing a 100-kilowatt generator which can power a car 100,000 miles on a tank of water. BlackLight Power, Inc., claimed some years ago that it is developing a 10-kilogram battery which can supply 150 horsepower for 1,000 miles.

BlackLight Power, Inc., has already licensed 8,250 megawatts of clean, safe hydrino generation fueled by water to seven utilities (Hoover Dam's nameplate capacity is 2,080 megawatts) – eliminating \$2 billion/year in fuel costs.

Focus Fusion

See <http://www.focusfusion.org/>. Apparently this method is much less expensive than hot fusion.

Thorium PowerPack

Bob Dratch's thorium powerpack would generate electricity at approximately one-tenth of the cost of current methods of producing electricity. Thorium is sufficiently abundant that the entire planet can be powered for millennia. After ten years of continuous operation, a trace amount of U-233 is produced. U-233 recovery to re-purify the thorium is easily accomplished. Thorium thus lasts a long time when recycled and consequently is a very efficient energy source. After extraction from ore, thorium does not require energy-intensive enrichment as is the case with uranium.

A thorium-powered reactor is inherently safe. It doesn't run the risk of "meltdown" or explosion nor can even a dirty bomb be created. Its nuclear reaction simply stops when its neutron exciter is turned off.

The simplest and smallest "table top-sized " neutron exciter design is something close to the size of a 4-D cell flashlight, and starts at about 500-kilovolt neutron output. In fact this smallest most cost-effective system can run off 4 D cells for its power.

A thorium powerpack's neutron excitor does not use radioactive flux components as conventionally done for portable systems. Instead it relies on Dratch's invention of a novel method of resonant phonon pair cleavage using specifically designed nuclear lattice holo-forms (holographic waveforms) to induce neutron imbalance in a host atom where the host atom then attempts to establish "balance" through the liberation of neutrons. Dratch demonstrated the first model of this novel design back in 1966.

Commercial thorium powerpacks can be developed with 50 or 100 kilowatts of output for home use, and up to 1 megawatt for industrial use. They actually are "power amplifiers" with power outputs of 60 times over input power. Maintenance would be minimal.

IPMS Thorium-227 Electricity Generator

The I.N. Frantsevich Institute for Problems of Materials Science (IPMS), Kiev, Ukraine, from 1951 through 1991 secretly employed 6600 of the most brilliant theoretical physicists in the entire Soviet Union to work for nearly 50 years with complete freedom. They were able to develop whole new sciences, technologies and materials unknown in the West.

Their models of non-linear quantum mechanics, plasma physics, atomic engineering, nuclear physics and related mathematical and theoretical constructs, which made their development possible, are so unique that they challenge the validity of the most fundamental assumptions embodied in the Copenhagen Interpretation model currently held in general acceptance in the West.

For example, Western-developed particle/wave quantum mechanics is described by Einstein's $E = MC^2$. The Soviet nonlinear model of quantum mechanics is described by the formula $E = M_K v$ [Energy = Mass @ rest as a function of a mathematical constant].

Einstein's theory of relativity assumes that the speed of light is constant. However, measurements have shown that the speed of light has slowed down 7 per cent over the past two centuries. (See http://worldnetdaily.com/news/article.asp?ARTICLE_ID=39733.) Einstein's famous equation is therefore not based on the real world of peer-reviewed experimental results. Consequently the more correct Soviet model has enabled numerous technical advances not even dreamed of by Western science.

Among several energy inventions developed by the IPMS are free-standing thorium-227 isotope electric power generating plants. They can be small enough to power a single home and large enough to power whole communities. They also can operate for up to 18 years without ever requiring refueling or maintenance.

Micro-Fusion Reactor Employing Stable High-Density Plasma Electron Spiral Toroids In Neutron Tube

Electron Power Systems, Inc., (EPS) has discovered the explanation for ball lightning and from that has invented and protected with five patents an Electron Spiral Toroid Spheromak micro-fusion reactor. Safe, pollution-free micro-fusion reactor-powered generators could reliably generate electricity with capacities ranging from 10 kilowatts through 1000 megawatts at the cost of 10% of today's electricity. All transportation vehicles could be reliably and safely powered with micro-fusion reactors with substantially lower production, operating and maintenance costs and without poisonous emissions. EPS expects to reduce the mass and cost of aircraft by 70%, and space launch costs by more than 95%.

Each year 15 million cars and trucks are sold in the USA, and 48 million are sold worldwide. EPS expects to eventually replace all of them with silent, reliable, safe, emissions-free micro-fusion reactor powered electric vehicles with substantially lower production, operating, and maintenance costs.

In addition, EPS has designed a 10kW generator that will operate on clean, non-polluting fuel, and can operate locally. This innovation will potentially improve the lives of most of humanity by making available low cost electricity that anyone can produce in their own homes. It will help literally billions of people. The paper design shows that the EPS generator will be the approximate

size and cost of a 10 kW generator available today in any hardware store, with the advantage that it will not use fossil fuels, but will use clean energy instead.

An article in the Institute of Electrical and Electronic Engineers, Inc., Spectrum magazine over ten years ago stated that world demand for electricity increases approximately 500 megawatts every day. To put this in perspective, the equivalent of another Hoover Dam would have to be built every four days to keep up with world electricity increase demands. The EPS innovation will make local generation possible without the need for more power plants or more power lines.

Major contributors to air and water pollution are the fossil-fueled engines of aircraft, farm harvesters and tractors, ships, boats, snowmobiles, trains, military vehicles, and all-terrain vehicles. Their engines could be replaced with cheaper electric motors and batteries charged by safe, non-polluting onboard micro-fusion reactor powered generators.

Electron Power Systems, Inc., (EPS) is an early stage company working to develop the Electron Spiral Toroid Spheromak micro-fusion reactor. From EPS will come new applications, including a practical micro-fusion electricity generator, a low-cost space launch vehicle, a high-kinetic energy anti-missile beam, and practical zero-emission cars, trucks, buses, farm equipment, construction equipment, military vehicles, and jet aircraft.

EPS is moving to commercialize these concepts. EPS has assembled a team of engineers, and plasma physicists, all as contractors. EPS is working on proof of concept demonstrations for the applications.

EPS plans to build a laboratory demonstration unit in two to three years with present funding levels, and then the first commercial prototype. Recent breakthroughs in the EPS lab give confidence this will happen within this timeframe. More funding will make this happen sooner.

EPS is seeking \$2 million as a first round of investment to complete the development of a demonstration unit in eighteen months. A second investment of \$8 million will be needed to complete a prototype unit in eighteen months after the demonstration unit.

Up until now EPS has had no sales and operates with funding from angel investors, each of whom is retired and has accumulated a substantial personal fortune, allowing these types of investments of high risk, high reward. EPS also operates with funding from the founder.

EPS operates on a low budget, spends only what it has, and has incurred no debt or obligations. In this manner it is able to operate indefinitely, while continuing to make progress each year. Additional small amounts of funding will speed developments.

EPS has made a new discovery in physics with the potential to locally produce low-cost, clean energy for homes and buildings, independent of power plants. EPS owns the new technology and plans to initially produce a safe, clean, 10-kilowatt electricity generator that needs no nuclear fuels nor fossil fuels and will produce no green house gases. A home owner would need a one-liter sized container of environmentally benign hydrogen/boron fuel per year at a 20:1 fuel cost savings compared to commercially produced electricity or fossil fuels.

EPS's new discovery would allow anyone worldwide to buy a small home generator, about the size but less than the cost of a Sears 10-kilowatt portable generator. It would power their home plus

several nearby homes even where there are no power grids or power plants. This will be a step towards providing low-cost, local electricity to help eliminate poverty worldwide.

EPS plans to build 10-kilowatt generators by applying its newly discovered technology to improve work done by others to create energy. The basic work was shown successfully in the 1980s at the University of Miami. But that technology had limitations at that time. EPS's new technology will overcome those limitations.

From a modest start with producing 10-kilowatt micro-fusion reactor powered generators, EPS expects to branch out to other applications of its technology as well as producing larger and larger generators.

Mankind's practically insatiable demand for energy implies a simply humongous market potential for EPS which would encompass all of the world's producers of oil, coal, uranium and electricity plus all manufacturers of transportation vehicles including cars, trucks, buses, farm equipment, ships, boats, construction equipment, trains, satellites, aircraft, snowmobiles, and military vehicles.

Several thousand neutron tubes are in use in the USA today that safely collide hydrogen ions to produce neutrons, which in turn are used for medical testing, industrial process control, and homeland security. An ion source produces hydrogen ions (deuterium), which are accelerated to 110 kilovolts, then directed to hit a hydrogen target (also deuterium), which produces neutrons, and also heat as a waste product. Neutron tubes today produce neutrons and a low level of heat energy. The low density of the hydrogen ions limits the amount of energy produced.

In the 1970's, Dr. Wells at the University of Miami collided two plasma toroids to produce low-level fusion energy in the TRISOPS system. The amount of energy produced was limited by the short duration time of the plasma toroids used, as well as their low density and their low level of energy.

Electron Power Systems, Inc., (www.electronpowersystems.com) has discovered a plasma electron spiral toroid that remains stable without magnetic confinement, by using background gas pressure for confinement instead. These new plasma toroids are observed to remain stable for thousands of times longer than classical plasma toroids, which opens the way for new clean energy applications.

EPS's new stable plasma electron spiral toroids overcomes each of the neutron tubes limitations, and will potentially result in fusion with no magnetic containment required – thus producing a practical micro-fusion reactor. EPS's challenge is to adapt the new stable plasma toroid to the TRISOPS method.

The micro-fusion reactor adapts the Electron Spiral Toroid (EST) Spheromak to the neutron tube design. The EST Spheromak is patented jointly with MIT scientists who also have published papers confirming the EST Spheromak physics and data. The EST Spheromak will overcome the neutron tube limitations by increasing ion density by 2500 times. A metal containment can be used for efficient heat energy collection and conversion.

The EST Spheromak micro-fusion reactor will be less than three feet in length, the same as for present neutron tubes, and small enough to fit in an electric car. Elimination of the need for magnetic containment allows this power supply to be small and compact. A micro-fusion reactor will use hydrogen/boron to produce clean energy without neutrons. The energy in one pound of

hydrogen/boron fuel equals the energy of 250,000 pounds of gasoline. Hydrogen and boron are plentiful and will not run out, as oil is projected to do in the 21st century.

The Electron Spiral Toroid Spheromak (ESTS) is a plasma toroid that is self-organized and self-stable with no magnetic fields needed to contain it. Inventor Clint Seward has not seen any published descriptions of any devices nor phenomena similar to the ESTS. The US Patent Office agrees and has issued five patents.

The micro-fusion reactor was recently selected by the New Energy Congress as one of the few technologies now known to have a genuine potential to replace fossil fuels. See the lengthy analysis of the micro-fusion reactor in http://pesn.com/2006/03/08/9600242_Spheromak_Plasma_Toroid/.

"Locomotive Power Sources" for high-speed rail in www.padrak.com/vesperman includes the micro-fusion reactor with BlackLight Power's hydrino generator, focus fusion, Robert Dratch's thorium powerpack, Kiev, Ukraine's I.N. Frantsevich Institute of Problems of Materials Sciences (IPMS) thorium-227 electricity generator, Clem over-unity vegetable oil engine, thin-film electrolytic cells, noble gas plasma engine, Searl effect generator, Magnatron - light-activated cold fusion magnetic motor, Oleg Gritsevich's hydro-magnetic dynamo, IPMS energy storage/battery device, metamatter which is solid crystallized fully-ionized plasma, Gordon Ziegler's electrino fusion power reactor, and environmental heat engines.

Some of these listed new energy inventions appear to have at least one limitation that is not shared with the ESTS micro-fusion reactor.

The Electron Spiral Toroid Spheromak (ESTS) micro-fusion reactor has five patents and is documented in published papers confirming the physics and data. (1), (2), (3), (4)

Clint Seward discovered the ESTS (5) while studying ball lightning. Seward has developed a secret formula to produce the ESTS that is not reported in any other reference to date that he has seen.

Why this is important is that all spheromaks reported to date dissipate in microseconds, while the ESTS has been observed to endure with no confining magnetic field for hundreds of milliseconds, and theoretically will remain stable for many seconds.

1. Seward, C., Chen, C., Ware, K., Ball Lightning Explained as a Stable Plasma Toroid. PPPS-2001 Pulsed Power Plasma Science Conference, June 2001.
2. D. C. Seward, C. Chen, R. Temkin, Energy Storage Device, US Patent 6,140,752, Oct. 31, 2000.
3. C. Chen, R. Pakter, and D.C. Seward, Equilibrium and Stability Properties of Self-Organized Electron Spiral Toroids, Physics of Plasmas. Vol. 8, No. 10. Oct. 2001.
4. W. J. Guss, Chen, C., Equilibrium of Self-Organized Electron Spiral Toroids. Physics of Plasmas. August 2002.
5. Seward, C., Ball Lightning Explanation, Leading to Clean Energy. Acton, MA 01720. Seward Publishing Co., 2011.

EPS plans to initially produce a safe, clean, 10-kilowatt electricity generator that needs no nuclear fuels nor fossil fuels and will produce no green house gases. A home owner would need a one-liter sized container of environmentally benign hydrogen/boron fuel per year at a 20:1 fuel cost savings compared to commercially produced electricity or fossil fuels.

But first EPS needs to obtain \$2 million as a first round of investment to complete the development of a demonstration unit in eighteen months. A second investment of \$8 million will then be needed to complete a prototype unit in eighteen months after the demonstration unit.

EPS's new discovery would allow anyone worldwide to buy a small home generator, about the size but less than the cost of a Sears 10-kilowatt portable generator. It would power their home plus several nearby homes even where there are no power grids or power plants. This will be a step towards providing low-cost, local electricity to help eliminate poverty worldwide.

From a modest start producing clean, reliable, safe 10-kilowatt micro-fusion reactor powered generators, EPS plans to methodically produce larger and larger generators. EPS even has a preliminary design with supporting calculations for massive 1000-megawatt baseload generators.

Mankind's demand for energy implies an enormous market for micro-fusion reactors encompassing all of the world's producers of oil, coal, uranium and electricity plus all manufacturers of transportation vehicles including cars, trucks, buses, farm equipment, ships, boats, trains, satellites, aircraft, mining equipment, snowmobiles, construction equipment, and military vehicles.

Countries which export oil will benefit from not having to quickly burn up their finite oil reserves on cheap gasoline and diesel fuel. Instead they will be able to draw down their reserves more slowly by making products of higher value such as plastics, medicines, fertilizers and synthetic textiles.

Some years ago a Forbes article stated that PECO (formerly Philadelphia Electric Company), with an income stream to back it up, was able to sell on Wall Street \$4 billion worth of bonds paying 5.8 per cent. A micro-fusion reactor powered generator manufacturer could simply sell bonds to build and operate generators at a low interest rate. Generator loan payback times may be in the ball park of a half-year to a year, depending on the local electricity market price. As soon as a micro-fusion powered generator is paid for, the revenue from that time on would be almost pure profit. Once a track record is established by successfully installing a few micro-fusion reactor powered generators, Electron Power Systems, Inc., could raise money to build and install more generators by simply selling billions of dollars of bonds instead of stock. So therefore, there wouldn't be any dilution of ownership.

EPS plans to partner with major electricity producers and suppliers. EPS will license them to produce electricity as they do now. EPS plans to partner with automobile manufacturers to license the technology. EPS plans to partner with defense and aerospace contractors to license the technology.

MANAGEMENT

Clint Seward is the discoverer of the Electron Spiral Toroid Spheromak and received the initial patents. He has been working ever since to scale up the results, which he has been able to do recently. He has been a project design engineer and program manager for many years, working initially with the US Air Force B-58 Hustler program, and as a project manager and engineering

manager in several major corporations. His work was defense initially, moving to security and process control, then energy related.

Clint was an Engineering Manager for Mosler, an American Standard Division 1970 thru 1978, and an Engineering Manager and VP of Marketing for Bristol-Babcock 1978-1985 – an ACCO fortune 500 Company. He was General Manager of Iontrack, a Division of a large international company 1985-1989 (now a Division of GE). He has been President of his own company Electron Power Systems, Inc. from 1989 to present.

Education: MSEE; University of Michigan 1965; BS at US Military Academy at West Point 1963.

D C Seward is the VP Engineering of Electron Power Systems, Inc. He has worked on the micro-fusion reactor technology since its inception in 1986. He has the responsibility for organizing the experiments and bringing qualified people in to help with the work. DC has worked as the VP Engineering of EPS on a contract basis from 1998-Present as funding allows. He is employed full time as a Field Sales engineer for Ember Systems, a wireless technology company, 2005-Present. Previously he was a Product Design Engineer, Trimble Navigation: 1994-1998

Education: MSEE Massachusetts Institute of Technology, 1994.

Jim Becker is acting CEO and Marketing VP. Jim has experience as a senior executive in the high tech sector with extensive experience managing rapid growth organizations. He has a broad technology background with proven skills in computer systems, avionics industries, and health care information technology along with direct functional experience in finance, sales, marketing, engineering and corporate management in both domestic and international settings.

Education: Thayer School of Engineering, Dartmouth College; Master of Engineering 1976; Master of Business Administration 1975; Bachelor of Engineering 1970.

PAPERS AND PATENTS for Clint Seward:

Chen, C., Pakter, R., Seward, D. C. "Equilibrium and Stability Properties of Self-Organized Electron Spiral Toroids." Physics of Plasmas. Vol. 8, No. 10. October 2001.

Seward, C., Chen, C., Ware, K. "Ball Lightning Explained as a Stable Plasma Toroid." PPPS-2001 Pulsed Power Plasma Science Conference. June 2001.

Seward, C. "Propulsion Using a Stable Plasma Thruster." STAIF 2001, (Space Technology and Applications International Forum-2001). American Institute of Physics , www.aip.org/catalog/conforder.html. February 15, 2001.

Seward, C.; Chen, C., Temkin, R. ENERGY STORAGE DEVICE , US Patent 6,140,752, October 31, 2000.

Seward, D. C. Electron Spiral Toroid; US Patent 5,773,919; June 30, 1998.

Seward, D. C. Energy Storage System, US Patent No. 5,589,727. December 31, 1996.

Seward, D. C., Chen, C., Temkin, R. (1996b). International Patent Application WO 96/38848, Energy Storage Device, Published December 5, 1996.

Seward, D. C. Fixed Geometry Plasma and Generator, US Patent 5,175,466. Dec. 29, 1992.

ESP's President Clint Seward collaborated with Gary Vesperman in writing a description of Seward's invention in www.padrak.com/vesperman. See "Locomotive Power Sources".

The Products page of www.electronpowersystems.com sells a book "Ball Lightning: Leading to Clean Energy" and a paper "Spheromaks Observed Forming in Atmosphere". Paper's abstract:

Plasma toroids, called spheromaks, are reported here as observed forming in partial atmosphere from high power electric arc events similar in power to lightning ground strokes. The spheromaks are observed to be stable in partial atmosphere with no confining magnetic fields and are observed to last for more than 200 milliseconds in partial atmosphere. This paper describes the observations and presents a model that explains the properties of these spheromaks, which we call Electron Spiral Toroid Spheromaks (ESTS's) due to the spiraling motion of the charged particles. It includes four TV images. The model presented is a hollow toroid with a thin outer shell of electrons that all travel in parallel paths orthogonal to the toroid circumference, in effect spiraling around the toroid. A comparable inner surface of ions acts to neutralize the space charge. The paper provides formulas describing the ESTS. Potential ESTS applications include X-ray production, air defense, and energy production.

The cost to produce a 10-kilowatt EST Spheromak electricity generator would be about \$1100 in production quantities. The EST Spheromak generator would have fewer parts than a comparable Sears generator.

Electron Power Systems, Inc., does not have a working prototype. The company has identified the instrumentation and needs another \$100,000 for laboratory work. With \$2,000,000, the company expects to have in two years a demonstrable prototype. In an additional year for \$8,000,000 a production prototype is expected to be built. Remember, each piece of the project uses technology others have demonstrated.

Clem Over-Unity Vegetable Oil Engine

Richard Clem was a heavy equipment operator who had noticed that a hot asphalt sprayer would continue to run for up to an hour even after the power was turned off! So he built a modified version as a 200-pound engine which ran on vegetable oil at 300 degrees and was started by a 12-volt battery. The heat is internally generated by the engine. During a nine-day test conducted by Bendix Corporation engineers, the engine in its self-running mode consistently generated 350 horsepower into a dynamometer. The engine is constructed from off-the-shelf components except for a hollow shaft and a custom cone with enclosed spiral channels.

If the automobile industry adopts the Clem over-unity engine, motorists could change its eight gallons of vegetable oil only every 150,000 miles and never buy any gasoline. To illustrate the engine's durability, the only working model of the Clem engine has been continually running on his son's farm for several years.

Combining the Clem over-unity engine with the hydrosonic pump could provide distilled ocean water as well as hot water for space heating, kitchens, and bathrooms at *no* energy cost.

The Clem over-unity vegetable-oil engine is not patented. It may be fairly straightforward to set up a small machine shop for manufacturing hollow shafts and cones.

Thin-Film Electrolytic Cells

A number of seasoned technology integrators have developed thin-film energy storage technologies which hold considerable promise. Dr. George Miley, Dr. Robert Hockaday and others have developed thin film technologies with energy densities exceeding 250-400 watt hours per kilogram. Dr. Miley's invention is illustrative. Using a flowing pack-bed type electrolytic cell with 1-molar LiSO_4 in light water, 1mm plastic beads with a very thin [500-1,000 angstrom] film of metal [nickel, palladium, titanium] are employed. A special sputtering technique is used to spray the metals onto the surface of the beads. With 2-3 volts of electrical power and 1.5 milliamperes of current, the single film experiments have shown the material to produce more than 10 times as much output power as input. The input power is no more than 0.01 watts while .5 watt of heat is produced.

It is likely that the physics involved in this reaction involve the release of energy as a by-product of nuclear transmutation. Dr. Miley has written, "The key finding from these studies has been the observation of a large array of "new" elements (i.e., different from the original bead coating), many with significant deviations from natural isotopic compositions, after the run.

Great care has been made to ensure that these elements are distinguished from isotopic impurities by use of a "clean cell" with high purity components and electrolytes, in addition to the pre-and post-run analyses. Even low-energy radiation was detected from the bead days after each experiment. Applications to space power, providing a 1-kilowatt cell with only 500 cubic centimeters of active electrode is predicted." Note that this particular invention, with its large over-unity energy yield, was awarded a NERI grant by the DOE. At the insistent urging of the American Physical Society and representatives from MIT and other universities whose laboratories are currently engaged in high-temperature gas-cooled nuclear reactor research, Secretary Richardson eventually withdrew the grant. The tangle-footed Department of Energy actively discourages the development of new sources of energy, presumably to appease the oil, uranium and coal companies. The U.S. Patent Office has unfairly classified secret nearly 5000 energy patents. Luckless energy inventors then risk 20 years in prison if they work on, sell, or publicize their energy invention – often created at great personal sacrifice.

Searl Effect Generator

The Searl effect generator (SEG) can be used to charge the batteries in a self-powered electric vehicle. A solid-state device, the heart of an SEG is a series of three concentric magnetic rings with magnetic rollers going around the rings. Both the rollers and rings are comprised of four layers of titanium, iron, nylon, and neodymium.

The magnetic fields impressed on the rollers have both AC and DC components. The AC component is for floating the rollers so they don't touch the rings. The DC component is to prevent them from flying off. The innermost set contains a minimum of 12 rollers for the same reason that a linear motor will not operate with less than 12 phases.

The inner set of rollers travel around at 250 miles per hour, the middle set travels at approximately 600 miles per hour, and the outer set at approximately 1500 miles per hour. Hundreds of millions of volts are generated the energy of which is picked up by brushes positioned all around the outside set of rollers.

An SEG also creates an anti-gravity field. An uncontrolled SEG will rise about 50 feet as the rollers increase speed, emit a light blue halo which indicates energy is being extracted from the ether, and then shoot up into the sky gaining speed, never to be seen again. At least one roof has been holed by an SEG. The friction-less rollers can be prevented from reaching the critical velocity that produces lift by use of a “governor”, either mechanical or electronic.

An SEG can be easily controlled by immersing it in an electromagnetic wave field the frequency of which is a harmonic of the SEG’s primary frequency. While in resonance, the magnetic poles of the rollers reach a unification state, and they stop moving.

The inventor has built and flown a small “inverse gravity” vehicle. A flying saucer-like SEG-powered aircraft about the size of a bus is currently being built in England by a private group.

The inventor for some years independently powered his house off the power grid with a home-sized electrical generator version of the SEG. A householder could set up a 45 x 45-cm unit and generate an output of 11 kilowatts of free electrical power.

Oddly, a house powered by an SEG has been observed to have greater healing powers than conventionally electric powered houses. The healing effect is claimed to be due to the electrons zapping the occupants, taking away pain and returning blood more quickly to damaged tissue. The SEG would also help combat asthma, bronchitis, hay fever and lung complaints due to the increased supply of oxygen in the body. Conventional methods of electric power do not pump out electrons which results in tired eyes and a tired brain.

The SEG's negative charge also means that dust stays in the carpet instead of floating in the air. This is similar in action to negative ion generators sometimes sold as air fresheners.

Two Russian scientists replicated the Searl effect generator and vindicated all of these somewhat unusual claims. See their paper “Experimental Research of the Magnetic-Gravity Effects”, V. V. Roschin and S. M. Godin, Institute for High Temperatures, Russian Academy of Science, Izhorskaya 13/19, Moscow 127412, Russia.

At one time, a German power company reportedly considered replacing a nuclear power station with eight fuel-less SEGs costing a total of about \$4.5 million and generating a total of 240 megawatts with no pollution.

Noble Gas Plasma Engine

Joseph Papp was granted US Patent #3,670,494 for his “Noble Gas Plasma Engine”. A mixture of recycled inert gases (helium, neon, argon, krypton, and xenon) is exposed to a high-voltage discharge in a sealed cylinder with a piston. The spark causes the gases to expand violently though no combustion occurs. Mechanical energy is delivered by the piston's displacement. The gases immediately collapse to their original density, and the cycle is repeated. After several thousand hours the gases lose their elasticity and are replaced. The operating cost is 15 cents an hour.

The first prototype was a simple 90-horsepower Volvo engine with upper end modifications. Attaching the Volvo pistons to pistons fitting the sealed cylinders, the engine worked perfectly with an output of three hundred horsepower. The inventor claimed it would cost about twenty five dollars to charge each cylinder every sixty thousand miles.

There were indications that such an engine could provide its own electrical power and being a closed system, require no fuel. It is not by definition an electromagnetic engine, however. It is believed that at the heart of the Papp engine is the development of high-density electrical charge clusters which provide the energy to expand the gases.

Other patents are 5319336, 4151431, 3670494, 4046167 - Mechanical Accumulator, 3680431 - Method and Means for Generating Explosive Forces, and 4,428,193 - Inert Gas Fuel, Fuel Preparation Apparatus and System for Extracting Useful Work from the Fuel.

Magnatron – Light-Activated Cold Fusion Magnetic Motor

During the late 1970's Howard Rory Johnson, a brilliant inventor in Elgin, Illinois, combined light-activated cold fusion with a new type of magnetic motor into a "Magnatron". His prototype Magnatron produced 525 horsepower but only weighed 475 pounds. It could propel a large truck or bus 100,000 miles on about 17 ounces of deuterium and 1.5 ounces of gallium before being recharged. This was years before either Pons and Fleischman or Dr. James Patterson entered the scene with their cold-fusion technology.

Johnson discovered the light-activated cold fusion portion of the Magnatron by accident when as he was developing a new type of electronic circuit using deuterium oxide and gallium, he noticed the two materials were producing energy on their own. He could not figure out what was triggering the energy production for some time until he finally discovered it was light.

The Magnatron's flow of deuterium (an isotope of hydrogen) is controlled by magnetic tunnels. At the point where the deuterium strikes the gallium (a heavy metal electron donor), a beam of light from a diffraction prism forces their fusion. That controlled reaction results in the fusion of two atoms forming a new atom. In the process, electricity is released, and that is what powers the magnetic motor. The Magnatron is sealed, however, so 'light' is provided from photon energy produced from coils tied directly to the motor. It is more or less a pulse-generated system.

A photon is a football-shaped particle of electromagnetic wave energy. Its energy content is a product of its frequency f and Planck's constant h . When an electron in orbit around the nucleus of an atom drops to a lower, less energetic orbit, a photon containing the energy equivalent to the electron's energy drop is emitted. This explains why light and other forms of electromagnetic energy such as gamma rays and radar are sometimes observed as particles and other times as waves. The heated filament of a light bulb is an example of photon production.

There is no way to explain, using contemporary electrical theory, how his relatively small motor could produce such tremendous horsepower. Utilizing his own new electrical-magnetic energy theory, involving a process he called "attract-attract", Johnson exploited the magnetic field. He used the top and bottom rotors in his motor. First, the top rotor attracted, released; then the bottom rotor attracted, released. The action of attraction, alternating between upper and lower magnets, used the windings to complete the attract field.

Robert Nelson's compilation of articles about the Magnatron provides much more technical detail on the Magnatron than the foregoing. (See <http://www.rexresearch.com/magnatron/magnatron.htm>.)

Johnson constructed his prototype Magnatron's 525-horsepower magnetic motor without any of the hardware that is presently used in present state-of-the-art electric motors. Conventional motors use the accepted principle of attract-repel, an energy form that doesn't utilize the magnetic field to its greatest advantage. For comparison, a typical 500-horsepower electric motor has wires exiting it that are the size of a garden hose.

The sealed self-contained Magnatron has no wires. Thus, other than the Magnatron's infrequent refueling with small amounts of deuterium and gallium, the stand-alone Magnatron uses no input power. The Magnatron's entire output power is conveyed by its magnetic motor's rotating shaft.

Fuel for the Magnatron is plentiful: deuterium is derived from water, and gallium is extracted from abundant aluminum bauxite. Commercially available pure gallium is still scarce and expensive. It may well be possible, however, to cheaply transmute another less expensive element into gallium. See Gary Vesperman's list of over two dozen methods of neutralizing radioactive waste in <http://freeenergynews.com/Directory/NuclearRemediation/Vesperman/> which includes possible transmutation methods. Additional methods are briefly described in <http://freeenergynews.com/Directory/NuclearRemediation/>. Dr. Santilli's method plus an explanation of suppression of radioactivity neutralization methods are available at <http://www.nuclearwasterecycling.com/>. Robert A. Nelson's survey "Transmutations of Nuclear Waste" is at <http://www.rexresearch.com/articles/nukewa.htm>.

The Magnatron uses no fossil fuel in its operation, and it emits no pollution. The magnetic motor's RPM is 8,000 with a gear ratio of 2:1. Lubrication for the sealed motor is synthetic motor oil which does not need changing and does not need a filter, because foreign materials such as carbon and varnish are not introduced into the system, as they are in the internal combustion piston engine.

This writer, Gary Vesperman, attended the 3rd International Symposium on New Energy in Denver, CO (April 25-28, 1996). I remember being impressed by Gerald Orłowski's lecture "Magnatron, Fusion Magnetic Motor", during which he provided substantial technical information on the Magnatron.

Orłowski reported that, "Some inside information revealed that OPEC had been keeping track of all competitive technology", and Johnson was #1 on their hit list! Johnson was about to manufacture the motors through a nationwide dealership. Some motors still exist, but the owner wants several million dollars for them."

This writer Gary Vesperman knows of very few inventions of new energy sources which are reasonably large stand-alone energy producers. Besides the Magnatron, they include Oleg Gritskevitch's hydromagnetic dynamo, and Electron Power Systems' micro-fusion reactor, which employs stable high-density plasma electron spiral toroids. Almost all inventions of new energy sources are, or claimed to be, relatively small over-unity power converters that convert input power to greater amounts of output power. Bob Dratch's thorium powerpack is an exception (see above).

At the September 14, 2005 public meeting in Green Valley Ranch casino regarding the proposed Regional Fixed Guideway traversing Las Vegas, Nevada, this writer Gary Vesperman submitted comments suggesting possible power sources for the train, including descriptions of the hydromagnetic dynamo and the micro-fusion reactor (<http://www.rtcsonthernnevada.com/rfg/documents/September2005PublicMeetingMinutes.pdf>, pp. 19-77).

No wonder the Magnatron's inventor, Rory Johnson, was rumored to have been "Number One" on Organization of Petroleum Exporting Countries (OPEC)'s hit list.

The following is an excerpt, slightly edited, from Orlowski's lecture transcript where he tells about his unwitting personal involvement with the U.S. Government's suppression of the Magnatron:

"After I saw the Magnatron motor, my life changed. I was no longer a happy camper working by myself in a wonderful, fully equipped research machine shop for the Greyhound/Armour Corporation in Arizona. While on a business trip, I saw this motor running in the Magnatron, Inc.'s showroom located in Elgin, Illinois.

"During my 15 years of electric motor repair, among the hundreds of motors I repaired, I rewound a 500 HP electric motor. That motor had wires exiting it that were the size of a garden hose. The Johnson motor being shown had NO wires. Surely this motor was unreal, a con-job to get money for dealerships. Yes, there he was, Rory Johnson standing next to his sealed self-contained electric motor.

"Upon returning to the Greyhound Towers and telling them what I had seen, they instructed me to call Mr. Johnson. Greyhound wanted Johnson to put forth a plan to install a motor in one of their buses for testing purposes.

"I called Johnson. He was delighted that a Greyhound employee had seen the motor running, and replied that the testing idea was acceptable. He would set a time frame for just when a bus should be delivered to him.

"Two years went by, with no business proposal from Johnson. Then, his former business partner, Mike Marzicola, called to say Johnson had passed away. He wanted me to work with him to get one of the motors running. I flew to Orange County, CA, saw the motor, took pictures, and put forth a plan to Greyhound. Subject to a contract with Marzicola, one of the old worn motors would be brought to the research shop. I would then very carefully reconnect the generator wires that Johnson had cut off prior to moving from Elgin, IL to California.

"Discussions with Marzicola brought out that the U.S. Government (given the authority by the Congress of 1952) had issued a GRAB order to take Johnson's motors. Rumor has it, the DOE is run by US oil companies and OPEC, and they want no competition, period. Because of this grab order, Johnson had cut the generator wires. He had then put his 'total shop', with motors and all, on several U-Haul trucks and left Illinois in the middle of the night. He went to California to re-establish his business. But before he could get a motor running, he passed away.

"Surely, Greyhound would agree to let me re-start one of Johnson's motors. The wonderful proposal put forth to Greyhound was rejected by mail. Very agitated, I went to the top office at Greyhound demanding an explanation. I was met at the door with the comment, "We know why you are here." Knowing the potential savings to the bus company, surely they could have only one reason for rejecting the proposal. They must have believed I was not qualified to start up the motor.

"Greyhound's top legal advisor stated he was present when the Greyhound board met and discussed my written proposal. He stated the following, "At NO time was the thought put forth that you would not succeed. In fact, we discussed all of the hardware designed and constructed by you, and started the conversation from what happens when Greyhound has a running motor. We contacted a State representative who felt this motor should not be allowed to be used in 4,000+ buses. The loss in tax

dollars for fuel alone would be a very huge sum.” He then asked me to leave, stating he was sorry that he had to tell me the reason the plan was rejected.

“Telling Marzicola of the rejection, I offered to personally put in a few thousand dollars toward the parts to get one motor running. In return, I would be assigned the dealership for the Phoenix metropolitan area. We signed legal papers in exchange for the money agreed on, and went to work. (I still have the signed dealership.)

“The first thing I noticed was that someone had been working on repairing the motors. Three motors already had new commutator assemblies installed. Each assembly consisted of 3 commutator assemblies on one insulated tube with a metal case to secure it to the shaft.

“One motor still had the old worn commutator assembly, as it had not yet been repaired.”

Orlowski goes on to describe his reconstruction efforts and includes interesting technical details about the Magnatron’s structure and theory.

Johnson did not know that OPEC tracks all potential competition to its oil business and that he was reportedly number one on OPEC’s hit list. His first mistake was publicizing, in many magazines, his plans to manufacture and distribute his revolutionary motor.

Erik Masen has spoken with a few people who even signed up for distributorships. Erik Masen had included Johnson and his Magnatron in his energy invention suppression anthology (see http://www.electrifyingtimes.com/erik_masen_suppression.html).

In 1979, Johnson placed his engine in a Buick Electra and was preparing to drive it around the country to sign up more distributorships when the US Department of Energy and the State of Illinois teamed up to prohibit his company Magnatron, Inc., from producing and selling Magnatrons. They first placed a gag order on all the people in the company by using the Secrecy Act of 1952.

Secondly, the State of Illinois immediately requested the company to provide information about all of their employees, distributors, stockholders, investors, suppliers, etc. They asked questions that blatantly deny anyone’s constitutional rights to privacy. The pressure from the State of Illinois became so overwhelming that Johnson decided to move his entire business to California in the middle of the night.

After a year of hearing nothing but silence from Johnson, Greyhound agents tried to contact him – only to be notified that he had passed away unexpectedly. This is a particularly troubling part of the story, since he had been in his early fifties and in robust health. Later, Greyhound learned that shortly before he died, Johnson had inexplicably moved out of his laboratory in the middle of the night and taken all of his motors and technology to California.

Bob Bass, in his report copied below on low-energy nuclear transmutation, claims that the CIA, the KGB and the Mossad, etc. all have "sprays" which can be sprayed upon someone and cause him or her to die of apparently natural causes. One speculation is that Johnson’s death – apparently due to heart failure – had been artificially induced by such a spray.

In a January 20, 2007 email to Gary Vesperman, Terry Sisson reports:

“Hi Gary,

“I visited Magnatron, Inc., in July 1979. I wish I would have taken a photo. Placards were placed over every inch of the large windows in the front of the building listing all of the questions the State of Illinois requested his company to provide. He wrote, “When has the government ever had the right to ask this of any company.” I peeked in the front window and saw one of his motors mounted on an engine stand. Nobody appeared to be there so I walked around to the rear of the building. I found the rear garage door open and could see the Buick Electra inside. I was about to approach nearer when a man emerged. We talked, but he quickly informed me that due to a US gag order he was unable to talk about anything. I managed to get his phone number and called him from time to time for years following. He was an assistant of Rory’s and he kept the information very close to the vest. He did tell me that it was real and it worked, yet not how it worked.

“About 1984, I began to call all the Johnsons in the phone book in Elgin. I finally got a hold of Rory’s son. He too said that it was real, but I got nowhere. Around 1992, I met Jerry Orlowski, and he told me his experience as the employee of Greyhound who was sent to investigate the technology, since he wound electric motors for several years. Jerry was very upset about the whole incident, particularly Greyhound’s Board of Directors refusal to utilize the technology after he found the technology to be authentic. Jerry even witnessed the government’s seizure of the motors in California. --- Terry Sisson.”

Hydro-Magnetic Dynamo

The hydro-magnetic dynamo is a doughnut-shaped large-scale emission-free electrical generator which does not require external fueling and operates safely, reliably and silently at moderate temperatures. The dynamo is capable of powering larger transportation vehicles such as buses, trucks, ships, locomotives, and airplanes. Doubt remains about making dynamos compact enough to power automobiles.

The circumstantial evidence for the Russian inventor’s performance claims for his hydro-magnetic dynamo is reasonably strong. While three experimental prototypes have been built with Russian and Armenian expertise and equipment, a fourth demonstration prototype needs to be built with more modern Western engineering expertise and equipment to verify dynamo performance claims and to further explore the dynamo’s potential capabilities. Performance claims are as follows:

Hydro-magnetic dynamos are scalable from 100 kilowatts to 1,000 megawatts. One doughnut-shaped, fuel-less 1000-megawatt dynamo is about the size of a two-car garage. For comparison, Hoover Dam’s 17 generators have a total nameplate capacity of 2,080 megawatts. Seven 1000-megawatt dynamos can be vertically stacked to comprise a single 7000-megawatt dynamo.

A dynamo can reliably run continuously for 25 years or more with little or no maintenance, no external fuel source, and no pollution. If a dynamo’s output is 1,000,000 watts, its total input power is approximately 10,000 watts. So the dynamo’s energy efficiency is 10,000%, or 100 to 1.

The source of the dynamo’s massive electrical output is a nuclear reaction which is not generally known to mainstream science. However, it is known that the dynamo produces alpha particles which are helium nuclei made from fused deuterium, an isotope of hydrogen with one proton and one neutron. The electrons missing from the helium nuclei are what seem to provide a copious “sink” of electricity, and which happen to be the secret to the dynamo’s ability to generate an exceptionally large amount of electricity.

It is also known that the dynamo uses high-density charge clusters. High-density charge clusters are the basis of plasma-injected transmutation of elements and also neutralization of radioactive materials.

There were three dynamo prototypes built. The first two small experimental prototypes were built in Vladivostok. The third and last prototype continuously generated electricity, except when turned off to incorporate improvements, from 1992 to January 1997 in Armenia. (It was sadly destroyed during an armed rebellion by local religious fanatics who were unhappy with the Armenian government.) It generated a constant current of 6,800 amperes at 220 volts DC. That multiplies out to nearly 1.5 megawatts. The Armenian prototype dynamo's toroid weighed 900 kilograms and had a diameter of approximately 2 meters.

Cooling water is circulated through copper pipes wrapped around the toroid. The heat is expelled from the cooling water with a heat exchanger.

After a dynamo is assembled in a factory, the water is literally jump-started (by discharging a large bank of capacitors) to moving around the toroid. The dynamo's controls are temporarily set to generating enough of a modest amount of electricity to sustain itself, even while being transported from the factory to its site. For the Armenian prototype dynamo, two 10-farad capacitor banks (from Russian military radar stations) were used to provide the initial water motion (acceleration and excitation of water). Using a total of 20,000 joules, 100,000 volts with 0.05 amperes of current were applied to the Armenian dynamo for 3 - 5 minutes for starting its generation of electricity.

After these Russian radar capacitors were used to jump-start the Armenian prototype dynamo, a bank of buffer batteries sustained continuous operation when water motion and ionizing occurs. This battery bank contained 8 powerful 12-volt, 150-ampere lead batteries. The Armenian dynamo's sustaining input power was 14,400 watts. The nominal maximum output power is nearly 1,500,000 watts. Once, the output current was accidentally increased to 40,000 amperes for almost a minute. Fortunately, the power was reduced to a safe level before the water started to boil. Internal coils (windings) control water velocity and therefore dynamo power.

The dynamo's production cost is estimated at \$500 per kilowatt which is competitive to nuclear power's capital costs of \$5,000 per kilowatt, windmill capital costs of \$4,000 per kilowatt, etc. A well-run nuclear power plant can generate power for 1.5 cents per kilowatt-hour, coal 1.8 cents, natural gas 3.4 cents, and oil 4.1 cents, on the average. The dynamo's operating cost would be approximately .1 cent per kilowatt-hour with no external fuel needed nor pollution.

Dynamos could replace all nuclear power plants, solar installations, wood-burning furnaces, hydro-electric dams, windmills, fossil-fueled power plants, etc. Satellites, locomotives, heavy trucks, buses, airplanes, and ships are obvious transportation applications. It does not seem that dynamos can be made compact enough to power electric cars although it certainly would be worth trying.

A Forbes article states that PECO (formerly Philadelphia Electric Company), with an income stream to back it up, was able to sell on Wall Street \$4 billion worth of bonds paying 5.8 per cent. A dynamo manufacturer could simply sell bonds to build and operate dynamos at a low interest rate. Dynamo loan payback times may be in the ball park of a half-year to a year, depending on the local electricity market price. As soon as a dynamo is paid for, the revenue from that time on would be almost pure profit.

Once a track record is established by successfully installing a few dynamos, the dynamo company could raise money to build more dynamos by simply selling billions of dollars of bonds instead of stock. So therefore, there wouldn't be any dilution of ownership.

A recent IEEE Spectrum article stated that world demand for electricity increases approximately 500 megawatts every day. To put this in perspective, the equivalent of another Hoover Dam would have to be built every four days to keep up with world electricity increase demands. Or, a dynamo manufacturing company would have to build another 500-megawatt dynamo every single day of the year to keep up with world electricity increase demand in addition to replacing all existing generators fueled by hydro, nuclear, and fossil fuels.

The following is a highly condensed summary of the "Description" of the dynamo's Russian patent IPC H 02 K 44/00 "Method of deriving of electrical energy and organization of Gritskevich's MHD-generator for its realization":

The dynamo is a sealed toroid filled with distilled water with heavy water (deuterium oxide) added. Movement of water inside the closed loop and use of unique properties of water as a polar liquid cause a release of electrical energy as an outcome of a rupture of hydrogen connections. Additional electrical energy is drawn from nuclear reactions and micro-cavitational processes. The liquid gets ionized and moving around the toroid at start-up time by a running magnetic field with the help of stimulating electromagnetic windings.

A layer of segnetoelectrical material covers the internal surfaces of the toroid. 32 electrodes made from a hard-alloy material are inserted into the toroid at equal distances apart. These 32 electrodes are connected to a power supply. Additional stimulation windings are also connected to the power supply.

The partially pre-ionized (on the part of the heavy water) water gets ionized further by the high-voltage discharges by the 32 electrodes. With the help of the stimulation windings, a running magnetic field is created which moves the water in one direction inside the toroid. An electromotive force gets created by the electromagnetic induction in a separate set of windings. During the movement of the water stream free electrons get created, and an additional energy gets emitted because of the water's friction (viscosity) against the layer coated on the inside surface of the toroid, because of electrostatic breakdowns of cavitational-vacuum structures, and because of the ongoing nuclear reaction. 100 times as much electrical energy is generated as required for electrical energy input.

Note that the hydro-magnetic dynamo is always producing electricity once it is manufactured and jump-started at the factory. Whenever a locomotive is parked in sub-freezing weather, its hydro-magnetic dynamo's electricity output would be used to heat the dynamo's containment to prevent its water-filled toroid from freezing.

Whenever a locomotive is parked, its hydro-magnetic dynamo's excess electrical output could be sold to the local power grid.

IPMS Energy Storage/Battery Device

During the summer of 1984, airborne intelligence surveillance teams of the United States Air Force, operating out of specially configured and equipped Boeing 707 airframes (called AWAC's) electronically detected (and then shortly thereafter photographed) bursts of coherent light of

enormous power originating in the vicinity of Dushambe, Turkministan. The bursts of light, a brilliant blue-green color, lasted just a few seconds and were shifted almost to the ultraviolet end of the light spectrum. The “laser” beams were directed upwards out of the atmosphere towards American military communications satellites.

At precisely the same time the AWAC’s detected and photographed the laser bursts (they were referred to in that jargon by American military analysts but later proved to be something almost entirely different), several of the satellites essential to America’s global military command and control communications systems became inexplicably inoperable.

The Defense Intelligence Agency, under the direction of the National Security Council and assisted by the National Security Agency, escalated its surveillance of the remote site in the Ural Mountains from which the bursts first originated. For several months, during a concerted campaign of uninterrupted observation by AWAC’s and American spy satellites, no additional bursts were observed or reported. Then, without warning, in the middle of the night nearly seven months later, AWAC’s crews operating just outside the territorial airspace of Afghanistan detected similar laser bursts of lower intensity during a period of intensive localized ground warfare.

The Afghanistan bursts were apparently aimed at targets under attack by Soviet infantry units. The laser bursts continued in a sustained, localized but obviously mobile attack pattern, as frequently as four or five times per hour, until nearly sunset of the next day. Photographic evidence gathered at the time by the AWAC’s crew, and later corroborated by photographs taken at the actual site of the fire fight and forwarded to the U.S. for analysis, showed that the targets of the laser bursts were ammunition and fuel supply depots located in the remote desert. Several of the ammunition and fuel caches had apparently been destroyed during the attack, as demonstrated by the evidence of explosions, fire, smoke and residual infra-red heat patterns detected, photographed and electronically recorded on-board the AWAC’s.

All this information was transmitted (via encrypted communications bursts, routed through the military Global Command Control satellite system) to the National Security Agency (NSA), located at Fort Meade, Maryland. Analysts there recognized that they were looking at evidence of a weapons system which had never been observed before. They did not know what had produced the laser bursts. But they did know that the technology which made such a thing possible was not available to the countries participating in the NATO Convention. They were terrified at the implications of such a development.

Within hours, the information was packaged into classified documents and conveyed to the Joint Chiefs of Staff. The Joint Chiefs examined the information while they were being briefed by the AWAC’s crews which had witnessed and recorded the events. After the briefing, the crews were dismantled, and their various members stationed far away from one another, with orders never to discuss the events they had witnessed. Officially, the laser bursts never had occurred.

Secretary of Defense Frank Carlucci took delivery of the packet at his residence in Falls Church, Virginia, three days later, at a private, secret meeting held in the middle of the night. No one has yet adequately explained why the Joint Chiefs waited three full days to brief the Secretary. Early the next morning, he was driven in a specially prepared bulletproof limousine to the White House. He personally delivered the information to the new President of the United States, Ronald Reagan. The content of the Secretary’s report had an immediate, measurable impact.

It was this series of events which principally precipitated the Strategic Defense Initiative, a program of military defense and reprisal based on America's state-of-the-art satellite-borne laser-optical and particle accelerator technologies. The S.D.I. system was intended to provide the U.S. with a meaningful deterrent to further aggressive use of the technology developed by the Soviet Military.

There was only one problem with this system, aside from the fact that its astronomical costs almost bankrupted the American economy: it did not work. S.D.I. was designed to respond to a kind of technology which was not achievable in the West, and which could not be explained by any of the models, materials, technologies or sciences known in the West.

In 1985, the top-secret military version of the space shuttle, code named Atlantis, embarked on a special orbital mission. One of its mission assignments was to retrieve, examine or photograph the military spy satellites which had been disabled by the laser bursts recorded in 1979-84. The results of this investigation have not been declassified or released in any but the most censored version to the public. What we do know for certain, as a matter of publicly available non-classified information, however, is that each of the disabled satellites appeared to have had at least one, and in some cases as many as four or five precisely measured holes, approximately the size of an American silver dollar, melted completely through them from the outside.

The photographs taken of the satellites show evidence of intense heat, charring and carbonized residue evenly distributed around the perimeter of each hole. The evidence is clear and unmistakable – the satellites were disabled by a coherent beam of some sort, characterized by such intense energy that it was possible to melt consistently measured holes through the exterior and interior components of American military satellites, after having passed through the atmosphere of the planet and into space for as many as 325 miles. Such a thing has scarcely been dreamed of by the American military, much less put into any but the most nominally effective operational form.

After more than ten years of political, economic and technological wrangling, and after the expenditure of more than one hundred twenty billion dollars in largely ineffectual research and development efforts, it is inescapably clear that no amount of money or political pressure, no amount of geo-political posturing or economic sanctions was going to compel the disclosure or replication of the technologies which produced the results photographed over the Carpathian Mountains and the Afghanistan deserts. The Soviets had developed a weapons system which was so revolutionary that it could not be explained, replicated or defended against.

The Reagan Administration's lack of specificity about the nature of the implied threat to which S.D.I. was supposed to respond subjected the Administration, the Defense Department and the R&D proponents of the most prominent American aerospace corporations to an endless barrage of charges by the Press and the Congress. They were characterized as being disingenuous and accused of being unreasonably secretive during successive appropriations battles in the Congress.

The truth of matter is that the Administration and the Pentagon were not being disingenuous at all. They simply could not admit to the American public that they were attempting to develop an effective response to a weapons system which they did not understand and could not replicate.

There are a number of issues intrinsic to this set of circumstances, along with several dozen others which, though less well known or economically dramatic, are no less important from a technological standpoint. It is certain that the implication of these technologies has not been lost on those multi-national corporations whose entire capital structure may be threatened by the new

sciences, technologies and materials which have been developed in secret laboratories, hidden in caverns excavated beneath the Carpathian Mountains, in the former Soviet Union.

Over the past decade the West has enjoyed occasional gratuitous glimpses into the heart of Soviet science. Attempts to disclose or discuss these developments in the press have been ruthlessly suppressed by powerful special interests vested in both the public and private sectors.

The science which underlies the series of events recounted here remains at the outer limits of the most advanced technology of which the West is capable. The questions posed by the military and corporate analysts about this laser beam weapons system are far-reaching in their scope and implications. Some of them are illustrative:

1) New Model of Quantum Mechanics: The sciences and models of quantum mechanics which produced such stunning recent developments in the West as the laser and maser make quite clear how much energy is required to create a beam of coherent light powerful enough to penetrate the atmosphere, retain its coherence in spite of atmospheric diffraction (and other effects described in quantum mechanics as “thermal blooming”), and melt a two-inch hole clear through a satellite made of the most sophisticated alloys ever produced in the West. Except for limited short-distance demonstrations conducted with industrial grade lasers used in cutting operations, there is no known combination of materials or technologies extant in the West to make such a thing possible.

2) New Materials: The materials necessary to create an electrical charge large enough to power a device capable of producing such a beam certainly do exist. In quantum mechanics the term large enough does not make sense, but we can agree for the purposes of this discussion on the effect of it as represented by such commonly accepted constructs as frequency, voltage, current and ionic flow rates [as distinguished by the phenomenon of resistance].

Hydroelectric plants and large, fixed-base nuclear power plants are capable of producing enough energy to theoretically power such a device. But the energy bursts in both the Carpathians and the Afghan desert were generated by sources which moved from one location to another. In order to do that, several additional considerations must be addressed:

a. Portability: The power source would have to be transportable or be capable of storing sufficient energy to repeatedly power such a device. Western technology cannot produce either a portable power production unit or energy storage system capable of the performance requirements everyone agrees must be met to make the weapons system work, either in the laboratory or in the field. System portability was the most puzzling feature of the NSA/DIA report.

When carefully analyzed, the computer-enhanced enlargements of the photographs taken by the spy satellites and AWAC’s crews failed to provide evidence of any tracks which could be attributed to wheeled or tracked vehicles operating in the precise locations and at the same time as the laser bursts which were observed. The implications of this set of circumstances was almost too much to believe – the devices were apparently either hand held or transportable and rechargeable in such a way as to allow them to be transported by one or more foot soldiers, without vehicular support.

b. Enormous Power Requirement: The materials and technologies used to construct a device capable of generating a beam of such enormous power and magnitude would have to be sufficiently advanced to enable the components to be transported without damage over significant distances in unpaved areas of very rough terrain. Such strategies, engineering techniques, construction technologies or materials do not exist in the Western inventory.

c. The continuous repetition of the laser bursts suggests that the devices can be operated repeatedly at short intervals of 12-15 minutes. This means they can be triggered with significantly higher frequency and intensity than anything which can be produced in the West, even for laboratory use. Industrial strength lasers used to cut metals require careful setup, accommodate only limited use in short bursts, require extensive cooling and must be continually recalibrated. These limitations obviously did not apply to the devices being operated in the Afghan desert. Analysts at AMTL agreed that the units would either have to be recharged via an external, independent device or somehow be capable of self-recharging in the field.

Such a thing is almost unthinkable by current Western military standards. Not only can we still not replicate the technology in any meaningful form, but the Soviets had refined the technology to a point which allowed it to be carried on the shoulders of ordinary foot soldiers and recharged in the field without motorized support.

Unbelievable! How was such a thing possible? According to some of the highly qualified scientists who scrutinized the photographs, it is not possible. The “Not Invented Here” syndrome is alive and well in the American engineering community. Some of them still insist that the pictures were either fabricated or demonstrate something completely different than this narrative suggests.

3) Energy Recharge-Batteries: How did such high-intensity laser beam generators get recharged in the middle of the Afghan desert, in the absence of powered support vehicles or fixed-based power plants? There are a number of possible alternatives. They could have been powered by some sort of advanced battery technology. It's possible, but if the battery technology used in the West is used as a model to support such a thesis, it would take a bank of the most sophisticated batteries ever designed by NASA, arrayed in series and parallel configurations larger than five full-sized Soviet T-60 tiger tanks to power such a device.

This theoretical battery bank, operating at 100% efficiency (which is not practically or theoretically possible; the best batteries manufactured in the West operate at less than 60% discharge efficiency), could conceivably produce enough direct current voltage (in a zero resistance super conductive circuit, which is not possible, either) to perhaps produce one burst of light equal in intensity to 20% of the power required to burn a 2-inch hole through a satellite moving at 20,000 miles per hour at a distance of 325 miles.

Soviet ground forces were generating bursts of this magnitude every 12-15 minutes for more than 10 hours with nothing but ground troops. During eight hours of this exchange, it was totally dark. Something pretty remarkable must have been going on to make such a thing possible.

4) Energy Recharge – Solar Cells: Another alternative would have been to have whatever energy storage devices were being used to power the “laser cannons” recharged by sunlight. The state-of-the-art in photo-voltaic cells produced in the West simply would not support such an undertaking. The very best solar cells ever produced in the West have been produced by the Japanese.

These cells operate at a maximum of 19% efficiency - that is, they convert as much as 19% of the ambient visible sunlight shining on a clear, cloudless day into ion flow, which then becomes low voltage direct electrical current flowing through a circuit. The Japanese panels require months per section to manufacture and literally cost more than their weight in gold to manufacture. They are very heavy and are so sensitive to vibration and calibration that once installed, they cannot be moved at all.

Photo-voltaic cells capable of providing enough electricity to recharge a theoretically infinite energy well would have to operate at efficiencies of 50-80% to recharge batteries of infinite electrical capacity with enough power to trigger such a device. Such cells would have to be very light weight and able to withstand extremes of heat, cold, vibration, dust, wind and other conditions encountered in a hostile battlefield environment. Nothing like that exists in the Western technological arsenal.

5) Dielectric Materials – Transformers and Capacitors: Another consideration must be reconciled before this issue can be theoretically put to rest. In order to produce a burst of coherent light of sufficient intensity to have the effect which was observed and recorded by the surveillance teams, the voltage and amperage required to support such a device would have to be staggeringly high. In order to operate at all, the voltage supplied to the system must be released all at once, not in a continuous stream but in a single coherent burst so intense that any materials known in the West would either evaporate or melt. Not only would the best dielectric materials known to Western Science melt because of the heat produced by such enormous energy bursts, but before a bolt of energy of this magnitude could even be released to such a device, it would have to be accumulated and stored somehow.

A similar set of requirements of a less dramatic type is present in all the electronic devices manufactured and marketed in the West. This includes the entire range of electronic devices such as VCR's, computers, televisions and sound components, telecommunications, information storage, transmission and retrieval systems of every kind. We could not live as we do without them. The components which convert, store and release ion flow into the circuitry of these devices are known as transistors, transformers and capacitors.

This discussion delves into a slightly technical area here, so non-scientific types will need to either become familiar with the fundamentals of electricity to understand what is meant or simply give it a possibility that what is developed in the next section is a true representation of the way such things actually operate. The discussion deals with such commonly used and seldom understood concepts as voltage, current, frequencies and resistance.

(a) Transformers convert voltage at one level of current (amperage) to either higher or lower voltage levels. When the voltage is increased, the amperage or current is proportionately decreased. A low voltage produced at a high current level can be transformed into a much higher voltage at a proportionately lower level of current or "power."

(b) Capacitors: The decrease in amperage which accompanies a transformation of low voltage to higher voltage is often compensated for by a device known as a capacitor. In the most simplistic terms, capacitors "store" electrical energy until the amount of voltage and current reach a certain minimal threshold. When that point is reached, the entire store of energy is released all at once in a single burst.

The tantalum materials used in the West to manufacture such devices conform to certain standard rules which are commonly accepted by electrical engineers. These rules have only recently been stretched by new technologies and materials developed in the West. For the purposes of this discussion, though, it is safe to say that electrical engineers have long relied on these rules because they have always produced the same results when applied in the same way. Here's an example.

It is standard engineering fare which dictates that a transformer capable of accommodating one volt at one ampere of current across a grid of one ohm of resistance will be one cubic meter in

dimension. If followed to its logical conclusion, this standard rule of electrical engineering would require that a transformer capable of supporting a laser burst device of the kind operated by the Soviet ground forces in the Afghan desert would have to be approximately the size of a building built on a base 100 feet to a side, nearly 150 feet high.

Surely such a device could not have been hidden from the AWAC's eye in the sky which can clearly photograph the letters on a license plate from 60,000 feet altitude, nor could it have been moved on the shoulders of ground troops without wheeled vehicular support. The fact that there was absolutely no trace of such a huge, massive transformer device (or any other kind of structure or vehicle which could be construed to serve that purpose) means that something else must have been used instead. Military analysts had absolutely no idea what it could have been.

Such a burst system cannot operate without a capacitor of some sort. A capacitive device capable of storing the amount of energy required to power a single burst from a laser cannon, made of the most advanced dielectric material known in the West, would have to have been equally massive and, further, would have to have been cooled by some sort of strategy which would have been instantly and unmistakably detected by the infrared cameras and spectroscopic scanners used aboard the AWAC's and the spy satellites which investigated the scene.

The practical requirements of such a system are best demonstrated by the massive equipment required to operate and cool the Super Conductor Super Collider linear particle accelerators recently designed by the United States and Japan. No evidence of any such capacitive device was recorded in either the Carpathian Mountains or the Afghanistan desert. How can we explain it?

Without going into any detail about how the technologies were developed, suffice it for now to say that the Soviet ground forces in Afghanistan were equipped with a prototype of a hand-held plasma beam accelerator, the likes of which had only been roughly imagined by American military analysts. The device relied on some innovative strategies. Among these were:

Energy Storage Devices: The power source for the Soviet light cannons was comprised of a back-pack array of specially designed energy storage devices. The closest thing we have in our vocabulary to compare to them is described by the term "battery." In the limited sense that these devices store electrical energy, they are batteries. Any other similarity to the batteries we are accustomed to in the West ends there. The literal translation of the Russian name for them is energy accumulators.

The batteries relied on in the West are based on the chemical properties of components which, when combined in certain configurations and proportions, interact chemically with one another. The result of this chemical interaction is that it creates both heat and a stream of liberated ions – electricity. In dry cell batteries, the process of chemical interaction is one way – once they have been expended, they are simply disposed of. It is estimated that more than 12 billion expended dry cell and lead-acid batteries are dumped into America's landfills every year.

Other batteries are designed and constructed so that the chemical reactions which liberate electrical current are reversible in some degree. These rechargeable cells are characterized by the lead-acid batteries which are used in automobiles and in commercial and industrial applications. Various strategies have been developed to make batteries relying on chemical reactions maximally effective, but the theoretical limits of effectiveness of such devices have surely been reached.

A consortium of aerospace companies working with NASA recently announced the development of an advanced sodium-hydride-based rechargeable cell which is the most efficient battery yet invented in the West. Unfortunately, it operates at an ambient temperature of 2000 degrees centigrade and, if allowed to reach temperatures outside a very narrow safe operating zone, will explode with the force of a small thermo-nuclear device of approximately ten-kiloton yield. It is not safe, but it is the best Western science has come up with.

The energy storage device developed by the I.N. Frantsevich Institute for Problems of Materials Science (IPMS), Kiev, Ukraine, works on a completely different principle. Its construction is the result of a completely unique nonlinear quantum mechanical model which makes it possible to create crystalline lattices of absolutely pure carbon (and other materials) in sheets of infinitely variable dimension which are exactly one molecule thick. The crystal formation techniques and the whole body of new science which allows for their creation in the first place are completely unknown to Western science.

The mono-molecular sheets deposited by this technique are wrapped back and forth on top of each other, more than one million times per millimeter, and are separated from each other by a distance of less than one atomic diameter. At this level of construction, the material becomes subject to the rules of quantum mechanics which are almost entirely probabilistic. That means a whole atom of carbon (or almost anything else except an electron or photon) will not fit in the space which separates the lattice sheets.

When viewed under an electron microscope, the sheets produce a pattern which looks for all the world like an endless field of four-sided pyramids, connected base to base, on a single plane, with the tips of the pyramids protruding endlessly, uniformly upwards. When wrapped back and forth on top of each other, these sheets of pure carbon crystal, made of carbon molecules shaped like trillions of identical tiny pyramids, all arrayed endlessly in identical formation, are positioned so that the tips of the pyramids on the bottom sheet are matched with the tips of the pyramids on the top sheets. What remains between the pyramid tips are open “spaces” or energy wells.

The quantum physics which describes the characteristics of the energy wells created between the layers of crystalline lattice is largely unknown to Western physicists. The Soviet model predicts with a high degree of probability that the quanta of energy referred to in the West as electrons (and, in some cases, photons), the stuff of which electricity is made, will, when introduced to the lattice structure, search, find and fit into the energy wells with military precision.

During the recharging or loading phase, the energy storage devices made of the crystalline lattice material channel one electron at a time into each well created by four carbon pyramids on the bottom layer and four carbon pyramids on the top layer. Because the rules of quantum mechanics which operate in this tiny environment demand it, each electron or quanta of energy has a certain polarity, spin and “color” (and other mathematically defined characteristics) which must be accommodated if it is to find, fit and stay in an energy well. Interestingly enough, when a current is applied across the lattice-work structure, the electrons behave precisely as nonlinear quantum mechanics predicts they will. They flow much like a fluid into the lattice field, then separate into individual energy quanta and spin into the last energy well in each layer, automatically adjusting their individual spin, polarity and color to match their characteristics to fit the requirements of each well, until the lattice is full.

Because no chemical reactions are involved in the process of marching electrons into or out of the energy well fields, there is no resistance in the circuit. In the absence of resistance, the electrons fill

the wells at light speed, never missing a space, automatically adjusting polarity, spin and other characteristics, and creating no heat. The amount of time required to “charge” such a cell is less than 5% of the time required to recharge a conventional chemical battery of similar voltage and current.

The validity of $E = MC^2$ is called into question by the way these devices function. When the battery is fully charged, it actually demonstrates more mass than when the energy storage device is empty or discharged. The laws of quantum mechanics relied on in the West state categorically that this is not possible. It is the answer to the question, “How much does a beam of light weigh?”

According to the Soviet model, this is precisely as it should be. When this phenomenon was first demonstrated to scientists in the West who were testing the energy storage devices at INEEL in Idaho, they were thunderstruck. The quanta of energy, or electrons as we refer to them, which are poured into the crystalline lattice demonstrate characteristics of mass even though they are bundles of pure energy sitting in stasis, literally at rest. The characteristic of mass is verifiable – you can measure it by weighing the energy storage devices before and after they are charged. When they are charged, they demonstrate appreciably more mass than when they are fully discharged.

If this is confusing to you, to suggest that pure energy can be shown to demonstrate verifiable mass while at rest (in stasis), perhaps you can begin to appreciate how fundamentally different the physics of all this is when viewed in the terms of Einstein’s classic equation $E = MC^2$.

The existence of this technology clearly is proof positive that not only does energy demonstrate the characteristics of mass, but it does so in a state of non-motion or stasis, sitting idly in an energy well. A state of stasis is a very far cry from the terminal theoretical velocity required by the constant in Einstein’s equation, equivalent to the square of the speed of light.

The scientific implications of this phenomenon are truly staggering. At very least, the verification of mass as a property of energy quanta at rest suggests that Einstein’s theory of relativity may be altogether incorrect as a means of describing the dynamics underlying the real nature of the material world and its relationship to energy.

The existence of this technology suggests at very least, that energy and mass are equivalent characteristics of all things which are manifest in the material world. It is this fundamental contextual difference which distinguishes the Soviet model of quantum mechanics from the Western model. “The proof of the pudding,” they say, “is in the eating.”

Theoretical physicists may argue endlessly about the validity of the assumptions relied on by the IPMS scientists to develop their unique sciences, technologies and materials. But they cannot argue about the existence of the materials which have arisen from that context. They are as real as they can be. And they are unlike anything ever seen or contemplated in the West.

In the same way energy quanta stored in the energy wells of crystalline lattice materials demonstrate complete mathematical satisfaction with staying there indefinitely, when allowed to flow out in the form of an outgoing wave of electrical discharge, these quanta (electrons or photons, as you prefer) march right back out without resistance at light speed through a closed circuit to another use.

When these energy storage devices are discharged, they demonstrate other attributes which are not known in Western science, and which, because of the very nature of the chemical reactions we are accustomed to, are not theoretically possible according to conventional wisdom. Conventional

chemical batteries, when fully charged, produce electric current at a useable voltage for perhaps 30-40% of the total discharge cycle. After that, either the voltage or amperage (or both) drop to low enough levels that the devices being powered by them cannot recognize or use the electrical current which remains available. At that point, the batteries either have to be recharged or replaced.

The crystal lattice batteries have been demonstrated to produce precisely the same current and voltage levels throughout 98% of their discharge cycle. They produce no heat during discharge, regardless of the rate at which they are discharged. This is absolutely contrary to our experience with batteries, transformers or capacitors. Until the crystalline lattice materials were specifically engineered to register an electronically detectable blip at 95-96% discharge, it was impossible even for the scientists who developed them to distinguish a partially discharged battery from a fully charged one.

There is another characteristic which is intrinsic to energy storage devices which comes into play here. It is a characteristic of materials which is described as energy density. For non-scientific readers, this concept can simply be construed to mean the amount of measurable electrical current which can be produced by any device or material when its mass is converted into electrical energy. The concept is expressed in mathematical formulas as the number of watts and hours of consumable energy which can be converted from each kilogram of material. It is expressed as watt-hours per kilogram.

Here is an example we can all understand. Consider gasoline. When converted into electrical power at 100% efficiency, gasoline has been theoretically shown to have an energy density of between 550 and 600 watt-hours per kilogram of mass. In easy terms, that means that if one kilogram of gasoline were converted into pure electricity at 100% efficiency (with no loss due to heat, resistance, waste, etc.), the reservoir of energy would power a 100-watt light bulb for 5.5 to 6 hours.

Most of the high-end conventional automobile batteries of the lead-acid variety operate at an energy density rate of between 20-25 watt-hours per kilogram. The best NASA sodium-hydride batteries operate at 48-50 watt hours per kilogram. The energy accumulator devices which have been tested at the Idaho National Electronic Laboratories have demonstrated energy densities of between 850 and 1050 watt-hours per kilogram.

What does this mean in practical terms? It means, for one thing, that for the first time in the history of science an energy storage device has been created with an energy density which is greater than gasoline or any other refined fossil fuel. It means that devices which rely on these energy storage technologies can theoretically be designed to store and deliver clean electrical power at higher rates of efficiency than any fossil fuel ever discovered.

The global implications of this technology are irresistible. It means, among other things, that the technology exists, right now, to eliminate the need to build another nuclear power plant or dam another river to produce hydroelectric power. It means we can no longer justify burning another ounce of petroleum, another piece of coal, another cubic centimeter of natural (or unnatural gas) or another tree to produce heat, electricity or power for any purpose, including transportation.

When coupled with the plasma beam devices being tested by the Soviet infantry units in Afghanistan, these energy storage devices operated at such unbelievably high rates of discharge efficiency that they made it possible to repeatedly induce huge electrical discharges in a highly mobile configuration.

The same technologies which were used to produce the energy storage devices have been adapted to create transformers and capacitors with previously unimaginable performance characteristics. Instead of adhering to the conventional western model of “One Volt at One Amp across a resistance of One Ohm equals One Cubic Meter,” the Soviets have produced a capacitor which measures more than 1200 farads at 10,000 amperes in a package the size of a tuna sandwich.

When tested by the Technology Materials Testing Laboratory of the Defense Department at the Pentagon and at the I.N.E.E.L. in Idaho, totally new testing equipment had to be designed, engineered and constructed just to test the devices. The scientists at those laboratories had never tested anything like these materials before.

Instead of having to house transformer and capacitor devices in a series of trailers towed by diesel tractors or huge fixed-base facilities, the operating apparatus which supplied transformed power and high intensity capacitive bursts to the light cannons weighed less than ten pounds and could easily be transported in a backpack by a foot soldier.

One final question remains unanswered. “How did the energy storage devices, once dissipated or discharged, become recharged in the field, especially in the dark of night?”

The back-pack plasma beam device detected by the AWAC’s during limited combat use in the Afghanistan desert was powered by energy storage devices constructed of crystalline lattice materials. After each laser burst, the energy storage devices were recharged every 12-15 minutes (nearly 45 minutes in the dark of night – the residual ambient heat of the desert is a very efficient source of infrared energy) by sunlight, collected and converted to electricity by four-foot square panels of “solar cell” material arrayed on a pole like a flag, each weighing less than ten ounces.

The electrical energy stored in the back-pack energy accumulators was transformed into enormously high voltages and released at almost unbelievably high current levels when the super-capacitors were sufficiently charged. The beam of “light” detected by the AWAC’s crews was a field of plasma, flowing at the speed of light and demonstrating characteristics of mass (and, therefore, kinetic energy). The phenomenon represented by these bolts of lightning are not comprehensible according to the model of quantum mechanics and plasma physics currently being used in the West.

Battery packs utilizing these energy accumulator materials have been designed, produced and tested which provide more than 14 hours of continuously transmitted power on a single charge to conventional hand-held cellular telephone devices. Similar improvements in conventional battery/energy storage capacity have been developed and are being tested for such devices as video camcorders, laptop and portable computers and other similar consumer, commercial, industrial and military applications.

IPMS research in the field of layered crystals has thus led to the creation of capacitors with a very high level of capacitance (measured in farads). This technology is based on a revolutionary production technique which forms polarized surfaces of one molecule thickness, separated by less than one atomic diameter of space, held together by weak Van der Waals energy forces. The special properties created by these layered crystalline structures provide previously unimaginable internal surface areas. Super capacitors are constructed of layered materials numbering more than one million dipole sheets for each millimeter of crystal thickness.

These devices provide a virtually limitless number of charge-discharge cycles at astonishingly rapid charge and discharge rates. The potential impact of such devices on all electronic equipment currently being produced is incalculable, since virtually all electronic devices rely extensively on the West's state-of-the-art tantalum capacitance technologies.

At present, IPMS has on hand (among others) a super-capacitor roughly the size and dimension of a sandwich which develops more than 1,200 farads at 10,000 amperes. It also boasts production of a battery whose active mass energy density exceeds 850 watt-hours per kilogram. For the non-scientist (and all the rest of us as well) this means that a "battery" has been produced which, for the first time in history, produces more power per unit of mass than any fossil fuel ever devised.

Prototype testing of larger-scaled devices designed specifically for providing power to electric vehicles is currently underway. Prototypes are expected to be capable of sustained highway speeds of up to 70 miles per hour with a range of 525 miles on a single charge. The power plant for this application has been recently improved by the inclusion of a proprietary solid-state ceramic electric motor which weighs 7.2 kilograms and produces 100 horsepower on 12-volt direct current. For comparison, an electric vehicle employing a 100-horsepower electric motor performs the same as with a 500-horsepower gasoline engine.

If these performance attainments can be sustained in broad-based applications, electrically powered vehicles could be produced which would meet or exceed virtually all performance characteristics currently available in equipment relying on internal combustion, petroleum-based engines. Gasoline/diesel-powered transportation devices can be replaced by cleaner, more efficient and significantly less expensive alternatives.

The world market for current energy storage applications which will be superseded by these energy storage technologies is estimated to be in excess of \$24 billion per year (1991), exclusive of electric vehicle considerations.

Metamatter

9/25/1997 11:16 AM

From: Robert Bass

To: James Bowery<jabowery@netcom.com>;

CC: Robert W. Bass<rbrtbass@pahump.com>; Gary Vesperman<vman@skylink.net>;

Subject: for the postulated "Bass page"?

Jim,

I just went to <http://www.generalstore.com/> and see nothing but "under construction, etc." Is this you, or someone else in another state? Do you know how to (reasonably economically) do Mass-eMailings? Say either from a rented Data Base of known Investors, or just blindly to "millions"?

How about posting the following

Potentially Awesome Speculative Investment Opportunity?

=====

Venture SEED Capital? Low Risk, AWESOME Payback!!!

I seek one or more High-Technology-Oriented "High-Roller" Nerves Investor(s) who would be intrigued by the following proposition (if demonstrably sound and absolutely genuine): Suppose you go to "Super Monte-Carlo" in the sovereign nation of Erewhon, and you come to a table with a Croupier who says:

"I have here a coin the size of a U.S. silver dollar, which is perfectly evenly balanced between Heads and Tails to 10 decimal places [with the edge for Heads in the 11th decimal place]; and a certificate from the US Bureau of Standards certifying it is not "loaded" to favor either Heads or Tails to the best measurements they can make.

"You can flip the coin yourself.

"I have here Certificates of Deposit for \$30 Billion in a centuries-old Swiss Bank of spotless reputation.

"My croupier's fee for allowing you to play is ridiculously modest.

"How much are you willing to wager on the honest flip?

"Now suppose the preceding scenario is repeated, except that several of the most reputable scientists in the world assure you that the coin is 'loaded' so that the chances of Heads are between 95% and 99%. Your own experts assure you that you have at worst One Chance in 20 of losing.

"Finally, the croupier says, you may play for \$150,000."

To recapitulate, the odds are 20-to-1 that you will win \$30 Billion, versus one chance in 20 that your entire \$150,000 wager will be lost.

Would you play?

=====

-----PRIVATE Communication-----

----- (NOT a Publication) -----

=====

I need Seed Capital of \$150,000 under circumstances exactly analagous to those outlined in the Risk/Reward scenario above. If "Heads" comes up, then my patented [Plasmasphere](#) technology can be escalated to a Metamatter technology, where by METAMATTER I mean a solid, *crystallized* fully-ionized plasma.

An ordinary crystal has nuclei spaced apart distances of about 10^{-8} cm, the [Bohr radius](#), because the [electron cloud](#) makes the atoms behave like little billiard balls of the size indicated.

However, in a plasma, the positively-charge nuclei and the electrons are equal in number, but the electrons are not in orbit around individual nuclei; they are "mixed up" as in a plum-pudding. Most plasma physicists will tell you that in order for hydrogen gas to be fully ionized (i.e., all electrons stripped from all nuclei) the temperature of the gas would have to be above 150,000 degrees Kelvin (i.e., 15 times hotter than the surface of the Sun). But this is demonstrably FALSE (both theoretically and experimentally).

If the gas is dense enough, it can be fully ionized at "low" temperatures, e.g. 5000 Kelvins [so-called "pressure ionization"].

Now suppose that the fully ionized low-temperature gas is condensed into the physical state of a liquid metal. I call this a Liquid Metallic Plasmoid (LMP). The characteristic of an LMP is that, like mercury, it keeps a constant volume; unlike a gas, it does not expand to fill all available space (if in a vacuum). The positive nuclei remain on average equidistant, and the electrons circulate around the dynamic lattice as in a giant crystalline molecule. Cook called it a "Cryscapade"; whereas others might call it a Liquid Crystal.

Fewer than a score people in the world understand that LMPs can exist. One LMP was photographed in half a dozen or so photos on the cover of the [Journal of Applied Physics](#) in 1957 by [later] Nitro-Nobel Medalist, physical chemist, Dr. Melvin Cook. The theory by which Cook explained his accidental discovery has been *independently* rediscovered (in 3 separate countries, USA, UK & France) by researchers seeking to explain the illusive natural phenomenon of Ball Lighting.

The late expert on High-Energy Lasers and Shock Tubes, Dr. Jay Blauer of Rockwell Rocketdyne, who died early of [leukemia](#), helped me to design an experiment that would prove beyond shadow of a doubt that LMPs can be created at will. The basic idea is to use a combination of Shock Tube technology and High-Energy Laser technology, with my patented Plasmasphere technology, in order to achieve in a non-self-destructive, reusable device, what Cook discovered accidentally with high-explosives in a self-destructive experiment.

Once the mere EXISTENCE of producible-at-will LMPs is achieved (for the Risk Capital of \$150K), it will be trivially easy to raise several million more for refinement of the device to move the LMP into a cryogenic [vacuum chamber](#) where (since it is electrically conductive) it can be magnetically levitated and allowed to cool by radiation.

Use of the Brush-Sahlin-Teller [Equation of State](#) (used to design the H-bomb) shows that as the LMP cools, its volume contracts, and it becomes more and more dense. There can be shown to scientists sufficiently expert to understand the evidence, a mass of recent experimental evidence (as well as expert theoretical evidence) that before the LMP gets down to room temperature it will crystallize into a Metastable Solid Crystal, namely a *new form of matter* never seen before on Earth!!!

The density will be intermediate between that of ordinary condensed matter and that of [neutron stars](#), wherein a teaspoonful weighs tons.

I propose to manufacture 3 kinds of Micro-Crystals of Metamatter: MSP, MSD, and MSD. Each addresses in a truly *revolutionary* way a trillion-dollar market, with a multi-billion dollar profit potential. In many ways, Metamatter will have a bigger impact on human civilization than any prior discovery, including both computers and atomic energy! In fact, consider the following:

MSP (Meta-Stable Protium [hydrogen]) will be the IDEAL room-temperature [Superconductor](#), which will revolutionized both the Computer/Electronics industry and the Electric Power industry.

MSD (Meta-Stable [Deuterium](#) [heavy-hydrogen]) will be the ideal 5th [Generation Cold Fusion fuel](#); when triggered by an infra-red photon of 17.7 eV, a micro-pellet will undergo a phonon-mediated and Lattice-Catalyzed ANEUTRONIC chain-fusion reaction to cleanly release the energy of 10

sticks of dynamite, to make steam for mechanical heat and conversion at 67% efficiency into electrical energy. This can make both homes and automobiles independent of the present electrical utility companies, though they will still need to buy the almost dirt-cheap MSD fuel micro-pellets from Metamatter Industries.

MSH (Meta-Stable Helium) will be the IDEAL [rocket propellant](#) for expanding human civilization into the [Solar System](#) (e.g. to colonize Mars); when a micro-crystal of MSH is triggered by the right frequency of laser-light, it will return to the form of gas as if it had been compressed by tens of millions of atmospheres of pressure; it will release 43 times more energy per unit weight than any conceivable chemical combination!

During the mid 1980s, the [Air Force Systems Command](#) sent a group of 7 or 8 Colonels who held Doctorates in the physical or engineering sciences to scour the USA for 9 months, in groups of 2 or 3, and to report back on what futuristic technology would have the greatest potential impact on the [USAF](#) and USA economy by the year 2000 if reduced to actual practice. They listened to 600 industrial and academic presentations and selected MSH as the greatest payoff (for least risk) choice! The USAF Rocket Propulsion Lab was supposed to issue 8 parallel contracts for 8 "crash" projects to see if bulk MSH could be manufactured. I was slated to get one of the 8 contracts, but my approach (through solidifying a helium LMP) was radically different from that of the other 7 selected proposers.

With MSH as fuel, one could take a 50 percent payload to Mars and back in two weeks! (Accelerate there and return at one gee.)

But a Princeton professor of Physics, Will Happer, then Secretary of the JASONS [advisers to DOD/DOE], advanced theoretical arguments which appeared to shoot down the practicality of the other 7 approaches, and the whole project was canceled. But Happer's arguments are totally irrelevant to my approach. Moreover, Happer was later Chief Scientific Advisor to [Admiral Watkins](#) (Secretary of DOE) when the ERAB Report was produced.

Those who understand the recent work of Arata and Zhang in which the aneutronic conversion of deuterium nuclei to helium nuclei inside of a palladium lattice is recorded in Real Time (inside of a sealed apparatus which contains a Mass-Spectrometer and which give ZERO helium when the heavy-water deuterium is replaced by ordinary-water hydrogen) know that Aneutronic [Cold Fusion](#) (CF) is a demonstrable FACT and that Happer and the ERAB Report were WRONG. Therefore it is logical to consider the possibility that Happer was also wrong when, before he shot down CF, he also shot down MSH.

There is ZERO risk in producing an LMP; it is just that 99.999% of all scientists are ignorant of Cook's work.

There is a slight technical risk in crystallizing an LMP at room-temperature; conceivably, it will remain liquid until below the temperature of [liquid nitrogen](#), in which case my proposal will have been a failure. But the payoff is so AWESOME, and the chances of failure so tiny, that the risk seems worth taking.

I can supply drawings of the Proof-of-Principle Process Prototype Plasmasphere demonstration designed by Dr. Blauer and myself. Jay Blauer told me that he could do the experiment in his spare time evenings and weekends "in two weeks" using shock-tube and laser equipment already in his lab at [Rocketdyne](#), provided he had \$10,000 cash for items and materials not on hand.

Several "reputable" labs have explained to me that they would not even consider bidding on doing the Bass-Blauer experiment for less than \$100,000. I have personal contacts at 22 government and private labs (such as JPL, SRI, LANL, etc.) which I would like to visit with my former graduate student Dr. Lou Puls (who, unlike me, is an accomplished experimental plasma physicist) to make joint presentations on the theoretical and experimental aspects of creation of an LMP, preparatory to asking them to bid. After 22 weeks spent in such visits, (and paying Dr. Puls Consulting Fees) I expect to have \$50,000 left to offer the Highest Bidder. I also expect that no one will bid less than \$100,000. But I also expect that out of the 22 presentations, at least several will become so excited that they will offer to Cost Share. In several labs, the working-level scientists interested in LMPs have told me, "If you can get the Management to pay attention, we have in place already a mechanism and a precedent to Cost Share."

Remembering what happened to Fleischmann and Pons it will accomplish naught for me to take the \$150K, rent the equipment, and do it in my own garage. Nobody will believe it, and nobody will pay any attention. However, if we spend 6 months getting suitable technical personnel of nationally reputable laboratories excited about the subject of LMPs, and then some lab with the prestige of, say, JPL or LANL or SRI, announces the production of an LMP, many other labs will immediately undertake to "catch up" and to replicate the result at their own expense. Once 3 or 4 labs have announced successful replication, no one will doubt and then it will be trivially easy to raise the venture capital to go from LMPs to solid, crystallized Metamatter micro-crystals of MSP, MSD, and MSH.

I can supply a large amount of written technical material to anyone who is interested in raising the \$150,000 seed capital required to get Metamatter Industries off the ground (and for me to file the pioneering Patent Applications, and since I am now licensed to practice Intellectual Property Law before the PTO I can do it myself at no extra expense – as did the physicist/patent-attorney who invented the Xerox process).

This will be BETTER than getting in on the ground floor of Xerox or Polaroid or [Microsoft](#)!

Sincerely,

Robert W. Bass, M.A. Oxon, Ph.D.
Dr. Robert W. Bass, Registered Patent Agent 29,130 [ex-Prof Physics]
Inventor: Topolotron, Plasmasphere, issued; QRT Cold Fusion, pending
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=====
XXX.YYY
XXX Venture Partners

Dear XXX,
Have you got your _____ Fund off the ground yet? Did you receive the Proposal I sent you last week?

Do you agree that the logic of the Analogy I used for the proposed Low-Risk, AWESOME Payoff, "Proof-of-Principle" (POP) [Experiment](#) is sound? If a rational Investor were convinced (e.g. by the photos published by Nitro-Nobel Medalist, Melvin Cook) that it is possible to put a plasma in the state of liquid metal (Liquid Metallic Plasmoids, or LMPs), and that the ONLY risk is that when cooled to room temperature they will not yet crystallize [but won't crystallize until down below, e.g.. the temperature of liquid nitrogen], which risk will be taken by OPM [[Other People's Money](#)] when the scientific community realizes that LMPs can be created at will, and that there is ZERO risk in performing the proof-of-principle demonstration experiment to convince them of this fact, and that this can be done for as little as \$150,000 (which will also permit Patent Applications ensuring the inside track when LMPs get crystallized), don't you agree that the Reward to Risk Ratio of $\$3 \times 10^{10} / \$1.5 \times 10^5 = 2 \times 10^5$ multiplied by the probability of crystallization at room temperature (which is supported by hundreds of theoretical papers on MSH and at least one recent paper in Physical Review Letters on MSP, as much, much better than 50%), namely an EXPECTED REWARD/RISK RATIO of more than 100,000-to-1 implies that this Proposal is "better" than any proposal made in this field yet, when you note that each of the 3 main products to be manufactured from crystallized LMPs, namely MSP, MSD, and MSH, EACH separately addresses a different Trillion-Dollar Market with a clear Profit Potential of more than \$10 Billion?

Moreover, this is a Proposal in which the Investor who RISKS \$150K will know within a mere 6 or 7 months WHETHER OR NOT Phase One of his speculation has paid off! (And it is highly likely that the Absolute Answer will be known within another 3 months, considering how fast the scientific community reacts to something, e.g. High-Temperature Superconductors, which is both surprising and EASY to replicate!)

Please tell me when a Speculative Investment Possibility better than this one has last crossed your desk? (I'll bet, NEVER!)

Regards,

Bob Bass

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Electrino Fusion Power Reactor

Gordon L. Ziegler has discovered how to make a clean electrino fusion power reactor capable of generating up to a net of 1880 megawatts of DC electricity. The proposed energy source would produce no carbon emissions and no radioactive wastes. (By reversing the order-to-disorder arrow in the second law of thermodynamics, a \$50,000,000 electrino fusion power reactor could be built which would also reverse all aging, disease, and decay processes within a one-mile radius.)

Power output, however, cannot occur in this system without the simultaneous operation of two aspects of the invention. One is an accelerator-collider making a field reversing the order-to-disorder arrow in the second law of thermodynamics in a controlled area. Among other things, that field makes the other aspect of the system (the power source) efficient enough to be self-sustaining and prevents the formation of radioactive wastes.

Electrons are generally regarded to be structure-less spinning point charges. But that contradicts a reasonable postulate that occurred to Gordon L. Ziegler in 1967: "A spherically or cylindrically symmetric smooth charge distribution cannot have detectable spin." Electrons have detectable spins. Therefore they must not have smooth structure-less symmetric charge distributions. They must be lumpy and have internal structure. An application of the Parsimony Principle shows that they must be composed of two half-charges orbiting each other at the speed of light. The reason scientists concluded that the electron was structure-less was that it could not be blasted apart in collisions up to 700 MeV each particle.

But in Ziegler's model, electron sub-particles are bound together by confinement by a speed of light barrier (they are trapped going faster than the speed of light). They cannot be blasted apart, even though they are two particles.

The two sub-particles of electrons make a whole different structure for matter than quarks and leptons. The sub-particles can also fuse with each other – making new particles. Fusing sub-particles of positrons reverses the order-to-disorder arrow in the second law of thermodynamics – making the power source efficient enough to be self-sustaining and preventing the radioactive wastes from forming. Fusing the sub-particles of electrons comprise the power source.

Key components include a polarized positron source, injector accelerators, inflection magnets, end magnets, and the beam transport.

Governments and utilities would buy electrino fusion power reactors because the process is a clean, inexpensive way to produce electricity. It is 1000 times as efficient as nuclear reactors. It does not require uranium or plutonium for fuel. It can run on anything for fuel such as dirt, sand, sewage, ground garbage, toxic chemicals, radioactive wastes, sea water, etc. without carbon nor radioactive pollutants.

Assume that the collision energy were 940 MeV to avoid unwanted heat (operate at room temperature), and the current in each beam was 1.0 ampere of electrons. The energy investment into the electrino fusion would be 1880 megawatts. The energy released in annihilation photons would be 3760 megawatts. Recoverable net power would be 1880 megawatts or less.

The collision energy of the linear accelerator would be 940 MeV (each particle – 1880 MeV in the center of mass frame). The current in each beam would be 1.0 amperes of electrons. There would be two beams 180 degrees from each other.

The energy released in annihilation photons would be 3760 megawatts. "Annihilation photons" are the 940 MeV X-Rays produced when a negatron annihilates a proton. These X-rays are converted to electricity by order-to-disorder arrow reversed photo-voltaic cells with nearly 100% efficiency.

In summary the 3760 megawatts output of annihilation photons would be converted to electricity. However, in order to keep the electrino fusion reaction going, 1880 megawatts would be taken from the 3760 megawatts to power the linear accelerator. The net energy output would thus be 1880 megawatts-electric.

The size of an electrino fusion reactor would be about 80' x 10' x 10'. The fuel is whatever brass or copper James M. Potter uses in constructing the walls of his linear accelerators. James M. Potter, Ph.D., is President, JP Accelerator Works, Inc., 2245 47th Street, Los Alamos, NM 87544, 505-690-8701 or 888-301-2833 or 505-661-8155, jpottter@jpaw.com, <http://www.jpaw.com>. 155 lbs of

brass would be consumed over 100 years before shutdown for refueling. The linear accelerator would be a standard commercially available model. It would not need to be customized for an electrino fusion reactor.

The smallest electrino fusion reactor that would be possible to build is now about 80' x 10' x 10'. It may eventually be the size of a filing cabinet.

The projected cost of the first 1880-megawatt electrino fusion reactor is approximately \$100 million. This clean source of electricity could be built in two years, and the necessary Refresher built in one year. Electricity could be generated for only about 1.5 percent of current rates (a little over 0.1 cent per kwh). Subsequent clean energy sources can be built for \$37.5 million each.

The 1880 megawatts (net) of electricity generated by an electrino fusion power reactor would be Direct Current (DC). A utility would need thick wires and the biggest busbars and transformers on the planet. Conversion from DC to Alternating Current (AC) would require the world's largest inverters.

The electrino fusion reactor requires the Refresher to be self-sustaining. But the Refresher has several positive medical side effects due to reversing the order-to-disorder arrow that cannot be eliminated – in a controlled area reverse adult aging and wipe out diseases.

Refresher 1 Design Specifications

Size of accelerator	20 meters long by 3 meters wide
Diameter of channels	4 cm (maybe a little more to allow for water cooling channels)
Type of accelerator	Folded linear accelerator with pulsed klystron RF power supplies and S-band cavities (2856 MHz)
RF power supplies	Eight 35 to 50-megawatt pulsed klystrons
duty factor	0.1% (peak current 1000 times average current)
Average power	400 kW (20 kW per meter of accelerator)
klystron efficiency	~50%
total system power	800 kW
cooling water requirement for each 5 m section	5 to 10 gpm

cooling water required by each klystron	~ 5 gpm
cooling towers capacity	800 kW
Cost:	
Linear accelerator	\$12 million
Klystrons	\$ 8 million
Klystron power supplies and cooling towers	\$ 2 million
Magnets and their power supplies	\$ 2 million
System with controls	\$ 8 million
10% contingency	\$ 3.2 million
Builder's cost	\$35.2 million
Other budgeted items	\$14.8 million
Total budgeted	\$50 million
Creation time total	3 years
Design time (beam dynamics, rf power systems, cooling, and computer control)	1 year
Fabrication and subassembly testing	18 months
Installation and commissioning	6 months

(The following chapter is taken from *Formulating the Universe*, Volume II, by Gordon Ziegler, Chapter 7. Copyrighted by Benevolent Enterprises 2004. Used with permission.)

Chapter 7

SECOND LAW OF THERMODYNAMICS

A. Introduction

Everything goes from a state of order to more disorder. Brand new automobiles wear out and rust. Objects break or are damaged. A thermos bottle falls off the counter, and the inner glass bottle is shattered. We do not expect the shattered bottle to fall back up to the counter and become whole again. There is a one-way arrow for the events to transpire. That arrow is the Second Law of Thermodynamics.

Houses grow old and fall into decay. Barns fall down. Fruit spoils, people and animals grow old and die. Viruses mutate. People become ill and die. Crime and disorder in society increase. Homes break up. Aborted fetuses disintegrate. Dead people and things decompose. All of these negative occurrences are the outworking of the second law of thermodynamics – that part of which is an arrow making everything go from order to disorder.

Let us consider what other people have written about the second law of thermodynamics.

"Second law of thermodynamics

"An equilibrium macrostate of a system can be characterized by a quantity S (called entropy) which has the following properties:

"(i) In any infinitesimal quasi-static process in which the system absorbs heat dQ , its entropy changes by an amount

$$dS = \frac{dQ}{T} \quad (7-1)$$

where T is a parameter characteristic of the macrostate of the system and is called its *absolute temperature*.

"(ii) In any process in which a thermally isolated system changes from one macrostate to another, its entropy tends to increase, i.e.,

$$\Delta S \geq 0. \quad (7-2)$$

"The relation (7-1) is important because it allows one to determine entropy *differences* by measurements of absorbed heat and because it serves to characterize the absolute temperature T of a system. The relation (7-2) is significant because it specifies the direction in which nonequilibrium situations tend to proceed."¹

The above expression of the second law of thermodynamics is regarding entropy and heat. Other writers include the order-to-disorder arrow in the second law of thermodynamics.

"It is a matter of common experience that disorder will tend to increase if things are left to themselves. (One has only to stop making repairs around the house to see that!) One can create order out of disorder (for example, one can paint the house), but that requires expenditure of effort or energy and so decreases the amount of ordered energy available.

"A precise statement of this idea is known as the second law of thermodynamics. It states that the entropy of an isolated system always increases, and that when two systems are joined together, the entropy of the combined system is greater than the sum of the entropies of the individual systems. For example, consider a system of gas molecules in a box. The higher the temperature of the gas, the faster the molecules move, and so the more frequently and harder they collide with the walls of the box and the greater the outward pressure they exert on the walls. Suppose that initially the molecules are all confined to the left-hand side of the box by a partition. If the partition is then removed, the molecules will tend to spread out and occupy both halves of the box. At some later time they could, by chance, all be in the right half or back in the left half, but it is overwhelmingly more probable that there will be roughly equal numbers in the two halves. Such a state is less ordered, or more disordered, than the original state in which all the molecules were in one half. One therefore says that the entropy of the gas has gone up. Similarly, suppose one starts with two boxes, one containing oxygen molecules and the other containing nitrogen molecules. If one joins the boxes together and removes the intervening wall, the oxygen and nitrogen molecules will start to mix. At a later time the most probable state would be a fairly uniform mixture of oxygen and nitrogen molecules throughout the two boxes. This state would be less ordered, and hence have more entropy, than the initial state of two separate boxes."²

"The explanation that is usually given as to why we don't see broken cups gathering themselves together off the floor and jumping back onto the table is that it is forbidden by the second law of thermodynamics. This says that in any closed system disorder, or entropy, always increases with

time. In other words, it is a form of Murphy's law: Things always tend to go wrong! An intact cup on the table is a state of high order, but a broken cup on the floor is a disordered state. One can go readily from the cup on the table in the past to the broken cup on the floor in the future, but not the other way round.

"The increase of disorder or entropy with time is one example of what is called an arrow of time, something that distinguishes the past from the future, giving a direction to time."³

B. Electrino Model and 2nd Law

The natural tendency of leptons in beta decay is that the parent lepton combines with one or more gravitons to produce more particles. In all natural reactions, the order energy of the resultant particles is less than or equal to the order energy of the original particles.

1. Negative Energies. Let us consider antimatter more carefully. "In the Dirac theory also, *the permissible energy values for a free particle range from $+mc^2$ to $+\infty$ and from $-mc^2$ to $-\infty$* . The first of these results is of course just what we expect for a free particle – that its total energy can have any value greater than its rest energy. But the second result is quite puzzling, since it implies the existence of states of *negative total energy*."⁴ Anderson in 1932 discovered positrons in cosmic radiation. These were regarded as Dirac's negative energy particles. "The first two solutions of the Dirac equation . . . clearly describe a free electron of energy E and momentum \mathbf{p} . The two negative energy electron solutions . . . are to be associated with the antiparticle, the positron."⁵

However, in the annihilation it is not $(+mc^2) + (-mc^2) = 0$, but $2mc^2$ is the result of annihilation.⁶ There is something strange going on with the minus signs in these equations. The calculations are inconsistent.

Maybe there are two kinds of energy considered. One we can call entropy energy E_s . In the annihilation reaction, $+mc^2 + -mc^2 = 2mc^2$. Entropy energy is the higher value. The other energy is order energy E_o . In order energy the same reaction is $(+mc^2) + (-mc^2) = 0$.

Let us consider entropy energy and order energy for particle decay schemes. There are a few decay schemes where no negative order energy (anti-matter) is introduced in the right hand side of the decay schemes. In those few instances, the final order energy is equal to the initial order energy (when kinetic energy is taken into account). But in most cases, a trace of negative order energy (anti-matter) is introduced into the right side of the decay schemes. There is nothing on the left hand sides of the decay schemes to correspond to this addition of a trace of negative order energy on the right sides of the decay schemes. Therefore, total order energy is less on the right hand sides of the decay schemes than on the left hand sides (if only by a trace). A few decay schemes introduce a lot of antimatter (as K^-) on the right side of the decay scheme. The loss of order energy in the systems is greater in those cases. But in every case, for all natural processes, the order energy final is \leq the order energy initial, or

$$\Delta E_o \leq 0. \quad (7-3)$$

Let us check the order energy for electron electrino fusion reactions. Electrons made energetic by acceleration (as heavy as protons) fuse and form anti-protons. Matter is converted to anti-matter. Entropy energy is conserved, but not so order energy. Order energy is reduced in the extreme from +938 MeV to -938 MeV or more for each electron fused (two electrons are fused in each reaction).

The order-to-disorder arrow for electron electrino fusion points in the usual direction. The system does obey the second law of thermodynamics.

2. Reversing the Order-to-Disorder Arrow. What would happen if we fused the electrino constituents of positrons instead of the electrino constituents of electrons? Entropy energy E_S would again be conserved. Entropy would be increased. However, order energy E_O would go from $-2 \times 938 \text{ MeV}$ to $+2 \times 938 \text{ MeV}$ – from disorder to order. The order-to-disorder arrow would be reversed. This would be a reaction that would be prohibited by the second law of thermodynamics – unless the strong gravitational force that fuses the anti-semions would be stronger than the second law of thermodynamics (which otherwise governs weak interactions). The stronger of the strong gravitational force and the second law of thermodynamics should be determined by experiment. More rides on that one experiment than perhaps on any one other experiment in this generation. If it is found that strong gravity is stronger than the second law of thermodynamics, then order can be restored at first in a small area, and then for the whole earth.

Here we see that the entropy arrow of time and the order-to-disorder arrow of time are separate and distinct, and are not one and the same thing. While all the reactions the author has studied increase entropy, the fusion of positron anti-semions reverses the order-to-disorder arrow, making more order out of the disorder.

Positron constituent electrino fusion might not only take the electrinos from disorder to order. It could make other physical processes in a local area go from disorder to order. The positron fusion not only violates the second law of thermodynamics, it reverses the order-to-disorder arrow of that law in a local area, making other processes in that area reverse. Let us consider that process more to see how it might be regulated.

We guess the desired relationships for reversing the order-to-disorder arrow in the second law of thermodynamics through dimensional analysis. We want to solve for r , the maximum radius in which the reversed law would be effective. There is a way we can obtain a length from combinations of our variables and constants. That way is in the right hand side of Eq. (7-4). The whole expression is the thermodynamic relation we are seeking. The thermodynamic relation is:

$$(\Delta E_o)_t > 0 \text{ where } r < \frac{(\Delta E_o)_1 c}{ik}, \quad (7-4)$$

where E_o is the order energy – the positive or negative energy in the pair production of particles; ΔE_o is the change in the order energy, where $(\Delta E_o)_t$ is the change in the total order energy of the system, and where $(\Delta E_o)_1$ is the change in the order energy for a single source reaction – for a positron fusion reaction it is approximately $2 \times 10^9 \text{ eV/collision} \times 1.6 \times 10^{-19} \text{ joules/eV} = 3.2 \times 10^{-10} \text{ joules/collision}$; c is the speed of light – approximately $3.0 \times 10^8 \text{ m/s}$; we shall solve for the effected radius r ; i is the beam current in each beam in Coulombs per second (we will solve for 10^{-11}); k is the ratio of particle energy to particle charge. This energy per charge is the accelerated energy of the particle (roughly $1 \times 10^9 \text{ ev}$ times $1.6 \times 10^{-19} \text{ joules/ev} = 1.6 \times 10^{-10} \text{ joules}$) divided by the charge of each positron ($q = 1.6 \times 10^{-19} \text{ coulombs}$), which equals $10^9 \text{ joules per coulomb}$. The collision efficiency eff is not needed in this equation, because the result is not in particles, but is already in collisions.

Incredibly, the lower the current, the bigger is the radius of the affected area. The greater the current, the smaller is the radius of the effected area. With 10^{-11} A beam currents, the effected

radius r solves for 9.6 meters – roughly 10 meters, which describes a small area – less than a tenth of an acre.

To get an idea of the positron beam currents needed to reverse the order-to-disorder arrow of the second law of thermodynamics in what size of affected radius, see Table 7-1 below.

For an area the size of	r	beam current
House	10 m	10 pA
four football fields	100 m	1 pA
community	1 km	100 fA
city	10 km	10 fA
Israel	160 km	0.6 fA
U.S.	2,400 km	0.04 fA
World	13,000 km	0.008 fA
Sun	1.7E11 m	6E-22 A

Table 7-1. Beam currents versus affected radius for reversal of the order-to-disorder arrow of the second law of thermodynamics.

We must make sure that reversing the second law will do only good and not evil before we flip the switch. Inspired evidences will be studied in the next chapter on a wide range of phenomena affected by reversing the order-to-disorder arrow in the second law of thermodynamics.

¹F. Reif, *Statistical Physics*, Berkeley Physics Course--Volume 5 (New York: McGraw-Hill Book Company, 1967), p. 283.

²Stephen Hawking, *A Brief History of Time--From the Big Bang to Black Holes* (New York: Bantam Books, 1988), pp. 102, 103.

³*Ibid.*, pp. 144, 145.

⁴Robert B. Leighton, *Principles of Modern Physics* (New York: McGraw-Hill Book Company, Inc, 1959), p. 665.

⁵Francis Halzen, Alan D. Martin, *Quarks and Leptons* (New York: John Wiley & Sons, 1984), p. 107.

⁶David S. Saxon, *Elementary Quantum Mechanics* (San Francisco: Holden-Day, 1968), p. 386.

(End of Chapter 7)

EXECUTIVE SUMMARY OF BUSINESS PLAN

electrino energy is a new company formed to develop the inventions envisioned by the new model of physics—the electrino fusion model of elementary particles. Our company provides theoretical work and guidance to licensees. Our focus is the reverser of aging, disease, and decay processes (Refresher 1) and whatever else we must do to fund the Refresher 1.

electrino energy was formed October 12, 2005 as an invention development and theorist service specializing in four high-technology inventions – inertia-less craft; artificial gravities; reverser of aging, disease, and decay processes; and electrino fusion reactors generating electricity. All four inventions have potentially extremely high value. But all four inventions currently have three principle difficulties: 1) they are unbelievable by almost all persons – including agency heads, venture capitalists, congressmen and senators; 2) almost all of them cost scores of millions of dollars to develop; and 3) **electrino energy** has no money to develop them. With no capital and no revenue stream or other assets to fall back on, **electrino energy** cannot even get a guaranteed loan.

But **electrino energy** is not resource-less and in a hopeless condition. It has three principal approaches that it can take to resolve this dilemma:

1) Though the aging reverser is the most urgently needed, a miniature inertia-less craft can be constructed for a whole lot less money. It should be possible to construct one for a few hundred dollars borrowed from friends. But that technology could be licensed for hundreds of millions of dollars – enough to finance all the four high-tech inventions.

2) As a back-up to that approach, venture capital angels could be approached to advance the money to finance the reverser of aging, disease, and decay processes. This invention is not only high tech, but medical. The other inventions could be developed at a later time.

3) As a back-up to that approach, the owner could pursue his particle theory, predicting the masses of particles. That may be difficult, but not impossible. This would do what no other physical theory can do. Such a feat would be publishable, arousing interest among scientists for creating a facility to test the model – opening the way for government funding of the high-tech inventions.

A master decision tree flow chart linking and employing these three alternatives for funding the development of the inventions is in Section 7.0 Financial Plan.

According to alternative 1), projected sales and profits for the first four years of operation are summarized below:

Year	Sales(\$)	Profits(\$)	Profit/Sales(%)
1	200,000,000	0	0
2	0	0	0
3	0	0	0
4	10,000,000,000	9,000,000,000	90.0

According to alternative 2), there are no actual projected sales and profits for the first three years of operation. Year four is the same as above. According to alternative 3), there are no projected sales or profits for the first five years.

Currently, there are no competitors for any of these inventions. Once public incredulity is overcome by demonstration, the devices should have huge market potential.

The size of the electricity generating market is essentially enormous. It would be up to 50 percent of electric generation world-wide eventually. That's probably over a trillion dollars.

A self-powered high-speed locomotive powered by an electrino fusion power reactor would need to be at least 85 feet long.

Environmental Heat Engines

Las Vegas inventor Robert Stewart developed his "Stewart Cycle" engine for transportation vehicles, electricity generators, and large-scale water lifters. His efficient and pollution-free engine uses ambient heat to expand a working fluid such as Freon or ammonia and move pistons through sealed chambers. His patent is for Vapor Actuated Power Generating Device, No. 4,033,136.

A possibly more up-to-date version is Ralph J. Lagow's Method of Generating Power from a Vapor, Patent No. 4,693,087. Ken Rauen's Rauen cycle and Superclassical cycle engines also expand working fluids with environmental heat to provide useful net mechanical power.

Mr. Stewart claimed that his fuel-less engine could lift Colorado River water from below Hoover Dam back up into Lake Mead, thereby doubling Hoover Dam's output of electricity. He also proposed lifting water from the Columbia River into the Colorado River via a canal, generating electricity as the water flowed back downhill.

DISCLAIMER: Inclusion of any invention or technology described in this list of inventions does not in any way imply its suitability for investment of any kind. All investors contemplating any investments in these devices and technologies should first consult with a licensed financial professional. Prospective investors should exhaustively perform their own investigation of pertinent facts and allegations of facts. Investors should also ensure thorough compliance with regulations of the federal Securities and Exchange Commission and appropriate state securities divisions. For more information, see <http://www.zpenergy.com/modules.php?name=News&file=article&sid=1655>.

Thank you for your comment, Gary Vesperman.

The comment tracking number that has been assigned to your comment is SEDDSupp20014.

Comment Date: December 1, 2011 22:03:04PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDSupp20014

First Name: Gary
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Attachment: Locomotive_Power_Sources.docx

Comment Submitted:

Attached is my compilation of candidate power sources for high-speed rail locomotives. It is available in my website www.padrak.com/vesperman. Pages 28-33 has this description of metamatter:

Metamatter

9/25/1997 11:16 AM
From: Robert Bass
To: James Bowery
jabowery@netcom.com;
CC: Robert W. Bass rbrtbass@pahrump.com;
Gary Vesperman
vman@skylink.net;
Subject: for the postulated "Bass page"?

Jim,

I just went to <http://www.generalstore.com/> and see nothing but "under construction, etc." Is this you, or someone else in another state? Do you know how to (reasonably economically) do Mass-eMailings? Say either from a rented Data Base of known Investors, or just blindly to "millions"?

How about posting the following

Potentially Awesome Speculative Investment Opportunity?

Venture SEED Capital? Low Risk, AWESOME Payback!!!

I seek one or more High-Technology-Oriented "High-Roller" Nerves Investor(s) who would be intrigued by the following proposition (if demonstrably sound and absolutely genuine): Suppose you go to "Super Monte-Carlo" in the sovereign nation of Erehwon, and you come to a table with a Croupier who says:

"I have here a coin the size of a U.S. silver dollar, which is perfectly evenly balanced between Heads and Tails to 10 decimal places [with the edge for Heads in the 11th decimal place]; and a certificate from the US Bureau of Standards certifying it is not "loaded" to favor either Heads or Tails to the best measurements they can make.

"You can flip the coin yourself.

"I have here Certificates of Deposit for \$30 Billion in a centuries-old Swiss Bank of spotless reputation.

"My croupier's fee for allowing you to play is ridiculously modest.

"How much are you willing to wager on the honest flip?"

"Now suppose the preceding scenario is repeated, except that several of the most reputable scientists in the world assure you that the coin is 'loaded' so that the chances of Heads are between 95% and 99%. Your own experts assure you that you have at worst One Chance in 20 of losing.

"Finally, the croupier says, you may play for \$150,000."

To recapitulate, the odds are 20-to-1 that you will win \$30 Billion, versus one chance in 20 that your entire \$150,000 wager will be lost.

Would you play?

=====

-----PRIVATE Communication-----

----- (NOT a Publication) -----

=====

I need Seed Capital of \$150,000 under circumstances exactly analagous to those outlined in the Risk/Reward scenario above. If "Heads" comes up, then my patented Plasmasphere technology can be escalated to a Metamatter technology, where by METAMATTER I mean a solid, crystallized fully-ionized plasma.

An ordinary crystal has nuclei spaced apart distances of about 10^{-8} cm, the Bohr radius, because the electron cloud makes the atoms behave like little billiard balls of the size indicated.

However, in a plasma, the positively-charge nuclei and the electrons are equal in number, but the electrons are not in orbit around individual nuclei; they are "mixed up" as in a plum-pudding. Most plasma physicists will tell you that in order for hydrogen gas to be fully ionized (i.e., all electrons stripped from all nuclei) the temperature of the gas would have to be above 150,000 degrees Kelvin (i.e., 15 times hotter than the surface of the Sun). But this is demonstrably FALSE (both theoretically and experimentally). If the gas is dense enough, it can be fully ionized at "low" temperatures, e.g. 5000 Kelvins [so-called "pressure ionization"].

Now suppose that the fully ionized low-temperature gas is condensed into the physical state of a liquid metal. I call this a Liquid Metallic Plasmod (LMP). The characteristic of an LMP is that, like mercury, it keeps a constant volume; unlike a gas, it does not expand to fill all available space (if in a vacuum). The positive nuclei remain on average equidistant, and the electrons circulate around the dynamic lattice as in a giant crystalline molecule. Cook called it a "Cryscapade"; whereas others might call it a Liquid Crystal.

Fewer than a score people in the world understand that LMPs can exist. One LMP was photographed in half a dozen or so photos on the cover of the Journal of Applied Physics in 1957 by [later] Nitro-Nobel Medalist, physical chemist, Dr. Melvin Cook. The theory by which Cook explained his accidental discovery has been independently rediscovered (in 3 separate countries, USA, UK & France) by researchers seeking to explain the illusive natural phenomenon of Ball Lighting.

The late expert on High-Energy Lasers and Shock Tubes, Dr. Jay Blauer of Rockwell Rocketdyne, who died early of leukemia, helped me to design an experiment that would prove beyond shadow of a doubt that LMPs can be created at will. The basic idea is to use a combination of Shock Tube technology and High-Energy Laser technology, with my patented Plasmasphere technology, in order to achieve in a non-self-destructive, reusable device, what Cook discovered accidentally with high-explosives in a self-destructive experiment.

Once the mere EXISTENCE of producible-at-will LMPs is achieved (for the Risk Capital of \$150K), it will be trivially easy to raise several million more for refinement of the device to move the LMP into a cryogenic vacuum chamber where (since it is electrically conductive) it can be magnetically levitated and allowed to cool by radiation.

Use of the Brush-Sahlin-Teller Equation of State (used to design the H-bomb) shows that as the LMP cools, its volume contracts, and it becomes more and more dense. There can be shown to scientists sufficiently expert to understand the evidence, a mass of recent experimental evidence (as well as expert theoretical evidence) that before the LMP gets down to room temperature it will crystallize into a Metastable Solid Crystal, namely a new form of matter never seen before on Earth!!!

The density will be intermediate between that of ordinary condensed matter and that of neutron stars, wherein a teaspoonful weighs tons.

I propose to manufacture 3 kinds of Micro-Crystals of Metamatter: MSP, MSD, and MSD. Each addresses in a truly revolutionary way a trillion-dollar market, with a multi-billion dollar profit potential. In many ways, Metamatter will have a bigger impact on human civilization than any prior discovery, including both computers and atomic energy! In fact, consider the following:

MSP (Meta-Stable Protium [hydrogen]) will be the IDEAL room-temperature Superconductor, which will revolutionized both the Computer/Electronics industry and the Electric Power industry.

MSD (Meta-Stable Deuterium [heavy-hydrogen]) will be the ideal 5th Generation Cold Fusion fuel; when triggered by an infra-red photon of 17.7 eV, a micro-pellet will undergo a phonon-mediated and Lattice-Catalyzed ANEUTRONIC chain-fusion reaction to cleanly release the energy of 10 sticks of dynamite, to make steam for mechanical heat and conversion at 67% efficiency into electrical energy. This can make both homes and automobiles independent of the present electrical utility companies, though they will still need to buy the almost dirt-cheap MSD fuel micro-pellets from Metamatter Industries.

MSH (Meta-Stable Helium) will be the IDEAL rocket propellant for expanding human civilization into the Solar System (e.g. to colonize Mars); when a micro-crystal of MSH is triggered by the right frequency of laser-light, it will return to the form of gas as if it had been compressed by tens of millions of atmospheres of pressure; it will release 43 times more energy per unit weight than any conceivable chemical combination!

During the mid 1980s, the Air Force Systems Command sent a group of 7 or 8 Colonels who held Doctorates in the physical or engineering sciences to scour the USA for 9 months, in groups of 2 or 3, and to report back on what futuristic technology would have the greatest potential impact on the USAF and USA economy by the year 2000 if reduced to actual practice. They listened to 600 industrial and academic presentations and selected MSH as the greatest payoff (for least risk) choice! The USAF Rocket Propulsion Lab was supposed to issue 8 parallel contracts for 8 "crash" projects to see if bulk MSH could be manufactured. I was slated to get one of the 8 contracts, but my approach (through solidifying a helium LMP) was radically different from that of the other 7 selected proposers.

With MSH as fuel, one could take a 50 percent payload to Mars and back in two weeks! (Accelerate there and return at one gee.)

But a Princeton professor of Physics, Will Happer, then Secretary of the JASONS [advisers to DOD/DOE], advanced theoretical arguments which appeared to shoot down the practicality of the other 7 approaches, and the whole project was canceled. But Happer's arguments are totally irrelevant to my approach. Moreover, Happer was later Chief Scientific Advisor to Admiral Watkins (Secretary of DOE) when the ERAB Report was produced.

Those who understand the recent work of Arata and Zhang in which the aneutronic conversion of deuterium nuclei to helium nuclei inside of a palladium lattice is recorded in Real Time (inside of a sealed apparatus which contains a Mass-Spectrometer and which give ZERO helium when the heavy-water deuterium is replaced by ordinary-water hydrogen) know that Aneutronic Cold Fusion (CF) is a demonstrable FACT and that Happer and the ERAB Report were WRONG. Therefore it is logical to consider the possibility that Happer was also wrong when, before he shot down CF, he also shot down MSH.

There is ZERO risk in producing an LMP; it is just that 99.999% of all scientists are ignorant of Cook's work.

There is a slight technical risk in crystallizing an LMP at room-temperature; conceivably, it will remain liquid until below the temperature of liquid nitrogen, in which case my proposal will have been a failure. But the payoff is so AWESOME, and the chances of failure so tiny, that the risk seems worth taking.

I can supply drawings of the Proof-of-Principle Process Prototype Plasmasphere demonstration designed by Dr. Blauer and myself. Jay Blauer told me that he could do the experiment in his spare time evenings and weekends "in two weeks" using shock-tube and laser equipment already in his lab at Rocketdyne, provided he had \$10,000 cash for items and materials not on hand.

Several "reputable" labs have explained to me that they would not even consider bidding on doing the Bass-Blauer experiment for less than \$100,000. I have personal contacts at 22 government and private labs (such as JPL, SRI, LANL, etc.) which I would like to visit with my former graduate student Dr. Lou Puls (who, unlike me, is an accomplished experimental plasma physicist) to make joint presentations on the theoretical and experimental aspects of creation of an LMP, preparatory to asking them to bid. After 22 weeks spent in such visits, (and paying Dr. Puls Consulting Fees) I expect to have \$50,000 left to offer the Highest Bidder. I also expect that no one will bid less than \$100,000. But I also expect that out of the 22 presentations, at least several will become so excited that they will offer to Cost Share. In several labs, the working-level scientists interested in LMPs have told me, "If you can get the Management to pay attention, we have in place already a mechanism and a precedent to Cost Share."

Remembering what happened to Fleischmann and Pons it will accomplish naught for me to take the \$150K, rent the equipment, and do it in my own garage. Nobody will believe it, and nobody will pay any attention. However, if we spend 6 months getting suitable technical personnel of nationally reputable laboratories excited about the subject of LMPs, and then some lab with the prestige of, say, JPL or LANL or SRI, announces the production of an LMP, many other labs will immediately undertake to "catch up" and to replicate the result at their own expense. Once 3 or 4 labs have announced successful replication, no one will doubt and then it will be trivially easy to raise the venture capital to go from LMPs to solid, crystallized Metamatter micro-crystals of MSP, MSD, and MSH.

I can supply a large amount of written technical material to anyone who is interested in raising the \$150,000 seed capital required to get Metamatter Industries off the ground (and for me to file the pioneering Patent Applications, and since I am now licensed to practice Intellectual Property Law before the PTO I can do it myself at no extra expense – as did the physicist/patent-attorney who

invented the Xerox process).

This will be BETTER than getting in on the ground floor of Xerox or Polaroid or Microsoft!

Sincerely,

Robert W. Bass, M.A. Oxon, Ph.D.

Dr. Robert W. Bass, Registered Patent Agent 29,130 [ex-Prof Physics]

Inventor: Topolotron, Plasmasphere, issued; QRT Cold Fusion, pending

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=====

XXX.YYY

XXX Venture Partners

Dear XXX,

Have you got your _____ Fund off the ground yet? Did you receive the Proposal I sent you last week?

Do you agree that the logic of the Analogy I used for the proposed Low-Risk, AWESOME Payoff, "Proof-of-Principle" (POP) Experiment is sound? If a rational Investor were convinced (e.g. by the photos published by Nitro-Nobel Medalist, Melvin Cook) that it is possible to put a plasma in the state of liquid metal (Liquid Metallic Plasmoids, or LMPs), and that the ONLY risk is that when cooled to room temperature they will not yet crystallize [but won't crystallize until down below, e.g.. the temperature of liquid nitrogen], which risk will be taken by OPM [Other People's Money] when the scientific community realizes that LMPs can be created at will, and that there is ZERO risk in performing the proof-of-principle demonstration experiment to convince them of this fact, and that this can be done for as little as \$150,000 (which will also permit Patent Applications ensuring the inside track when LMPs get crystallized), don't you agree that the Reward to Risk Ratio of $\$3 \times 10^{10} / \$1.5 \times 10^5 = 2 \times 10^5$ multiplied by the probability of crystallization at room temperature (which is supported by hundreds of theoretical papers on MSH and at least one recent paper in Physical Review Letters on MSP, as much, much better than 50%), namely an EXPECTED REWARD/RISK RATIO of more than 100,000-to-1 implies that this Proposal is "better" than any proposal made in this field yet, when you note that each of the 3 main products to be manufactured from crystallized LMPs, namely MSP, MSD, and MSH, EACH separately addresses a different Trillion-Dollar Market with a clear Profit Potential of more than \$10 Billion?

Moreover, this is a Proposal in which the Investor who RISKS \$150K will know within a mere 6 or 7 months WHETHER OR NOT Phase One of his speculation has paid off! (And it is highly likely that the Absolute Answer will be known within another 3 months, considering how fast the scientific community reacts to something, e.g. High-Temperature Superconductors, which is both surprising and EASY to replicate!)

Please tell me when a Speculative Investment Possibility better than this one has last crossed your desk? (I'll bet, NEVER!)

Regards,

Bob Bass

Dr. Robert W. Bass, Registered Patent Agent 29,130 [ex-Prof Physics]

Inventor: Topolotron, Plasmasphere, issued; QRT Cold Fusion, pending

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(End of excerpt)

This Draft Solar PEIS should thoroughly and honestly compare the cost-effectiveness of a World War II Manhattan Project-styled crash program to quickly develop and commercialize energy inventions based on the above versions of metamatter.

(If you have difficulty contacting Dr. Bass, email me, Gary Vesperman, at garyvesperman@yahoo.com. He called me a few months ago from Dallas (?). What I have of his phone numbers are 817-682-2655, 817-377-7638, and 817-370-7109. I also have his current email address.)

Locomotive Power Sources

High-speed trains typically rely on some means of supplying energy to the locomotive from an external source. For example, cumbersome overhead electric lines are tapped to directly power a locomotive's electric drive wheels. Another method of connecting the locomotive to an electricity grid is with a dangerously exposed high-voltage third electrified rail. Linear magnetic propulsion mechanisms have been researched.

It would be much cheaper and easier to build and operate high-speed trains if their locomotives utilize an internal practically fuel-less power source.

The following candidate high-speed locomotive power sources appear worthy of further research. Some may be found to be worthwhile for building and testing prototype self-powered locomotives.

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BlackLight Power's Hydrino Generator

BlackLight Power, Inc., is developing an exotic new source of clean energy from ordinary water. Either an electrolytic cell or gaseous potassium ions in a vacuum compress hydrogen atoms into lower-energy-state hydrogen atoms called "hydrinos". When the hydrinos are formed, energy is released which in magnitude is between chemical and nuclear energy. BlackLight Power, Inc., has ambitious plans for retrofitting fossil-fueled and nuclear power plants.

BlackLight Power, Inc., is developing a 100-kilowatt generator which can power a car 100,000 miles on a tank of water. BlackLight Power, Inc., claimed some years ago that it is developing a 10-kilogram battery which can supply 150 horsepower for 1,000 miles.

BlackLight Power, Inc., has already licensed 8,250 megawatts of clean, safe hydrino generation fueled by water to seven utilities (Hoover Dam's nameplate capacity is 2,080 megawatts) – eliminating \$2 billion/year in fuel costs.

Focus Fusion

See <http://www.focusfusion.org/>. Apparently this method is much less expensive than hot fusion.

Thorium PowerPack

Bob Dratch's thorium powerpack would generate electricity at approximately one-tenth of the cost of current methods of producing electricity. Thorium is sufficiently abundant that the entire planet can be powered for millennia. After ten years of continuous operation, a trace amount of U-233 is produced. U-233 recovery to re-purify the thorium is easily accomplished. Thorium thus lasts a long time when recycled and consequently is a very efficient energy source. After extraction from ore, thorium does not require energy-intensive enrichment as is the case with uranium.

A thorium-powered reactor is inherently safe. It doesn't run the risk of "meltdown" or explosion nor can even a dirty bomb be created. Its nuclear reaction simply stops when its neutron exciter is turned off.

The simplest and smallest "table top-sized " neutron exciter design is something close to the size of a 4-D cell flashlight, and starts at about 500-kilovolt neutron output. In fact this smallest most cost-effective system can run off 4 D cells for its power.

A thorium powerpack's neutron excitor does not use radioactive flux components as conventionally done for portable systems. Instead it relies on Dratch's invention of a novel method of resonant phonon pair cleavage using specifically designed nuclear lattice holo-forms (holographic waveforms) to induce neutron imbalance in a host atom where the host atom then attempts to establish "balance" through the liberation of neutrons. Dratch demonstrated the first model of this novel design back in 1966.

Commercial thorium powerpacks can be developed with 50 or 100 kilowatts of output for home use, and up to 1 megawatt for industrial use. They actually are "power amplifiers" with power outputs of 60 times over input power. Maintenance would be minimal.

IPMS Thorium-227 Electricity Generator

The I.N. Frantsevich Institute for Problems of Materials Science (IPMS), Kiev, Ukraine, from 1951 through 1991 secretly employed 6600 of the most brilliant theoretical physicists in the entire Soviet Union to work for nearly 50 years with complete freedom. They were able to develop whole new sciences, technologies and materials unknown in the West.

Their models of non-linear quantum mechanics, plasma physics, atomic engineering, nuclear physics and related mathematical and theoretical constructs, which made their development possible, are so unique that they challenge the validity of the most fundamental assumptions embodied in the Copenhagen Interpretation model currently held in general acceptance in the West.

For example, Western-developed particle/wave quantum mechanics is described by Einstein's $E = MC^2$. The Soviet nonlinear model of quantum mechanics is described by the formula $E = M_K v$ [Energy = Mass @ rest as a function of a mathematical constant].

Einstein's theory of relativity assumes that the speed of light is constant. However, measurements have shown that the speed of light has slowed down 7 per cent over the past two centuries. (See http://worldnetdaily.com/news/article.asp?ARTICLE_ID=39733.) Einstein's famous equation is therefore not based on the real world of peer-reviewed experimental results. Consequently the more correct Soviet model has enabled numerous technical advances not even dreamed of by Western science.

Among several energy inventions developed by the IPMS are free-standing thorium-227 isotope electric power generating plants. They can be small enough to power a single home and large enough to power whole communities. They also can operate for up to 18 years without ever requiring refueling or maintenance.

Micro-Fusion Reactor Employing Stable High-Density Plasma Electron Spiral Toroids In Neutron Tube

Electron Power Systems, Inc., (EPS) has discovered the explanation for ball lightning and from that has invented and protected with five patents an Electron Spiral Toroid Spheromak micro-fusion reactor. Safe, pollution-free micro-fusion reactor-powered generators could reliably generate electricity with capacities ranging from 10 kilowatts through 1000 megawatts at the cost of 10% of today's electricity. All transportation vehicles could be reliably and safely powered with micro-fusion reactors with substantially lower production, operating and maintenance costs and without poisonous emissions. EPS expects to reduce the mass and cost of aircraft by 70%, and space launch costs by more than 95%.

Each year 15 million cars and trucks are sold in the USA, and 48 million are sold worldwide. EPS expects to eventually replace all of them with silent, reliable, safe, emissions-free micro-fusion reactor powered electric vehicles with substantially lower production, operating, and maintenance costs.

In addition, EPS has designed a 10kW generator that will operate on clean, non-polluting fuel, and can operate locally. This innovation will potentially improve the lives of most of humanity by making available low cost electricity that anyone can produce in their own homes. It will help literally billions of people. The paper design shows that the EPS generator will be the approximate

size and cost of a 10 kW generator available today in any hardware store, with the advantage that it will not use fossil fuels, but will use clean energy instead.

An article in the Institute of Electrical and Electronic Engineers, Inc., Spectrum magazine over ten years ago stated that world demand for electricity increases approximately 500 megawatts every day. To put this in perspective, the equivalent of another Hoover Dam would have to be built every four days to keep up with world electricity increase demands. The EPS innovation will make local generation possible without the need for more power plants or more power lines.

Major contributors to air and water pollution are the fossil-fueled engines of aircraft, farm harvesters and tractors, ships, boats, snowmobiles, trains, military vehicles, and all-terrain vehicles. Their engines could be replaced with cheaper electric motors and batteries charged by safe, non-polluting onboard micro-fusion reactor powered generators.

Electron Power Systems, Inc., (EPS) is an early stage company working to develop the Electron Spiral Toroid Spheromak micro-fusion reactor. From EPS will come new applications, including a practical micro-fusion electricity generator, a low-cost space launch vehicle, a high-kinetic energy anti-missile beam, and practical zero-emission cars, trucks, buses, farm equipment, construction equipment, military vehicles, and jet aircraft.

EPS is moving to commercialize these concepts. EPS has assembled a team of engineers, and plasma physicists, all as contractors. EPS is working on proof of concept demonstrations for the applications.

EPS plans to build a laboratory demonstration unit in two to three years with present funding levels, and then the first commercial prototype. Recent breakthroughs in the EPS lab give confidence this will happen within this timeframe. More funding will make this happen sooner.

EPS is seeking \$2 million as a first round of investment to complete the development of a demonstration unit in eighteen months. A second investment of \$8 million will be needed to complete a prototype unit in eighteen months after the demonstration unit.

Up until now EPS has had no sales and operates with funding from angel investors, each of whom is retired and has accumulated a substantial personal fortune, allowing these types of investments of high risk, high reward. EPS also operates with funding from the founder.

EPS operates on a low budget, spends only what it has, and has incurred no debt or obligations. In this manner it is able to operate indefinitely, while continuing to make progress each year. Additional small amounts of funding will speed developments.

EPS has made a new discovery in physics with the potential to locally produce low-cost, clean energy for homes and buildings, independent of power plants. EPS owns the new technology and plans to initially produce a safe, clean, 10-kilowatt electricity generator that needs no nuclear fuels nor fossil fuels and will produce no green house gases. A home owner would need a one-liter sized container of environmentally benign hydrogen/boron fuel per year at a 20:1 fuel cost savings compared to commercially produced electricity or fossil fuels.

EPS's new discovery would allow anyone worldwide to buy a small home generator, about the size but less than the cost of a Sears 10-kilowatt portable generator. It would power their home plus

several nearby homes even where there are no power grids or power plants. This will be a step towards providing low-cost, local electricity to help eliminate poverty worldwide.

EPS plans to build 10-kilowatt generators by applying its newly discovered technology to improve work done by others to create energy. The basic work was shown successfully in the 1980s at the University of Miami. But that technology had limitations at that time. EPS's new technology will overcome those limitations.

From a modest start with producing 10-kilowatt micro-fusion reactor powered generators, EPS expects to branch out to other applications of its technology as well as producing larger and larger generators.

Mankind's practically insatiable demand for energy implies a simply humongous market potential for EPS which would encompass all of the world's producers of oil, coal, uranium and electricity plus all manufacturers of transportation vehicles including cars, trucks, buses, farm equipment, ships, boats, construction equipment, trains, satellites, aircraft, snowmobiles, and military vehicles.

Several thousand neutron tubes are in use in the USA today that safely collide hydrogen ions to produce neutrons, which in turn are used for medical testing, industrial process control, and homeland security. An ion source produces hydrogen ions (deuterium), which are accelerated to 110 kilovolts, then directed to hit a hydrogen target (also deuterium), which produces neutrons, and also heat as a waste product. Neutron tubes today produce neutrons and a low level of heat energy. The low density of the hydrogen ions limits the amount of energy produced.

In the 1970's, Dr. Wells at the University of Miami collided two plasma toroids to produce low-level fusion energy in the TRISOPS system. The amount of energy produced was limited by the short duration time of the plasma toroids used, as well as their low density and their low level of energy.

Electron Power Systems, Inc., (www.electronpowersystems.com) has discovered a plasma electron spiral toroid that remains stable without magnetic confinement, by using background gas pressure for confinement instead. These new plasma toroids are observed to remain stable for thousands of times longer than classical plasma toroids, which opens the way for new clean energy applications.

EPS's new stable plasma electron spiral toroids overcomes each of the neutron tubes limitations, and will potentially result in fusion with no magnetic containment required – thus producing a practical micro-fusion reactor. EPS's challenge is to adapt the new stable plasma toroid to the TRISOPS method.

The micro-fusion reactor adapts the Electron Spiral Toroid (EST) Spheromak to the neutron tube design. The EST Spheromak is patented jointly with MIT scientists who also have published papers confirming the EST Spheromak physics and data. The EST Spheromak will overcome the neutron tube limitations by increasing ion density by 2500 times. A metal containment can be used for efficient heat energy collection and conversion.

The EST Spheromak micro-fusion reactor will be less than three feet in length, the same as for present neutron tubes, and small enough to fit in an electric car. Elimination of the need for magnetic containment allows this power supply to be small and compact. A micro-fusion reactor will use hydrogen/boron to produce clean energy without neutrons. The energy in one pound of

hydrogen/boron fuel equals the energy of 250,000 pounds of gasoline. Hydrogen and boron are plentiful and will not run out, as oil is projected to do in the 21st century.

The Electron Spiral Toroid Spheromak (ESTS) is a plasma toroid that is self-organized and self-stable with no magnetic fields needed to contain it. Inventor Clint Seward has not seen any published descriptions of any devices nor phenomena similar to the ESTS. The US Patent Office agrees and has issued five patents.

The micro-fusion reactor was recently selected by the New Energy Congress as one of the few technologies now known to have a genuine potential to replace fossil fuels. See the lengthy analysis of the micro-fusion reactor in http://pesn.com/2006/03/08/9600242_Spheromak_Plasma_Toroid/.

"Locomotive Power Sources" for high-speed rail in www.padrak.com/vesperman includes the micro-fusion reactor with BlackLight Power's hydrino generator, focus fusion, Robert Dratch's thorium powerpack, Kiev, Ukraine's I.N. Frantsevich Institute of Problems of Materials Sciences (IPMS) thorium-227 electricity generator, Clem over-unity vegetable oil engine, thin-film electrolytic cells, noble gas plasma engine, Searl effect generator, Magnatron - light-activated cold fusion magnetic motor, Oleg Gritsevich's hydro-magnetic dynamo, IPMS energy storage/battery device, metamatter which is solid crystallized fully-ionized plasma, Gordon Ziegler's electrino fusion power reactor, and environmental heat engines.

Some of these listed new energy inventions appear to have at least one limitation that is not shared with the ESTS micro-fusion reactor.

The Electron Spiral Toroid Spheromak (ESTS) micro-fusion reactor has five patents and is documented in published papers confirming the physics and data. (1), (2), (3), (4)

Clint Seward discovered the ESTS (5) while studying ball lightning. Seward has developed a secret formula to produce the ESTS that is not reported in any other reference to date that he has seen.

Why this is important is that all spheromaks reported to date dissipate in microseconds, while the ESTS has been observed to endure with no confining magnetic field for hundreds of milliseconds, and theoretically will remain stable for many seconds.

1. Seward, C., Chen, C., Ware, K., Ball Lightning Explained as a Stable Plasma Toroid. PPPS-2001 Pulsed Power Plasma Science Conference, June 2001.
2. D. C. Seward, C. Chen, R. Temkin, Energy Storage Device, US Patent 6,140,752, Oct. 31, 2000.
3. C. Chen, R. Pakter, and D.C. Seward, Equilibrium and Stability Properties of Self-Organized Electron Spiral Toroids, Physics of Plasmas. Vol. 8, No. 10. Oct. 2001.
4. W. J. Guss, Chen, C., Equilibrium of Self-Organized Electron Spiral Toroids. Physics of Plasmas. August 2002.
5. Seward, C., Ball Lightning Explanation, Leading to Clean Energy. Acton, MA 01720. Seward Publishing Co., 2011.

EPS plans to initially produce a safe, clean, 10-kilowatt electricity generator that needs no nuclear fuels nor fossil fuels and will produce no green house gases. A home owner would need a one-liter sized container of environmentally benign hydrogen/boron fuel per year at a 20:1 fuel cost savings compared to commercially produced electricity or fossil fuels.

But first EPS needs to obtain \$2 million as a first round of investment to complete the development of a demonstration unit in eighteen months. A second investment of \$8 million will then be needed to complete a prototype unit in eighteen months after the demonstration unit.

EPS's new discovery would allow anyone worldwide to buy a small home generator, about the size but less than the cost of a Sears 10-kilowatt portable generator. It would power their home plus several nearby homes even where there are no power grids or power plants. This will be a step towards providing low-cost, local electricity to help eliminate poverty worldwide.

From a modest start producing clean, reliable, safe 10-kilowatt micro-fusion reactor powered generators, EPS plans to methodically produce larger and larger generators. EPS even has a preliminary design with supporting calculations for massive 1000-megawatt baseload generators.

Mankind's demand for energy implies an enormous market for micro-fusion reactors encompassing all of the world's producers of oil, coal, uranium and electricity plus all manufacturers of transportation vehicles including cars, trucks, buses, farm equipment, ships, boats, trains, satellites, aircraft, mining equipment, snowmobiles, construction equipment, and military vehicles.

Countries which export oil will benefit from not having to quickly burn up their finite oil reserves on cheap gasoline and diesel fuel. Instead they will be able to draw down their reserves more slowly by making products of higher value such as plastics, medicines, fertilizers and synthetic textiles.

Some years ago a Forbes article stated that PECO (formerly Philadelphia Electric Company), with an income stream to back it up, was able to sell on Wall Street \$4 billion worth of bonds paying 5.8 per cent. A micro-fusion reactor powered generator manufacturer could simply sell bonds to build and operate generators at a low interest rate. Generator loan payback times may be in the ball park of a half-year to a year, depending on the local electricity market price. As soon as a micro-fusion powered generator is paid for, the revenue from that time on would be almost pure profit. Once a track record is established by successfully installing a few micro-fusion reactor powered generators, Electron Power Systems, Inc., could raise money to build and install more generators by simply selling billions of dollars of bonds instead of stock. So therefore, there wouldn't be any dilution of ownership.

EPS plans to partner with major electricity producers and suppliers. EPS will license them to produce electricity as they do now. EPS plans to partner with automobile manufacturers to license the technology. EPS plans to partner with defense and aerospace contractors to license the technology.

MANAGEMENT

Clint Seward is the discoverer of the Electron Spiral Toroid Spheromak and received the initial patents. He has been working ever since to scale up the results, which he has been able to do recently. He has been a project design engineer and program manager for many years, working initially with the US Air Force B-58 Hustler program, and as a project manager and engineering

manager in several major corporations. His work was defense initially, moving to security and process control, then energy related.

Clint was an Engineering Manager for Mosler, an American Standard Division 1970 thru 1978, and an Engineering Manager and VP of Marketing for Bristol-Babcock 1978-1985 – an ACCO fortune 500 Company. He was General Manager of Iontrack, a Division of a large international company 1985-1989 (now a Division of GE). He has been President of his own company Electron Power Systems, Inc. from 1989 to present.

Education: MSEE; University of Michigan 1965; BS at US Military Academy at West Point 1963.

D C Seward is the VP Engineering of Electron Power Systems, Inc. He has worked on the micro-fusion reactor technology since its inception in 1986. He has the responsibility for organizing the experiments and bringing qualified people in to help with the work. DC has worked as the VP Engineering of EPS on a contract basis from 1998-Present as funding allows. He is employed full time as a Field Sales engineer for Ember Systems, a wireless technology company, 2005-Present. Previously he was a Product Design Engineer, Trimble Navigation: 1994-1998

Education: MSEE Massachusetts Institute of Technology, 1994.

Jim Becker is acting CEO and Marketing VP. Jim has experience as a senior executive in the high tech sector with extensive experience managing rapid growth organizations. He has a broad technology background with proven skills in computer systems, avionics industries, and health care information technology along with direct functional experience in finance, sales, marketing, engineering and corporate management in both domestic and international settings.

Education: Thayer School of Engineering, Dartmouth College; Master of Engineering 1976; Master of Business Administration 1975; Bachelor of Engineering 1970.

PAPERS AND PATENTS for Clint Seward:

Chen, C., Pakter, R., Seward, D. C. "Equilibrium and Stability Properties of Self-Organized Electron Spiral Toroids." Physics of Plasmas. Vol. 8, No. 10. October 2001.

Seward, C., Chen, C., Ware, K. "Ball Lightning Explained as a Stable Plasma Toroid." PPPS-2001 Pulsed Power Plasma Science Conference. June 2001.

Seward, C. "Propulsion Using a Stable Plasma Thruster." STAIF 2001, (Space Technology and Applications International Forum-2001). American Institute of Physics , www.aip.org/catalog/conforder.html. February 15, 2001.

Seward, C.; Chen, C., Temkin, R. ENERGY STORAGE DEVICE , US Patent 6,140,752, October 31, 2000.

Seward, D. C. Electron Spiral Toroid; US Patent 5,773,919; June 30, 1998.

Seward, D. C. Energy Storage System, US Patent No. 5,589,727. December 31, 1996.

Seward, D. C., Chen, C., Temkin, R. (1996b). International Patent Application WO 96/38848, Energy Storage Device, Published December 5, 1996.

Seward, D. C. Fixed Geometry Plasma and Generator, US Patent 5,175,466. Dec. 29, 1992.

ESP's President Clint Seward collaborated with Gary Vesperman in writing a description of Seward's invention in www.padrak.com/vesperman. See "Locomotive Power Sources".

The Products page of www.electronpowersystems.com sells a book "Ball Lightning: Leading to Clean Energy" and a paper "Spheromaks Observed Forming in Atmosphere". Paper's abstract:

Plasma toroids, called spheromaks, are reported here as observed forming in partial atmosphere from high power electric arc events similar in power to lightning ground strokes. The spheromaks are observed to be stable in partial atmosphere with no confining magnetic fields and are observed to last for more than 200 milliseconds in partial atmosphere. This paper describes the observations and presents a model that explains the properties of these spheromaks, which we call Electron Spiral Toroid Spheromaks (ESTS's) due to the spiraling motion of the charged particles. It includes four TV images. The model presented is a hollow toroid with a thin outer shell of electrons that all travel in parallel paths orthogonal to the toroid circumference, in effect spiraling around the toroid. A comparable inner surface of ions acts to neutralize the space charge. The paper provides formulas describing the ESTS. Potential ESTS applications include X-ray production, air defense, and energy production.

The cost to produce a 10-kilowatt EST Spheromak electricity generator would be about \$1100 in production quantities. The EST Spheromak generator would have fewer parts than a comparable Sears generator.

Electron Power Systems, Inc., does not have a working prototype. The company has identified the instrumentation and needs another \$100,000 for laboratory work. With \$2,000,000, the company expects to have in two years a demonstrable prototype. In an additional year for \$8,000,000 a production prototype is expected to be built. Remember, each piece of the project uses technology others have demonstrated.

Clem Over-Unity Vegetable Oil Engine

Richard Clem was a heavy equipment operator who had noticed that a hot asphalt sprayer would continue to run for up to an hour even after the power was turned off! So he built a modified version as a 200-pound engine which ran on vegetable oil at 300 degrees and was started by a 12-volt battery. The heat is internally generated by the engine. During a nine-day test conducted by Bendix Corporation engineers, the engine in its self-running mode consistently generated 350 horsepower into a dynamometer. The engine is constructed from off-the-shelf components except for a hollow shaft and a custom cone with enclosed spiral channels.

If the automobile industry adopts the Clem over-unity engine, motorists could change its eight gallons of vegetable oil only every 150,000 miles and never buy any gasoline. To illustrate the engine's durability, the only working model of the Clem engine has been continually running on his son's farm for several years.

Combining the Clem over-unity engine with the hydrosonic pump could provide distilled ocean water as well as hot water for space heating, kitchens, and bathrooms at *no* energy cost.

The Clem over-unity vegetable-oil engine is not patented. It may be fairly straightforward to set up a small machine shop for manufacturing hollow shafts and cones.

Thin-Film Electrolytic Cells

A number of seasoned technology integrators have developed thin-film energy storage technologies which hold considerable promise. Dr. George Miley, Dr. Robert Hockaday and others have developed thin film technologies with energy densities exceeding 250-400 watt hours per kilogram. Dr. Miley's invention is illustrative. Using a flowing pack-bed type electrolytic cell with 1-molar LiSO_4 in light water, 1mm plastic beads with a very thin [500-1,000 angstrom] film of metal [nickel, palladium, titanium] are employed. A special sputtering technique is used to spray the metals onto the surface of the beads. With 2-3 volts of electrical power and 1.5 milliamperes of current, the single film experiments have shown the material to produce more than 10 times as much output power as input. The input power is no more than 0.01 watts while .5 watt of heat is produced.

It is likely that the physics involved in this reaction involve the release of energy as a by-product of nuclear transmutation. Dr. Miley has written, "The key finding from these studies has been the observation of a large array of "new" elements (i.e., different from the original bead coating), many with significant deviations from natural isotopic compositions, after the run.

Great care has been made to ensure that these elements are distinguished from isotopic impurities by use of a "clean cell" with high purity components and electrolytes, in addition to the pre-and post-run analyses. Even low-energy radiation was detected from the bead days after each experiment. Applications to space power, providing a 1-kilowatt cell with only 500 cubic centimeters of active electrode is predicted." Note that this particular invention, with its large over-unity energy yield, was awarded a NERI grant by the DOE. At the insistent urging of the American Physical Society and representatives from MIT and other universities whose laboratories are currently engaged in high-temperature gas-cooled nuclear reactor research, Secretary Richardson eventually withdrew the grant. The tangle-footed Department of Energy actively discourages the development of new sources of energy, presumably to appease the oil, uranium and coal companies. The U.S. Patent Office has unfairly classified secret nearly 5000 energy patents. Luckless energy inventors then risk 20 years in prison if they work on, sell, or publicize their energy invention – often created at great personal sacrifice.

Searl Effect Generator

The Searl effect generator (SEG) can be used to charge the batteries in a self-powered electric vehicle. A solid-state device, the heart of an SEG is a series of three concentric magnetic rings with magnetic rollers going around the rings. Both the rollers and rings are comprised of four layers of titanium, iron, nylon, and neodymium.

The magnetic fields impressed on the rollers have both AC and DC components. The AC component is for floating the rollers so they don't touch the rings. The DC component is to prevent them from flying off. The innermost set contains a minimum of 12 rollers for the same reason that a linear motor will not operate with less than 12 phases.

The inner set of rollers travel around at 250 miles per hour, the middle set travels at approximately 600 miles per hour, and the outer set at approximately 1500 miles per hour. Hundreds of millions of volts are generated the energy of which is picked up by brushes positioned all around the outside set of rollers.

An SEG also creates an anti-gravity field. An uncontrolled SEG will rise about 50 feet as the rollers increase speed, emit a light blue halo which indicates energy is being extracted from the ether, and then shoot up into the sky gaining speed, never to be seen again. At least one roof has been holed by an SEG. The friction-less rollers can be prevented from reaching the critical velocity that produces lift by use of a “governor”, either mechanical or electronic.

An SEG can be easily controlled by immersing it in an electromagnetic wave field the frequency of which is a harmonic of the SEG’s primary frequency. While in resonance, the magnetic poles of the rollers reach a unification state, and they stop moving.

The inventor has built and flown a small “inverse gravity” vehicle. A flying saucer-like SEG-powered aircraft about the size of a bus is currently being built in England by a private group.

The inventor for some years independently powered his house off the power grid with a home-sized electrical generator version of the SEG. A householder could set up a 45 x 45-cm unit and generate an output of 11 kilowatts of free electrical power.

Oddly, a house powered by an SEG has been observed to have greater healing powers than conventionally electric powered houses. The healing effect is claimed to be due to the electrons zapping the occupants, taking away pain and returning blood more quickly to damaged tissue. The SEG would also help combat asthma, bronchitis, hay fever and lung complaints due to the increased supply of oxygen in the body. Conventional methods of electric power do not pump out electrons which results in tired eyes and a tired brain.

The SEG's negative charge also means that dust stays in the carpet instead of floating in the air. This is similar in action to negative ion generators sometimes sold as air fresheners.

Two Russian scientists replicated the Searl effect generator and vindicated all of these somewhat unusual claims. See their paper “Experimental Research of the Magnetic-Gravity Effects”, V. V. Roschin and S. M. Godin, Institute for High Temperatures, Russian Academy of Science, Izhorskaya 13/19, Moscow 127412, Russia.

At one time, a German power company reportedly considered replacing a nuclear power station with eight fuel-less SEGs costing a total of about \$4.5 million and generating a total of 240 megawatts with no pollution.

Noble Gas Plasma Engine

Joseph Papp was granted US Patent #3,670,494 for his “Noble Gas Plasma Engine”. A mixture of recycled inert gases (helium, neon, argon, krypton, and xenon) is exposed to a high-voltage discharge in a sealed cylinder with a piston. The spark causes the gases to expand violently though no combustion occurs. Mechanical energy is delivered by the piston's displacement. The gases immediately collapse to their original density, and the cycle is repeated. After several thousand hours the gases lose their elasticity and are replaced. The operating cost is 15 cents an hour.

The first prototype was a simple 90-horsepower Volvo engine with upper end modifications. Attaching the Volvo pistons to pistons fitting the sealed cylinders, the engine worked perfectly with an output of three hundred horsepower. The inventor claimed it would cost about twenty five dollars to charge each cylinder every sixty thousand miles.

There were indications that such an engine could provide its own electrical power and being a closed system, require no fuel. It is not by definition an electromagnetic engine, however. It is believed that at the heart of the Papp engine is the development of high-density electrical charge clusters which provide the energy to expand the gases.

Other patents are 5319336, 4151431, 3670494, 4046167 - Mechanical Accumulator, 3680431 - Method and Means for Generating Explosive Forces, and 4,428,193 - Inert Gas Fuel, Fuel Preparation Apparatus and System for Extracting Useful Work from the Fuel.

Magnatron – Light-Activated Cold Fusion Magnetic Motor

During the late 1970's Howard Rory Johnson, a brilliant inventor in Elgin, Illinois, combined light-activated cold fusion with a new type of magnetic motor into a "Magnatron". His prototype Magnatron produced 525 horsepower but only weighed 475 pounds. It could propel a large truck or bus 100,000 miles on about 17 ounces of deuterium and 1.5 ounces of gallium before being recharged. This was years before either Pons and Fleischman or Dr. James Patterson entered the scene with their cold-fusion technology.

Johnson discovered the light-activated cold fusion portion of the Magnatron by accident when as he was developing a new type of electronic circuit using deuterium oxide and gallium, he noticed the two materials were producing energy on their own. He could not figure out what was triggering the energy production for some time until he finally discovered it was light.

The Magnatron's flow of deuterium (an isotope of hydrogen) is controlled by magnetic tunnels. At the point where the deuterium strikes the gallium (a heavy metal electron donor), a beam of light from a diffraction prism forces their fusion. That controlled reaction results in the fusion of two atoms forming a new atom. In the process, electricity is released, and that is what powers the magnetic motor. The Magnatron is sealed, however, so 'light' is provided from photon energy produced from coils tied directly to the motor. It is more or less a pulse-generated system.

A photon is a football-shaped particle of electromagnetic wave energy. Its energy content is a product of its frequency f and Planck's constant h . When an electron in orbit around the nucleus of an atom drops to a lower, less energetic orbit, a photon containing the energy equivalent to the electron's energy drop is emitted. This explains why light and other forms of electromagnetic energy such as gamma rays and radar are sometimes observed as particles and other times as waves. The heated filament of a light bulb is an example of photon production.

There is no way to explain, using contemporary electrical theory, how his relatively small motor could produce such tremendous horsepower. Utilizing his own new electrical-magnetic energy theory, involving a process he called "attract-attract", Johnson exploited the magnetic field. He used the top and bottom rotors in his motor. First, the top rotor attracted, released; then the bottom rotor attracted, released. The action of attraction, alternating between upper and lower magnets, used the windings to complete the attract field.

Robert Nelson's compilation of articles about the Magnatron provides much more technical detail on the Magnatron than the foregoing. (See <http://www.rexresearch.com/magnatron/magnatron.htm>.)

Johnson constructed his prototype Magnatron's 525-horsepower magnetic motor without any of the hardware that is presently used in present state-of-the-art electric motors. Conventional motors use the accepted principle of attract-repel, an energy form that doesn't utilize the magnetic field to its greatest advantage. For comparison, a typical 500-horsepower electric motor has wires exiting it that are the size of a garden hose.

The sealed self-contained Magnatron has no wires. Thus, other than the Magnatron's infrequent refueling with small amounts of deuterium and gallium, the stand-alone Magnatron uses no input power. The Magnatron's entire output power is conveyed by its magnetic motor's rotating shaft.

Fuel for the Magnatron is plentiful: deuterium is derived from water, and gallium is extracted from abundant aluminum bauxite. Commercially available pure gallium is still scarce and expensive. It may well be possible, however, to cheaply transmute another less expensive element into gallium. See Gary Vesperman's list of over two dozen methods of neutralizing radioactive waste in <http://freeenergynews.com/Directory/NuclearRemediation/Vesperman/> which includes possible transmutation methods. Additional methods are briefly described in <http://freeenergynews.com/Directory/NuclearRemediation/>. Dr. Santilli's method plus an explanation of suppression of radioactivity neutralization methods are available at <http://www.nuclearwasterecycling.com/>. Robert A. Nelson's survey "Transmutations of Nuclear Waste" is at <http://www.rexresearch.com/articles/nukewa.htm>.

The Magnatron uses no fossil fuel in its operation, and it emits no pollution. The magnetic motor's RPM is 8,000 with a gear ratio of 2:1. Lubrication for the sealed motor is synthetic motor oil which does not need changing and does not need a filter, because foreign materials such as carbon and varnish are not introduced into the system, as they are in the internal combustion piston engine.

This writer, Gary Vesperman, attended the 3rd International Symposium on New Energy in Denver, CO (April 25-28, 1996). I remember being impressed by Gerald Orłowski's lecture "Magnatron, Fusion Magnetic Motor", during which he provided substantial technical information on the Magnatron.

Orłowski reported that, "Some inside information revealed that OPEC had been keeping track of all competitive technology", and Johnson was #1 on their hit list! Johnson was about to manufacture the motors through a nationwide dealership. Some motors still exist, but the owner wants several million dollars for them."

This writer Gary Vesperman knows of very few inventions of new energy sources which are reasonably large stand-alone energy producers. Besides the Magnatron, they include Oleg Gritskevitch's hydromagnetic dynamo, and Electron Power Systems' micro-fusion reactor, which employs stable high-density plasma electron spiral toroids. Almost all inventions of new energy sources are, or claimed to be, relatively small over-unity power converters that convert input power to greater amounts of output power. Bob Dratch's thorium powerpack is an exception (see above).

At the September 14, 2005 public meeting in Green Valley Ranch casino regarding the proposed Regional Fixed Guideway traversing Las Vegas, Nevada, this writer Gary Vesperman submitted comments suggesting possible power sources for the train, including descriptions of the hydromagnetic dynamo and the micro-fusion reactor (<http://www.rtcsonthernnevada.com/rfg/documents/September2005PublicMeetingMinutes.pdf>, pp. 19-77).

No wonder the Magnatron's inventor, Rory Johnson, was rumored to have been "Number One" on Organization of Petroleum Exporting Countries (OPEC)'s hit list.

The following is an excerpt, slightly edited, from Orlowski's lecture transcript where he tells about his unwitting personal involvement with the U.S. Government's suppression of the Magnatron:

"After I saw the Magnatron motor, my life changed. I was no longer a happy camper working by myself in a wonderful, fully equipped research machine shop for the Greyhound/Armour Corporation in Arizona. While on a business trip, I saw this motor running in the Magnatron, Inc.'s showroom located in Elgin, Illinois.

"During my 15 years of electric motor repair, among the hundreds of motors I repaired, I rewound a 500 HP electric motor. That motor had wires exiting it that were the size of a garden hose. The Johnson motor being shown had NO wires. Surely this motor was unreal, a con-job to get money for dealerships. Yes, there he was, Rory Johnson standing next to his sealed self-contained electric motor.

"Upon returning to the Greyhound Towers and telling them what I had seen, they instructed me to call Mr. Johnson. Greyhound wanted Johnson to put forth a plan to install a motor in one of their buses for testing purposes.

"I called Johnson. He was delighted that a Greyhound employee had seen the motor running, and replied that the testing idea was acceptable. He would set a time frame for just when a bus should be delivered to him.

"Two years went by, with no business proposal from Johnson. Then, his former business partner, Mike Marzicola, called to say Johnson had passed away. He wanted me to work with him to get one of the motors running. I flew to Orange County, CA, saw the motor, took pictures, and put forth a plan to Greyhound. Subject to a contract with Marzicola, one of the old worn motors would be brought to the research shop. I would then very carefully reconnect the generator wires that Johnson had cut off prior to moving from Elgin, IL to California.

"Discussions with Marzicola brought out that the U.S. Government (given the authority by the Congress of 1952) had issued a GRAB order to take Johnson's motors. Rumor has it, the DOE is run by US oil companies and OPEC, and they want no competition, period. Because of this grab order, Johnson had cut the generator wires. He had then put his 'total shop', with motors and all, on several U-Haul trucks and left Illinois in the middle of the night. He went to California to re-establish his business. But before he could get a motor running, he passed away.

"Surely, Greyhound would agree to let me re-start one of Johnson's motors. The wonderful proposal put forth to Greyhound was rejected by mail. Very agitated, I went to the top office at Greyhound demanding an explanation. I was met at the door with the comment, "We know why you are here." Knowing the potential savings to the bus company, surely they could have only one reason for rejecting the proposal. They must have believed I was not qualified to start up the motor.

"Greyhound's top legal advisor stated he was present when the Greyhound board met and discussed my written proposal. He stated the following, "At NO time was the thought put forth that you would not succeed. In fact, we discussed all of the hardware designed and constructed by you, and started the conversation from what happens when Greyhound has a running motor. We contacted a State representative who felt this motor should not be allowed to be used in 4,000+ buses. The loss in tax

dollars for fuel alone would be a very huge sum.” He then asked me to leave, stating he was sorry that he had to tell me the reason the plan was rejected.

“Telling Marzicola of the rejection, I offered to personally put in a few thousand dollars toward the parts to get one motor running. In return, I would be assigned the dealership for the Phoenix metropolitan area. We signed legal papers in exchange for the money agreed on, and went to work. (I still have the signed dealership.)

“The first thing I noticed was that someone had been working on repairing the motors. Three motors already had new commutator assemblies installed. Each assembly consisted of 3 commutator assemblies on one insulated tube with a metal case to secure it to the shaft.

“One motor still had the old worn commutator assembly, as it had not yet been repaired.”

Orlowski goes on to describe his reconstruction efforts and includes interesting technical details about the Magnatron’s structure and theory.

Johnson did not know that OPEC tracks all potential competition to its oil business and that he was reportedly number one on OPEC’s hit list. His first mistake was publicizing, in many magazines, his plans to manufacture and distribute his revolutionary motor.

Erik Masen has spoken with a few people who even signed up for distributorships. Erik Masen had included Johnson and his Magnatron in his energy invention suppression anthology (see http://www.electrifyingtimes.com/erik_masen_suppression.html).

In 1979, Johnson placed his engine in a Buick Electra and was preparing to drive it around the country to sign up more distributorships when the US Department of Energy and the State of Illinois teamed up to prohibit his company Magnatron, Inc., from producing and selling Magnatrons. They first placed a gag order on all the people in the company by using the Secrecy Act of 1952.

Secondly, the State of Illinois immediately requested the company to provide information about all of their employees, distributors, stockholders, investors, suppliers, etc. They asked questions that blatantly deny anyone’s constitutional rights to privacy. The pressure from the State of Illinois became so overwhelming that Johnson decided to move his entire business to California in the middle of the night.

After a year of hearing nothing but silence from Johnson, Greyhound agents tried to contact him – only to be notified that he had passed away unexpectedly. This is a particularly troubling part of the story, since he had been in his early fifties and in robust health. Later, Greyhound learned that shortly before he died, Johnson had inexplicably moved out of his laboratory in the middle of the night and taken all of his motors and technology to California.

Bob Bass, in his report copied below on low-energy nuclear transmutation, claims that the CIA, the KGB and the Mossad, etc. all have "sprays" which can be sprayed upon someone and cause him or her to die of apparently natural causes. One speculation is that Johnson’s death – apparently due to heart failure – had been artificially induced by such a spray.

In a January 20, 2007 email to Gary Vesperman, Terry Sisson reports:

“Hi Gary,

“I visited Magnatron, Inc., in July 1979. I wish I would have taken a photo. Placards were placed over every inch of the large windows in the front of the building listing all of the questions the State of Illinois requested his company to provide. He wrote, “When has the government ever had the right to ask this of any company.” I peeked in the front window and saw one of his motors mounted on an engine stand. Nobody appeared to be there so I walked around to the rear of the building. I found the rear garage door open and could see the Buick Electra inside. I was about to approach nearer when a man emerged. We talked, but he quickly informed me that due to a US gag order he was unable to talk about anything. I managed to get his phone number and called him from time to time for years following. He was an assistant of Rory’s and he kept the information very close to the vest. He did tell me that it was real and it worked, yet not how it worked.

“About 1984, I began to call all the Johnsons in the phone book in Elgin. I finally got a hold of Rory’s son. He too said that it was real, but I got nowhere. Around 1992, I met Jerry Orlowski, and he told me his experience as the employee of Greyhound who was sent to investigate the technology, since he wound electric motors for several years. Jerry was very upset about the whole incident, particularly Greyhound’s Board of Directors refusal to utilize the technology after he found the technology to be authentic. Jerry even witnessed the government’s seizure of the motors in California. --- Terry Sisson.”

Hydro-Magnetic Dynamo

The hydro-magnetic dynamo is a doughnut-shaped large-scale emission-free electrical generator which does not require external fueling and operates safely, reliably and silently at moderate temperatures. The dynamo is capable of powering larger transportation vehicles such as buses, trucks, ships, locomotives, and airplanes. Doubt remains about making dynamos compact enough to power automobiles.

The circumstantial evidence for the Russian inventor’s performance claims for his hydro-magnetic dynamo is reasonably strong. While three experimental prototypes have been built with Russian and Armenian expertise and equipment, a fourth demonstration prototype needs to be built with more modern Western engineering expertise and equipment to verify dynamo performance claims and to further explore the dynamo’s potential capabilities. Performance claims are as follows:

Hydro-magnetic dynamos are scalable from 100 kilowatts to 1,000 megawatts. One doughnut-shaped, fuel-less 1000-megawatt dynamo is about the size of a two-car garage. For comparison, Hoover Dam’s 17 generators have a total nameplate capacity of 2,080 megawatts. Seven 1000-megawatt dynamos can be vertically stacked to comprise a single 7000-megawatt dynamo.

A dynamo can reliably run continuously for 25 years or more with little or no maintenance, no external fuel source, and no pollution. If a dynamo’s output is 1,000,000 watts, its total input power is approximately 10,000 watts. So the dynamo’s energy efficiency is 10,000%, or 100 to 1.

The source of the dynamo’s massive electrical output is a nuclear reaction which is not generally known to mainstream science. However, it is known that the dynamo produces alpha particles which are helium nuclei made from fused deuterium, an isotope of hydrogen with one proton and one neutron. The electrons missing from the helium nuclei are what seem to provide a copious “sink” of electricity, and which happen to be the secret to the dynamo’s ability to generate an exceptionally large amount of electricity.

It is also known that the dynamo uses high-density charge clusters. High-density charge clusters are the basis of plasma-injected transmutation of elements and also neutralization of radioactive materials.

There were three dynamo prototypes built. The first two small experimental prototypes were built in Vladivostok. The third and last prototype continuously generated electricity, except when turned off to incorporate improvements, from 1992 to January 1997 in Armenia. (It was sadly destroyed during an armed rebellion by local religious fanatics who were unhappy with the Armenian government.) It generated a constant current of 6,800 amperes at 220 volts DC. That multiplies out to nearly 1.5 megawatts. The Armenian prototype dynamo's toroid weighed 900 kilograms and had a diameter of approximately 2 meters.

Cooling water is circulated through copper pipes wrapped around the toroid. The heat is expelled from the cooling water with a heat exchanger.

After a dynamo is assembled in a factory, the water is literally jump-started (by discharging a large bank of capacitors) to moving around the toroid. The dynamo's controls are temporarily set to generating enough of a modest amount of electricity to sustain itself, even while being transported from the factory to its site. For the Armenian prototype dynamo, two 10-farad capacitor banks (from Russian military radar stations) were used to provide the initial water motion (acceleration and excitation of water). Using a total of 20,000 joules, 100,000 volts with 0.05 amperes of current were applied to the Armenian dynamo for 3 - 5 minutes for starting its generation of electricity.

After these Russian radar capacitors were used to jump-start the Armenian prototype dynamo, a bank of buffer batteries sustained continuous operation when water motion and ionizing occurs. This battery bank contained 8 powerful 12-volt, 150-ampere lead batteries. The Armenian dynamo's sustaining input power was 14,400 watts. The nominal maximum output power is nearly 1,500,000 watts. Once, the output current was accidentally increased to 40,000 amperes for almost a minute. Fortunately, the power was reduced to a safe level before the water started to boil. Internal coils (windings) control water velocity and therefore dynamo power.

The dynamo's production cost is estimated at \$500 per kilowatt which is competitive to nuclear power's capital costs of \$5,000 per kilowatt, windmill capital costs of \$4,000 per kilowatt, etc. A well-run nuclear power plant can generate power for 1.5 cents per kilowatt-hour, coal 1.8 cents, natural gas 3.4 cents, and oil 4.1 cents, on the average. The dynamo's operating cost would be approximately .1 cent per kilowatt-hour with no external fuel needed nor pollution.

Dynamos could replace all nuclear power plants, solar installations, wood-burning furnaces, hydro-electric dams, windmills, fossil-fueled power plants, etc. Satellites, locomotives, heavy trucks, buses, airplanes, and ships are obvious transportation applications. It does not seem that dynamos can be made compact enough to power electric cars although it certainly would be worth trying.

A Forbes article states that PECO (formerly Philadelphia Electric Company), with an income stream to back it up, was able to sell on Wall Street \$4 billion worth of bonds paying 5.8 per cent. A dynamo manufacturer could simply sell bonds to build and operate dynamos at a low interest rate. Dynamo loan payback times may be in the ball park of a half-year to a year, depending on the local electricity market price. As soon as a dynamo is paid for, the revenue from that time on would be almost pure profit.

Once a track record is established by successfully installing a few dynamos, the dynamo company could raise money to build more dynamos by simply selling billions of dollars of bonds instead of stock. So therefore, there wouldn't be any dilution of ownership.

A recent IEEE Spectrum article stated that world demand for electricity increases approximately 500 megawatts every day. To put this in perspective, the equivalent of another Hoover Dam would have to be built every four days to keep up with world electricity increase demands. Or, a dynamo manufacturing company would have to build another 500-megawatt dynamo every single day of the year to keep up with world electricity increase demand in addition to replacing all existing generators fueled by hydro, nuclear, and fossil fuels.

The following is a highly condensed summary of the "Description" of the dynamo's Russian patent IPC H 02 K 44/00 "Method of deriving of electrical energy and organization of Gritskevich's MHD-generator for its realization":

The dynamo is a sealed toroid filled with distilled water with heavy water (deuterium oxide) added. Movement of water inside the closed loop and use of unique properties of water as a polar liquid cause a release of electrical energy as an outcome of a rupture of hydrogen connections. Additional electrical energy is drawn from nuclear reactions and micro-cavitational processes. The liquid gets ionized and moving around the toroid at start-up time by a running magnetic field with the help of stimulating electromagnetic windings.

A layer of segnetoelectrical material covers the internal surfaces of the toroid. 32 electrodes made from a hard-alloy material are inserted into the toroid at equal distances apart. These 32 electrodes are connected to a power supply. Additional stimulation windings are also connected to the power supply.

The partially pre-ionized (on the part of the heavy water) water gets ionized further by the high-voltage discharges by the 32 electrodes. With the help of the stimulation windings, a running magnetic field is created which moves the water in one direction inside the toroid. An electromotive force gets created by the electromagnetic induction in a separate set of windings. During the movement of the water stream free electrons get created, and an additional energy gets emitted because of the water's friction (viscosity) against the layer coated on the inside surface of the toroid, because of electrostatic breakdowns of cavitational-vacuum structures, and because of the ongoing nuclear reaction. 100 times as much electrical energy is generated as required for electrical energy input.

Note that the hydro-magnetic dynamo is always producing electricity once it is manufactured and jump-started at the factory. Whenever a locomotive is parked in sub-freezing weather, its hydro-magnetic dynamo's electricity output would be used to heat the dynamo's containment to prevent its water-filled toroid from freezing.

Whenever a locomotive is parked, its hydro-magnetic dynamo's excess electrical output could be sold to the local power grid.

IPMS Energy Storage/Battery Device

During the summer of 1984, airborne intelligence surveillance teams of the United States Air Force, operating out of specially configured and equipped Boeing 707 airframes (called AWAC's) electronically detected (and then shortly thereafter photographed) bursts of coherent light of

enormous power originating in the vicinity of Dushambe, Turkministan. The bursts of light, a brilliant blue-green color, lasted just a few seconds and were shifted almost to the ultraviolet end of the light spectrum. The “laser” beams were directed upwards out of the atmosphere towards American military communications satellites.

At precisely the same time the AWAC’s detected and photographed the laser bursts (they were referred to in that jargon by American military analysts but later proved to be something almost entirely different), several of the satellites essential to America’s global military command and control communications systems became inexplicably inoperable.

The Defense Intelligence Agency, under the direction of the National Security Council and assisted by the National Security Agency, escalated its surveillance of the remote site in the Ural Mountains from which the bursts first originated. For several months, during a concerted campaign of uninterrupted observation by AWAC’s and American spy satellites, no additional bursts were observed or reported. Then, without warning, in the middle of the night nearly seven months later, AWAC’s crews operating just outside the territorial airspace of Afghanistan detected similar laser bursts of lower intensity during a period of intensive localized ground warfare.

The Afghanistan bursts were apparently aimed at targets under attack by Soviet infantry units. The laser bursts continued in a sustained, localized but obviously mobile attack pattern, as frequently as four or five times per hour, until nearly sunset of the next day. Photographic evidence gathered at the time by the AWAC’s crew, and later corroborated by photographs taken at the actual site of the fire fight and forwarded to the U.S. for analysis, showed that the targets of the laser bursts were ammunition and fuel supply depots located in the remote desert. Several of the ammunition and fuel caches had apparently been destroyed during the attack, as demonstrated by the evidence of explosions, fire, smoke and residual infra-red heat patterns detected, photographed and electronically recorded on-board the AWAC’s.

All this information was transmitted (via encrypted communications bursts, routed through the military Global Command Control satellite system) to the National Security Agency (NSA), located at Fort Meade, Maryland. Analysts there recognized that they were looking at evidence of a weapons system which had never been observed before. They did not know what had produced the laser bursts. But they did know that the technology which made such a thing possible was not available to the countries participating in the NATO Convention. They were terrified at the implications of such a development.

Within hours, the information was packaged into classified documents and conveyed to the Joint Chiefs of Staff. The Joint Chiefs examined the information while they were being briefed by the AWAC’s crews which had witnessed and recorded the events. After the briefing, the crews were dismantled, and their various members stationed far away from one another, with orders never to discuss the events they had witnessed. Officially, the laser bursts never had occurred.

Secretary of Defense Frank Carlucci took delivery of the packet at his residence in Falls Church, Virginia, three days later, at a private, secret meeting held in the middle of the night. No one has yet adequately explained why the Joint Chiefs waited three full days to brief the Secretary. Early the next morning, he was driven in a specially prepared bulletproof limousine to the White House. He personally delivered the information to the new President of the United States, Ronald Reagan. The content of the Secretary’s report had an immediate, measurable impact.

It was this series of events which principally precipitated the Strategic Defense Initiative, a program of military defense and reprisal based on America's state-of-the-art satellite-borne laser-optical and particle accelerator technologies. The S.D.I. system was intended to provide the U.S. with a meaningful deterrent to further aggressive use of the technology developed by the Soviet Military.

There was only one problem with this system, aside from the fact that its astronomical costs almost bankrupted the American economy: it did not work. S.D.I. was designed to respond to a kind of technology which was not achievable in the West, and which could not be explained by any of the models, materials, technologies or sciences known in the West.

In 1985, the top-secret military version of the space shuttle, code named Atlantis, embarked on a special orbital mission. One of its mission assignments was to retrieve, examine or photograph the military spy satellites which had been disabled by the laser bursts recorded in 1979-84. The results of this investigation have not been declassified or released in any but the most censored version to the public. What we do know for certain, as a matter of publicly available non-classified information, however, is that each of the disabled satellites appeared to have had at least one, and in some cases as many as four or five precisely measured holes, approximately the size of an American silver dollar, melted completely through them from the outside.

The photographs taken of the satellites show evidence of intense heat, charring and carbonized residue evenly distributed around the perimeter of each hole. The evidence is clear and unmistakable – the satellites were disabled by a coherent beam of some sort, characterized by such intense energy that it was possible to melt consistently measured holes through the exterior and interior components of American military satellites, after having passed through the atmosphere of the planet and into space for as many as 325 miles. Such a thing has scarcely been dreamed of by the American military, much less put into any but the most nominally effective operational form.

After more than ten years of political, economic and technological wrangling, and after the expenditure of more than one hundred twenty billion dollars in largely ineffectual research and development efforts, it is inescapably clear that no amount of money or political pressure, no amount of geo-political posturing or economic sanctions was going to compel the disclosure or replication of the technologies which produced the results photographed over the Carpathian Mountains and the Afghanistan deserts. The Soviets had developed a weapons system which was so revolutionary that it could not be explained, replicated or defended against.

The Reagan Administration's lack of specificity about the nature of the implied threat to which S.D.I. was supposed to respond subjected the Administration, the Defense Department and the R&D proponents of the most prominent American aerospace corporations to an endless barrage of charges by the Press and the Congress. They were characterized as being disingenuous and accused of being unreasonably secretive during successive appropriations battles in the Congress.

The truth of matter is that the Administration and the Pentagon were not being disingenuous at all. They simply could not admit to the American public that they were attempting to develop an effective response to a weapons system which they did not understand and could not replicate.

There are a number of issues intrinsic to this set of circumstances, along with several dozen others which, though less well known or economically dramatic, are no less important from a technological standpoint. It is certain that the implication of these technologies has not been lost on those multi-national corporations whose entire capital structure may be threatened by the new

sciences, technologies and materials which have been developed in secret laboratories, hidden in caverns excavated beneath the Carpathian Mountains, in the former Soviet Union.

Over the past decade the West has enjoyed occasional gratuitous glimpses into the heart of Soviet science. Attempts to disclose or discuss these developments in the press have been ruthlessly suppressed by powerful special interests vested in both the public and private sectors.

The science which underlies the series of events recounted here remains at the outer limits of the most advanced technology of which the West is capable. The questions posed by the military and corporate analysts about this laser beam weapons system are far-reaching in their scope and implications. Some of them are illustrative:

1) New Model of Quantum Mechanics: The sciences and models of quantum mechanics which produced such stunning recent developments in the West as the laser and maser make quite clear how much energy is required to create a beam of coherent light powerful enough to penetrate the atmosphere, retain its coherence in spite of atmospheric diffraction (and other effects described in quantum mechanics as “thermal blooming”), and melt a two-inch hole clear through a satellite made of the most sophisticated alloys ever produced in the West. Except for limited short-distance demonstrations conducted with industrial grade lasers used in cutting operations, there is no known combination of materials or technologies extant in the West to make such a thing possible.

2) New Materials: The materials necessary to create an electrical charge large enough to power a device capable of producing such a beam certainly do exist. In quantum mechanics the term large enough does not make sense, but we can agree for the purposes of this discussion on the effect of it as represented by such commonly accepted constructs as frequency, voltage, current and ionic flow rates [as distinguished by the phenomenon of resistance].

Hydroelectric plants and large, fixed-base nuclear power plants are capable of producing enough energy to theoretically power such a device. But the energy bursts in both the Carpathians and the Afghan desert were generated by sources which moved from one location to another. In order to do that, several additional considerations must be addressed:

a. Portability: The power source would have to be transportable or be capable of storing sufficient energy to repeatedly power such a device. Western technology cannot produce either a portable power production unit or energy storage system capable of the performance requirements everyone agrees must be met to make the weapons system work, either in the laboratory or in the field. System portability was the most puzzling feature of the NSA/DIA report.

When carefully analyzed, the computer-enhanced enlargements of the photographs taken by the spy satellites and AWAC’s crews failed to provide evidence of any tracks which could be attributed to wheeled or tracked vehicles operating in the precise locations and at the same time as the laser bursts which were observed. The implications of this set of circumstances was almost too much to believe – the devices were apparently either hand held or transportable and rechargeable in such a way as to allow them to be transported by one or more foot soldiers, without vehicular support.

b. Enormous Power Requirement: The materials and technologies used to construct a device capable of generating a beam of such enormous power and magnitude would have to be sufficiently advanced to enable the components to be transported without damage over significant distances in unpaved areas of very rough terrain. Such strategies, engineering techniques, construction technologies or materials do not exist in the Western inventory.

c. The continuous repetition of the laser bursts suggests that the devices can be operated repeatedly at short intervals of 12-15 minutes. This means they can be triggered with significantly higher frequency and intensity than anything which can be produced in the West, even for laboratory use. Industrial strength lasers used to cut metals require careful setup, accommodate only limited use in short bursts, require extensive cooling and must be continually recalibrated. These limitations obviously did not apply to the devices being operated in the Afghan desert. Analysts at AMTL agreed that the units would either have to be recharged via an external, independent device or somehow be capable of self-recharging in the field.

Such a thing is almost unthinkable by current Western military standards. Not only can we still not replicate the technology in any meaningful form, but the Soviets had refined the technology to a point which allowed it to be carried on the shoulders of ordinary foot soldiers and recharged in the field without motorized support.

Unbelievable! How was such a thing possible? According to some of the highly qualified scientists who scrutinized the photographs, it is not possible. The “Not Invented Here” syndrome is alive and well in the American engineering community. Some of them still insist that the pictures were either fabricated or demonstrate something completely different than this narrative suggests.

3) Energy Recharge-Batteries: How did such high-intensity laser beam generators get recharged in the middle of the Afghan desert, in the absence of powered support vehicles or fixed-based power plants? There are a number of possible alternatives. They could have been powered by some sort of advanced battery technology. It’s possible, but if the battery technology used in the West is used as a model to support such a thesis, it would take a bank of the most sophisticated batteries ever designed by NASA, arrayed in series and parallel configurations larger than five full-sized Soviet T-60 tiger tanks to power such a device.

This theoretical battery bank, operating at 100% efficiency (which is not practically or theoretically possible; the best batteries manufactured in the West operate at less than 60% discharge efficiency), could conceivably produce enough direct current voltage (in a zero resistance super conductive circuit, which is not possible, either) to perhaps produce one burst of light equal in intensity to 20% of the power required to burn a 2-inch hole through a satellite moving at 20,000 miles per hour at a distance of 325 miles.

Soviet ground forces were generating bursts of this magnitude every 12-15 minutes for more than 10 hours with nothing but ground troops. During eight hours of this exchange, it was totally dark. Something pretty remarkable must have been going on to make such a thing possible.

4) Energy Recharge – Solar Cells: Another alternative would have been to have whatever energy storage devices were being used to power the “laser cannons” recharged by sunlight. The state-of-the-art in photo-voltaic cells produced in the West simply would not support such an undertaking. The very best solar cells ever produced in the West have been produced by the Japanese.

These cells operate at a maximum of 19% efficiency - that is, they convert as much as 19% of the ambient visible sunlight shining on a clear, cloudless day into ion flow, which then becomes low voltage direct electrical current flowing through a circuit. The Japanese panels require months per section to manufacture and literally cost more than their weight in gold to manufacture. They are very heavy and are so sensitive to vibration and calibration that once installed, they cannot be moved at all.

Photo-voltaic cells capable of providing enough electricity to recharge a theoretically infinite energy well would have to operate at efficiencies of 50-80% to recharge batteries of infinite electrical capacity with enough power to trigger such a device. Such cells would have to be very light weight and able to withstand extremes of heat, cold, vibration, dust, wind and other conditions encountered in a hostile battlefield environment. Nothing like that exists in the Western technological arsenal.

5) Dielectric Materials – Transformers and Capacitors: Another consideration must be reconciled before this issue can be theoretically put to rest. In order to produce a burst of coherent light of sufficient intensity to have the effect which was observed and recorded by the surveillance teams, the voltage and amperage required to support such a device would have to be staggeringly high. In order to operate at all, the voltage supplied to the system must be released all at once, not in a continuous stream but in a single coherent burst so intense that any materials known in the West would either evaporate or melt. Not only would the best dielectric materials known to Western Science melt because of the heat produced by such enormous energy bursts, but before a bolt of energy of this magnitude could even be released to such a device, it would have to be accumulated and stored somehow.

A similar set of requirements of a less dramatic type is present in all the electronic devices manufactured and marketed in the West. This includes the entire range of electronic devices such as VCR's, computers, televisions and sound components, telecommunications, information storage, transmission and retrieval systems of every kind. We could not live as we do without them. The components which convert, store and release ion flow into the circuitry of these devices are known as transistors, transformers and capacitors.

This discussion delves into a slightly technical area here, so non-scientific types will need to either become familiar with the fundamentals of electricity to understand what is meant or simply give it a possibility that what is developed in the next section is a true representation of the way such things actually operate. The discussion deals with such commonly used and seldom understood concepts as voltage, current, frequencies and resistance.

(a) Transformers convert voltage at one level of current (amperage) to either higher or lower voltage levels. When the voltage is increased, the amperage or current is proportionately decreased. A low voltage produced at a high current level can be transformed into a much higher voltage at a proportionately lower level of current or "power."

(b) Capacitors: The decrease in amperage which accompanies a transformation of low voltage to higher voltage is often compensated for by a device known as a capacitor. In the most simplistic terms, capacitors "store" electrical energy until the amount of voltage and current reach a certain minimal threshold. When that point is reached, the entire store of energy is released all at once in a single burst.

The tantalum materials used in the West to manufacture such devices conform to certain standard rules which are commonly accepted by electrical engineers. These rules have only recently been stretched by new technologies and materials developed in the West. For the purposes of this discussion, though, it is safe to say that electrical engineers have long relied on these rules because they have always produced the same results when applied in the same way. Here's an example.

It is standard engineering fare which dictates that a transformer capable of accommodating one volt at one ampere of current across a grid of one ohm of resistance will be one cubic meter in

dimension. If followed to its logical conclusion, this standard rule of electrical engineering would require that a transformer capable of supporting a laser burst device of the kind operated by the Soviet ground forces in the Afghan desert would have to be approximately the size of a building built on a base 100 feet to a side, nearly 150 feet high.

Surely such a device could not have been hidden from the AWAC's eye in the sky which can clearly photograph the letters on a license plate from 60,000 feet altitude, nor could it have been moved on the shoulders of ground troops without wheeled vehicular support. The fact that there was absolutely no trace of such a huge, massive transformer device (or any other kind of structure or vehicle which could be construed to serve that purpose) means that something else must have been used instead. Military analysts had absolutely no idea what it could have been.

Such a burst system cannot operate without a capacitor of some sort. A capacitive device capable of storing the amount of energy required to power a single burst from a laser cannon, made of the most advanced dielectric material known in the West, would have to have been equally massive and, further, would have to have been cooled by some sort of strategy which would have been instantly and unmistakably detected by the infrared cameras and spectroscopic scanners used aboard the AWAC's and the spy satellites which investigated the scene.

The practical requirements of such a system are best demonstrated by the massive equipment required to operate and cool the Super Conductor Super Collider linear particle accelerators recently designed by the United States and Japan. No evidence of any such capacitive device was recorded in either the Carpathian Mountains or the Afghanistan desert. How can we explain it?

Without going into any detail about how the technologies were developed, suffice it for now to say that the Soviet ground forces in Afghanistan were equipped with a prototype of a hand-held plasma beam accelerator, the likes of which had only been roughly imagined by American military analysts. The device relied on some innovative strategies. Among these were:

Energy Storage Devices: The power source for the Soviet light cannons was comprised of a back-pack array of specially designed energy storage devices. The closest thing we have in our vocabulary to compare to them is described by the term "battery." In the limited sense that these devices store electrical energy, they are batteries. Any other similarity to the batteries we are accustomed to in the West ends there. The literal translation of the Russian name for them is energy accumulators.

The batteries relied on in the West are based on the chemical properties of components which, when combined in certain configurations and proportions, interact chemically with one another. The result of this chemical interaction is that it creates both heat and a stream of liberated ions – electricity. In dry cell batteries, the process of chemical interaction is one way – once they have been expended, they are simply disposed of. It is estimated that more than 12 billion expended dry cell and lead-acid batteries are dumped into America's landfills every year.

Other batteries are designed and constructed so that the chemical reactions which liberate electrical current are reversible in some degree. These rechargeable cells are characterized by the lead-acid batteries which are used in automobiles and in commercial and industrial applications. Various strategies have been developed to make batteries relying on chemical reactions maximally effective, but the theoretical limits of effectiveness of such devices have surely been reached.

A consortium of aerospace companies working with NASA recently announced the development of an advanced sodium-hydride-based rechargeable cell which is the most efficient battery yet invented in the West. Unfortunately, it operates at an ambient temperature of 2000 degrees centigrade and, if allowed to reach temperatures outside a very narrow safe operating zone, will explode with the force of a small thermo-nuclear device of approximately ten-kiloton yield. It is not safe, but it is the best Western science has come up with.

The energy storage device developed by the I.N. Frantsevich Institute for Problems of Materials Science (IPMS), Kiev, Ukraine, works on a completely different principle. Its construction is the result of a completely unique nonlinear quantum mechanical model which makes it possible to create crystalline lattices of absolutely pure carbon (and other materials) in sheets of infinitely variable dimension which are exactly one molecule thick. The crystal formation techniques and the whole body of new science which allows for their creation in the first place are completely unknown to Western science.

The mono-molecular sheets deposited by this technique are wrapped back and forth on top of each other, more than one million times per millimeter, and are separated from each other by a distance of less than one atomic diameter. At this level of construction, the material becomes subject to the rules of quantum mechanics which are almost entirely probabilistic. That means a whole atom of carbon (or almost anything else except an electron or photon) will not fit in the space which separates the lattice sheets.

When viewed under an electron microscope, the sheets produce a pattern which looks for all the world like an endless field of four-sided pyramids, connected base to base, on a single plane, with the tips of the pyramids protruding endlessly, uniformly upwards. When wrapped back and forth on top of each other, these sheets of pure carbon crystal, made of carbon molecules shaped like trillions of identical tiny pyramids, all arrayed endlessly in identical formation, are positioned so that the tips of the pyramids on the bottom sheet are matched with the tips of the pyramids on the top sheets. What remains between the pyramid tips are open “spaces” or energy wells.

The quantum physics which describes the characteristics of the energy wells created between the layers of crystalline lattice is largely unknown to Western physicists. The Soviet model predicts with a high degree of probability that the quanta of energy referred to in the West as electrons (and, in some cases, photons), the stuff of which electricity is made, will, when introduced to the lattice structure, search, find and fit into the energy wells with military precision.

During the recharging or loading phase, the energy storage devices made of the crystalline lattice material channel one electron at a time into each well created by four carbon pyramids on the bottom layer and four carbon pyramids on the top layer. Because the rules of quantum mechanics which operate in this tiny environment demand it, each electron or quanta of energy has a certain polarity, spin and “color” (and other mathematically defined characteristics) which must be accommodated if it is to find, fit and stay in an energy well. Interestingly enough, when a current is applied across the lattice-work structure, the electrons behave precisely as nonlinear quantum mechanics predicts they will. They flow much like a fluid into the lattice field, then separate into individual energy quanta and spin into the last energy well in each layer, automatically adjusting their individual spin, polarity and color to match their characteristics to fit the requirements of each well, until the lattice is full.

Because no chemical reactions are involved in the process of marching electrons into or out of the energy well fields, there is no resistance in the circuit. In the absence of resistance, the electrons fill

the wells at light speed, never missing a space, automatically adjusting polarity, spin and other characteristics, and creating no heat. The amount of time required to “charge” such a cell is less than 5% of the time required to recharge a conventional chemical battery of similar voltage and current.

The validity of $E = MC^2$ is called into question by the way these devices function. When the battery is fully charged, it actually demonstrates more mass than when the energy storage device is empty or discharged. The laws of quantum mechanics relied on in the West state categorically that this is not possible. It is the answer to the question, “How much does a beam of light weigh?”

According to the Soviet model, this is precisely as it should be. When this phenomenon was first demonstrated to scientists in the West who were testing the energy storage devices at INEEL in Idaho, they were thunderstruck. The quanta of energy, or electrons as we refer to them, which are poured into the crystalline lattice demonstrate characteristics of mass even though they are bundles of pure energy sitting in stasis, literally at rest. The characteristic of mass is verifiable – you can measure it by weighing the energy storage devices before and after they are charged. When they are charged, they demonstrate appreciably more mass than when they are fully discharged.

If this is confusing to you, to suggest that pure energy can be shown to demonstrate verifiable mass while at rest (in stasis), perhaps you can begin to appreciate how fundamentally different the physics of all this is when viewed in the terms of Einstein’s classic equation $E = MC^2$.

The existence of this technology clearly is proof positive that not only does energy demonstrate the characteristics of mass, but it does so in a state of non-motion or stasis, sitting idly in an energy well. A state of stasis is a very far cry from the terminal theoretical velocity required by the constant in Einstein’s equation, equivalent to the square of the speed of light.

The scientific implications of this phenomenon are truly staggering. At very least, the verification of mass as a property of energy quanta at rest suggests that Einstein’s theory of relativity may be altogether incorrect as a means of describing the dynamics underlying the real nature of the material world and its relationship to energy.

The existence of this technology suggests at very least, that energy and mass are equivalent characteristics of all things which are manifest in the material world. It is this fundamental contextual difference which distinguishes the Soviet model of quantum mechanics from the Western model. “The proof of the pudding,” they say, “is in the eating.”

Theoretical physicists may argue endlessly about the validity of the assumptions relied on by the IPMS scientists to develop their unique sciences, technologies and materials. But they cannot argue about the existence of the materials which have arisen from that context. They are as real as they can be. And they are unlike anything ever seen or contemplated in the West.

In the same way energy quanta stored in the energy wells of crystalline lattice materials demonstrate complete mathematical satisfaction with staying there indefinitely, when allowed to flow out in the form of an outgoing wave of electrical discharge, these quanta (electrons or photons, as you prefer) march right back out without resistance at light speed through a closed circuit to another use.

When these energy storage devices are discharged, they demonstrate other attributes which are not known in Western science, and which, because of the very nature of the chemical reactions we are accustomed to, are not theoretically possible according to conventional wisdom. Conventional

chemical batteries, when fully charged, produce electric current at a useable voltage for perhaps 30-40% of the total discharge cycle. After that, either the voltage or amperage (or both) drop to low enough levels that the devices being powered by them cannot recognize or use the electrical current which remains available. At that point, the batteries either have to be recharged or replaced.

The crystal lattice batteries have been demonstrated to produce precisely the same current and voltage levels throughout 98% of their discharge cycle. They produce no heat during discharge, regardless of the rate at which they are discharged. This is absolutely contrary to our experience with batteries, transformers or capacitors. Until the crystalline lattice materials were specifically engineered to register an electronically detectable blip at 95-96% discharge, it was impossible even for the scientists who developed them to distinguish a partially discharged battery from a fully charged one.

There is another characteristic which is intrinsic to energy storage devices which comes into play here. It is a characteristic of materials which is described as energy density. For non-scientific readers, this concept can simply be construed to mean the amount of measurable electrical current which can be produced by any device or material when its mass is converted into electrical energy. The concept is expressed in mathematical formulas as the number of watts and hours of consumable energy which can be converted from each kilogram of material. It is expressed as watt-hours per kilogram.

Here is an example we can all understand. Consider gasoline. When converted into electrical power at 100% efficiency, gasoline has been theoretically shown to have an energy density of between 550 and 600 watt-hours per kilogram of mass. In easy terms, that means that if one kilogram of gasoline were converted into pure electricity at 100% efficiency (with no loss due to heat, resistance, waste, etc.), the reservoir of energy would power a 100-watt light bulb for 5.5 to 6 hours.

Most of the high-end conventional automobile batteries of the lead-acid variety operate at an energy density rate of between 20-25 watt-hours per kilogram. The best NASA sodium-hydride batteries operate at 48-50 watt hours per kilogram. The energy accumulator devices which have been tested at the Idaho National Electronic Laboratories have demonstrated energy densities of between 850 and 1050 watt-hours per kilogram.

What does this mean in practical terms? It means, for one thing, that for the first time in the history of science an energy storage device has been created with an energy density which is greater than gasoline or any other refined fossil fuel. It means that devices which rely on these energy storage technologies can theoretically be designed to store and deliver clean electrical power at higher rates of efficiency than any fossil fuel ever discovered.

The global implications of this technology are irresistible. It means, among other things, that the technology exists, right now, to eliminate the need to build another nuclear power plant or dam another river to produce hydroelectric power. It means we can no longer justify burning another ounce of petroleum, another piece of coal, another cubic centimeter of natural (or unnatural gas) or another tree to produce heat, electricity or power for any purpose, including transportation.

When coupled with the plasma beam devices being tested by the Soviet infantry units in Afghanistan, these energy storage devices operated at such unbelievably high rates of discharge efficiency that they made it possible to repeatedly induce huge electrical discharges in a highly mobile configuration.

The same technologies which were used to produce the energy storage devices have been adapted to create transformers and capacitors with previously unimaginable performance characteristics. Instead of adhering to the conventional western model of “One Volt at One Amp across a resistance of One Ohm equals One Cubic Meter,” the Soviets have produced a capacitor which measures more than 1200 farads at 10,000 amperes in a package the size of a tuna sandwich.

When tested by the Technology Materials Testing Laboratory of the Defense Department at the Pentagon and at the I.N.E.E.L. in Idaho, totally new testing equipment had to be designed, engineered and constructed just to test the devices. The scientists at those laboratories had never tested anything like these materials before.

Instead of having to house transformer and capacitor devices in a series of trailers towed by diesel tractors or huge fixed-base facilities, the operating apparatus which supplied transformed power and high intensity capacitive bursts to the light cannons weighed less than ten pounds and could easily be transported in a backpack by a foot soldier.

One final question remains unanswered. “How did the energy storage devices, once dissipated or discharged, become recharged in the field, especially in the dark of night?”

The back-pack plasma beam device detected by the AWAC’s during limited combat use in the Afghanistan desert was powered by energy storage devices constructed of crystalline lattice materials. After each laser burst, the energy storage devices were recharged every 12-15 minutes (nearly 45 minutes in the dark of night – the residual ambient heat of the desert is a very efficient source of infrared energy) by sunlight, collected and converted to electricity by four-foot square panels of “solar cell” material arrayed on a pole like a flag, each weighing less than ten ounces.

The electrical energy stored in the back-pack energy accumulators was transformed into enormously high voltages and released at almost unbelievably high current levels when the super-capacitors were sufficiently charged. The beam of “light” detected by the AWAC’s crews was a field of plasma, flowing at the speed of light and demonstrating characteristics of mass (and, therefore, kinetic energy). The phenomenon represented by these bolts of lightning are not comprehensible according to the model of quantum mechanics and plasma physics currently being used in the West.

Battery packs utilizing these energy accumulator materials have been designed, produced and tested which provide more than 14 hours of continuously transmitted power on a single charge to conventional hand-held cellular telephone devices. Similar improvements in conventional battery/energy storage capacity have been developed and are being tested for such devices as video camcorders, laptop and portable computers and other similar consumer, commercial, industrial and military applications.

IPMS research in the field of layered crystals has thus led to the creation of capacitors with a very high level of capacitance (measured in farads). This technology is based on a revolutionary production technique which forms polarized surfaces of one molecule thickness, separated by less than one atomic diameter of space, held together by weak Van der Waals energy forces. The special properties created by these layered crystalline structures provide previously unimaginable internal surface areas. Super capacitors are constructed of layered materials numbering more than one million dipole sheets for each millimeter of crystal thickness.

These devices provide a virtually limitless number of charge-discharge cycles at astonishingly rapid charge and discharge rates. The potential impact of such devices on all electronic equipment currently being produced is incalculable, since virtually all electronic devices rely extensively on the West's state-of-the-art tantalum capacitance technologies.

At present, IPMS has on hand (among others) a super-capacitor roughly the size and dimension of a sandwich which develops more than 1,200 farads at 10,000 amperes. It also boasts production of a battery whose active mass energy density exceeds 850 watt-hours per kilogram. For the non-scientist (and all the rest of us as well) this means that a "battery" has been produced which, for the first time in history, produces more power per unit of mass than any fossil fuel ever devised.

Prototype testing of larger-scaled devices designed specifically for providing power to electric vehicles is currently underway. Prototypes are expected to be capable of sustained highway speeds of up to 70 miles per hour with a range of 525 miles on a single charge. The power plant for this application has been recently improved by the inclusion of a proprietary solid-state ceramic electric motor which weighs 7.2 kilograms and produces 100 horsepower on 12-volt direct current. For comparison, an electric vehicle employing a 100-horsepower electric motor performs the same as with a 500-horsepower gasoline engine.

If these performance attainments can be sustained in broad-based applications, electrically powered vehicles could be produced which would meet or exceed virtually all performance characteristics currently available in equipment relying on internal combustion, petroleum-based engines. Gasoline/diesel-powered transportation devices can be replaced by cleaner, more efficient and significantly less expensive alternatives.

The world market for current energy storage applications which will be superseded by these energy storage technologies is estimated to be in excess of \$24 billion per year (1991), exclusive of electric vehicle considerations.

Metamatter

9/25/1997 11:16 AM

From: Robert Bass

To: James Bowery<jabowery@netcom.com>;

CC: Robert W. Bass<rbrtbass@pahrump.com>; Gary Vesperman<vman@skylink.net>;

Subject: for the postulated "Bass page"?

Jim,

I just went to <http://www.generalstore.com/> and see nothing but "under construction, etc." Is this you, or someone else in another state? Do you know how to (reasonably economically) do Mass-eMailings? Say either from a rented Data Base of known Investors, or just blindly to "millions"?

How about posting the following

Potentially Awesome Speculative Investment Opportunity?

=====

Venture SEED Capital? Low Risk, AWESOME Payback!!!

I seek one or more High-Technology-Oriented "High-Roller" Nerves Investor(s) who would be intrigued by the following proposition (if demonstrably sound and absolutely genuine): Suppose you go to "Super Monte-Carlo" in the sovereign nation of Erewhon, and you come to a table with a Croupier who says:

"I have here a coin the size of a U.S. silver dollar, which is perfectly evenly balanced between Heads and Tails to 10 decimal places [with the edge for Heads in the 11th decimal place]; and a certificate from the US Bureau of Standards certifying it is not "loaded" to favor either Heads or Tails to the best measurements they can make.

"You can flip the coin yourself.

"I have here Certificates of Deposit for \$30 Billion in a centuries-old Swiss Bank of spotless reputation.

"My croupier's fee for allowing you to play is ridiculously modest.

"How much are you willing to wager on the honest flip?

"Now suppose the preceding scenario is repeated, except that several of the most reputable scientists in the world assure you that the coin is 'loaded' so that the chances of Heads are between 95% and 99%. Your own experts assure you that you have at worst One Chance in 20 of losing.

"Finally, the croupier says, you may play for \$150,000."

To recapitulate, the odds are 20-to-1 that you will win \$30 Billion, versus one chance in 20 that your entire \$150,000 wager will be lost.

Would you play?

=====

-----PRIVATE Communication-----

----- (NOT a Publication) -----

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I need Seed Capital of \$150,000 under circumstances exactly analagous to those outlined in the Risk/Reward scenario above. If "Heads" comes up, then my patented [Plasmasphere](#) technology can be escalated to a Metamatter technology, where by METAMATTER I mean a solid, *crystallized* fully-ionized plasma.

An ordinary crystal has nuclei spaced apart distances of about 10^{-8} cm, the [Bohr radius](#), because the [electron cloud](#) makes the atoms behave like little billiard balls of the size indicated.

However, in a plasma, the positively-charge nuclei and the electrons are equal in number, but the electrons are not in orbit around individual nuclei; they are "mixed up" as in a plum-pudding. Most plasma physicists will tell you that in order for hydrogen gas to be fully ionized (i.e., all electrons stripped from all nuclei) the temperature of the gas would have to be above 150,000 degrees Kelvin (i.e., 15 times hotter than the surface of the Sun). But this is demonstrably FALSE (both theoretically and experimentally).

If the gas is dense enough, it can be fully ionized at "low" temperatures, e.g. 5000 Kelvins [so-called "pressure ionization"].

Now suppose that the fully ionized low-temperature gas is condensed into the physical state of a liquid metal. I call this a Liquid Metallic Plasmoid (LMP). The characteristic of an LMP is that, like mercury, it keeps a constant volume; unlike a gas, it does not expand to fill all available space (if in a vacuum). The positive nuclei remain on average equidistant, and the electrons circulate around the dynamic lattice as in a giant crystalline molecule. Cook called it a "Cryscapade"; whereas others might call it a Liquid Crystal.

Fewer than a score people in the world understand that LMPs can exist. One LMP was photographed in half a dozen or so photos on the cover of the [Journal of Applied Physics](#) in 1957 by [later] Nitro-Nobel Medalist, physical chemist, Dr. Melvin Cook. The theory by which Cook explained his accidental discovery has been *independently* rediscovered (in 3 separate countries, USA, UK & France) by researchers seeking to explain the illusive natural phenomenon of Ball Lighting.

The late expert on High-Energy Lasers and Shock Tubes, Dr. Jay Blauer of Rockwell Rocketdyne, who died early of [leukemia](#), helped me to design an experiment that would prove beyond shadow of a doubt that LMPs can be created at will. The basic idea is to use a combination of Shock Tube technology and High-Energy Laser technology, with my patented Plasmasphere technology, in order to achieve in a non-self-destructive, reusable device, what Cook discovered accidentally with high-explosives in a self-destructive experiment.

Once the mere EXISTENCE of producible-at-will LMPs is achieved (for the Risk Capital of \$150K), it will be trivially easy to raise several million more for refinement of the device to move the LMP into a cryogenic [vacuum chamber](#) where (since it is electrically conductive) it can be magnetically levitated and allowed to cool by radiation.

Use of the Brush-Sahlin-Teller [Equation of State](#) (used to design the H-bomb) shows that as the LMP cools, its volume contracts, and it becomes more and more dense. There can be shown to scientists sufficiently expert to understand the evidence, a mass of recent experimental evidence (as well as expert theoretical evidence) that before the LMP gets down to room temperature it will crystallize into a Metastable Solid Crystal, namely a *new form of matter* never seen before on Earth!!!

The density will be intermediate between that of ordinary condensed matter and that of [neutron stars](#), wherein a teaspoonful weighs tons.

I propose to manufacture 3 kinds of Micro-Crystals of Metamatter: MSP, MSD, and MSD. Each addresses in a truly *revolutionary* way a trillion-dollar market, with a multi-billion dollar profit potential. In many ways, Metamatter will have a bigger impact on human civilization than any prior discovery, including both computers and atomic energy! In fact, consider the following:

MSP (Meta-Stable Protium [hydrogen]) will be the IDEAL room-temperature [Superconductor](#), which will revolutionized both the Computer/Electronics industry and the Electric Power industry.

MSD (Meta-Stable [Deuterium](#) [heavy-hydrogen]) will be the ideal 5th [Generation Cold Fusion fuel](#); when triggered by an infra-red photon of 17.7 eV, a micro-pellet will undergo a phonon-mediated and Lattice-Catalyzed ANEUTRONIC chain-fusion reaction to cleanly release the energy of 10

sticks of dynamite, to make steam for mechanical heat and conversion at 67% efficiency into electrical energy. This can make both homes and automobiles independent of the present electrical utility companies, though they will still need to buy the almost dirt-cheap MSD fuel micro-pellets from Metamatter Industries.

MSH (Meta-Stable Helium) will be the IDEAL [rocket propellant](#) for expanding human civilization into the [Solar System](#) (e.g. to colonize Mars); when a micro-crystal of MSH is triggered by the right frequency of laser-light, it will return to the form of gas as if it had been compressed by tens of millions of atmospheres of pressure; it will release 43 times more energy per unit weight than any conceivable chemical combination!

During the mid 1980s, the [Air Force Systems Command](#) sent a group of 7 or 8 Colonels who held Doctorates in the physical or engineering sciences to scour the USA for 9 months, in groups of 2 or 3, and to report back on what futuristic technology would have the greatest potential impact on the [USAF](#) and USA economy by the year 2000 if reduced to actual practice. They listened to 600 industrial and academic presentations and selected MSH as the greatest payoff (for least risk) choice! The USAF Rocket Propulsion Lab was supposed to issue 8 parallel contracts for 8 "crash" projects to see if bulk MSH could be manufactured. I was slated to get one of the 8 contracts, but my approach (through solidifying a helium LMP) was radically different from that of the other 7 selected proposers.

With MSH as fuel, one could take a 50 percent payload to Mars and back in two weeks! (Accelerate there and return at one gee.)

But a Princeton professor of Physics, Will Happer, then Secretary of the JASONS [advisers to DOD/DOE], advanced theoretical arguments which appeared to shoot down the practicality of the other 7 approaches, and the whole project was canceled. But Happer's arguments are totally irrelevant to my approach. Moreover, Happer was later Chief Scientific Advisor to [Admiral Watkins](#) (Secretary of DOE) when the ERAB Report was produced.

Those who understand the recent work of Arata and Zhang in which the aneutronic conversion of deuterium nuclei to helium nuclei inside of a palladium lattice is recorded in Real Time (inside of a sealed apparatus which contains a Mass-Spectrometer and which give ZERO helium when the heavy-water deuterium is replaced by ordinary-water hydrogen) know that Aneutronic [Cold Fusion](#) (CF) is a demonstrable FACT and that Happer and the ERAB Report were WRONG. Therefore it is logical to consider the possibility that Happer was also wrong when, before he shot down CF, he also shot down MSH.

There is ZERO risk in producing an LMP; it is just that 99.999% of all scientists are ignorant of Cook's work.

There is a slight technical risk in crystallizing an LMP at room-temperature; conceivably, it will remain liquid until below the temperature of [liquid nitrogen](#), in which case my proposal will have been a failure. But the payoff is so AWESOME, and the chances of failure so tiny, that the risk seems worth taking.

I can supply drawings of the Proof-of-Principle Process Prototype Plasmasphere demonstration designed by Dr. Blauer and myself. Jay Blauer told me that he could do the experiment in his spare time evenings and weekends "in two weeks" using shock-tube and laser equipment already in his lab at [Rocketdyne](#), provided he had \$10,000 cash for items and materials not on hand.

Several "reputable" labs have explained to me that they would not even consider bidding on doing the Bass-Blauer experiment for less than \$100,000. I have personal contacts at 22 government and private labs (such as JPL, SRI, LANL, etc.) which I would like to visit with my former graduate student Dr. Lou Puls (who, unlike me, is an accomplished experimental plasma physicist) to make joint presentations on the theoretical and experimental aspects of creation of an LMP, preparatory to asking them to bid. After 22 weeks spent in such visits, (and paying Dr. Puls Consulting Fees) I expect to have \$50,000 left to offer the Highest Bidder. I also expect that no one will bid less than \$100,000. But I also expect that out of the 22 presentations, at least several will become so excited that they will offer to Cost Share. In several labs, the working-level scientists interested in LMPs have told me, "If you can get the Management to pay attention, we have in place already a mechanism and a precedent to Cost Share."

Remembering what happened to Fleischmann and Pons it will accomplish naught for me to take the \$150K, rent the equipment, and do it in my own garage. Nobody will believe it, and nobody will pay any attention. However, if we spend 6 months getting suitable technical personnel of nationally reputable laboratories excited about the subject of LMPs, and then some lab with the prestige of, say, JPL or LANL or SRI, announces the production of an LMP, many other labs will immediately undertake to "catch up" and to replicate the result at their own expense. Once 3 or 4 labs have announced successful replication, no one will doubt and then it will be trivially easy to raise the venture capital to go from LMPs to solid, crystallized Metamatter micro-crystals of MSP, MSD, and MSH.

I can supply a large amount of written technical material to anyone who is interested in raising the \$150,000 seed capital required to get Metamatter Industries off the ground (and for me to file the pioneering Patent Applications, and since I am now licensed to practice Intellectual Property Law before the PTO I can do it myself at no extra expense – as did the physicist/patent-attorney who invented the Xerox process).

This will be BETTER than getting in on the ground floor of Xerox or Polaroid or [Microsoft](#)!

Sincerely,

Robert W. Bass, M.A. Oxon, Ph.D.
Dr. Robert W. Bass, Registered Patent Agent 29,130 [ex-Prof Physics]
Inventor: Topolotron, Plasmasphere, issued; QRT Cold Fusion, pending
P.O.Box 1238, Pahrump, NV 89041-1238; phone/FAX (702) 751-0932/0739
Voice-Mail: (702) 387-7213 e-Mail: rbrtbass@pahrump.com

=====
XXX.YYY
XXX Venture Partners

Dear XXX,
Have you got your _____ Fund off the ground yet? Did you receive the Proposal I sent you last week?

Do you agree that the logic of the Analogy I used for the proposed Low-Risk, AWESOME Payoff, "Proof-of-Principle" (POP) [Experiment](#) is sound? If a rational Investor were convinced (e.g. by the photos published by Nitro-Nobel Medalist, Melvin Cook) that it is possible to put a plasma in the state of liquid metal (Liquid Metallic Plasmoids, or LMPs), and that the ONLY risk is that when cooled to room temperature they will not yet crystallize [but won't crystallize until down below, e.g.. the temperature of liquid nitrogen], which risk will be taken by OPM [[Other People's Money](#)] when the scientific community realizes that LMPs can be created at will, and that there is ZERO risk in performing the proof-of-principle demonstration experiment to convince them of this fact, and that this can be done for as little as \$150,000 (which will also permit Patent Applications ensuring the inside track when LMPs get crystallized), don't you agree that the Reward to Risk Ratio of $\$3 \times 10^{10} / \$1.5 \times 10^5 = 2 \times 10^5$ multiplied by the probability of crystallization at room temperature (which is supported by hundreds of theoretical papers on MSH and at least one recent paper in Physical Review Letters on MSP, as much, much better than 50%), namely an EXPECTED REWARD/RISK RATIO of more than 100,000-to-1 implies that this Proposal is "better" than any proposal made in this field yet, when you note that each of the 3 main products to be manufactured from crystallized LMPs, namely MSP, MSD, and MSH, EACH separately addresses a different Trillion-Dollar Market with a clear Profit Potential of more than \$10 Billion?

Moreover, this is a Proposal in which the Investor who RISKS \$150K will know within a mere 6 or 7 months WHETHER OR NOT Phase One of his speculation has paid off! (And it is highly likely that the Absolute Answer will be known within another 3 months, considering how fast the scientific community reacts to something, e.g. High-Temperature Superconductors, which is both surprising and EASY to replicate!)

Please tell me when a Speculative Investment Possibility better than this one has last crossed your desk? (I'll bet, NEVER!)

Regards,

Bob Bass

Dr. Robert W. Bass, Registered Patent Agent 29,130 [ex-Prof Physics]
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Electrino Fusion Power Reactor

Gordon L. Ziegler has discovered how to make a clean electrino fusion power reactor capable of generating up to a net of 1880 megawatts of DC electricity. The proposed energy source would produce no carbon emissions and no radioactive wastes. (By reversing the order-to-disorder arrow in the second law of thermodynamics, a \$50,000,000 electrino fusion power reactor could be built which would also reverse all aging, disease, and decay processes within a one-mile radius.)

Power output, however, cannot occur in this system without the simultaneous operation of two aspects of the invention. One is an accelerator-collider making a field reversing the order-to-disorder arrow in the second law of thermodynamics in a controlled area. Among other things, that field makes the other aspect of the system (the power source) efficient enough to be self-sustaining and prevents the formation of radioactive wastes.

Electrons are generally regarded to be structure-less spinning point charges. But that contradicts a reasonable postulate that occurred to Gordon L. Ziegler in 1967: "A spherically or cylindrically symmetric smooth charge distribution cannot have detectable spin." Electrons have detectable spins. Therefore they must not have smooth structure-less symmetric charge distributions. They must be lumpy and have internal structure. An application of the Parsimony Principle shows that they must be composed of two half-charges orbiting each other at the speed of light. The reason scientists concluded that the electron was structure-less was that it could not be blasted apart in collisions up to 700 MeV each particle.

But in Ziegler's model, electron sub-particles are bound together by confinement by a speed of light barrier (they are trapped going faster than the speed of light). They cannot be blasted apart, even though they are two particles.

The two sub-particles of electrons make a whole different structure for matter than quarks and leptons. The sub-particles can also fuse with each other – making new particles. Fusing sub-particles of positrons reverses the order-to-disorder arrow in the second law of thermodynamics – making the power source efficient enough to be self-sustaining and preventing the radioactive wastes from forming. Fusing the sub-particles of electrons comprise the power source.

Key components include a polarized positron source, injector accelerators, inflection magnets, end magnets, and the beam transport.

Governments and utilities would buy electrino fusion power reactors because the process is a clean, inexpensive way to produce electricity. It is 1000 times as efficient as nuclear reactors. It does not require uranium or plutonium for fuel. It can run on anything for fuel such as dirt, sand, sewage, ground garbage, toxic chemicals, radioactive wastes, sea water, etc. without carbon nor radioactive pollutants.

Assume that the collision energy were 940 MeV to avoid unwanted heat (operate at room temperature), and the current in each beam was 1.0 ampere of electrons. The energy investment into the electrino fusion would be 1880 megawatts. The energy released in annihilation photons would be 3760 megawatts. Recoverable net power would be 1880 megawatts or less.

The collision energy of the linear accelerator would be 940 MeV (each particle – 1880 MeV in the center of mass frame). The current in each beam would be 1.0 amperes of electrons. There would be two beams 180 degrees from each other.

The energy released in annihilation photons would be 3760 megawatts. "Annihilation photons" are the 940 MeV X-Rays produced when a negatron annihilates a proton. These X-rays are converted to electricity by order-to-disorder arrow reversed photo-voltaic cells with nearly 100% efficiency.

In summary the 3760 megawatts output of annihilation photons would be converted to electricity. However, in order to keep the electrino fusion reaction going, 1880 megawatts would be taken from the 3760 megawatts to power the linear accelerator. The net energy output would thus be 1880 megawatts-electric.

The size of an electrino fusion reactor would be about 80' x 10' x 10'. The fuel is whatever brass or copper James M. Potter uses in constructing the walls of his linear accelerators. James M. Potter, Ph.D., is President, JP Accelerator Works, Inc., 2245 47th Street, Los Alamos, NM 87544, 505-690-8701 or 888-301-2833 or 505-661-8155, jpotter@jpaw.com, <http://www.jpaw.com>. 155 lbs of

brass would be consumed over 100 years before shutdown for refueling. The linear accelerator would be a standard commercially available model. It would not need to be customized for an electrino fusion reactor.

The smallest electrino fusion reactor that would be possible to build is now about 80' x 10' x 10'. It may eventually be the size of a filing cabinet.

The projected cost of the first 1880-megawatt electrino fusion reactor is approximately \$100 million. This clean source of electricity could be built in two years, and the necessary Refresher built in one year. Electricity could be generated for only about 1.5 percent of current rates (a little over 0.1 cent per kwh). Subsequent clean energy sources can be built for \$37.5 million each.

The 1880 megawatts (net) of electricity generated by an electrino fusion power reactor would be Direct Current (DC). A utility would need thick wires and the biggest busbars and transformers on the planet. Conversion from DC to Alternating Current (AC) would require the world's largest inverters.

The electrino fusion reactor requires the Refresher to be self-sustaining. But the Refresher has several positive medical side effects due to reversing the order-to-disorder arrow that cannot be eliminated – in a controlled area reverse adult aging and wipe out diseases.

Refresher 1 Design Specifications

Size of accelerator	20 meters long by 3 meters wide
Diameter of channels	4 cm (maybe a little more to allow for water cooling channels)
Type of accelerator	Folded linear accelerator with pulsed klystron RF power supplies and S-band cavities (2856 MHz)
RF power supplies	Eight 35 to 50-megawatt pulsed klystrons
duty factor	0.1% (peak current 1000 times average current)
Average power	400 kW (20 kW per meter of accelerator)
klystron efficiency	~50%
total system power	800 kW
cooling water requirement for each 5 m section	5 to 10 gpm

cooling water required by each klystron	~ 5 gpm
cooling towers capacity	800 kW
Cost:	
Linear accelerator	\$12 million
Klystrons	\$ 8 million
Klystron power supplies and cooling towers	\$ 2 million
Magnets and their power supplies	\$ 2 million
System with controls	\$ 8 million
10% contingency	\$ 3.2 million
Builder's cost	\$35.2 million
Other budgeted items	\$14.8 million
Total budgeted	\$50 million
Creation time total	3 years
Design time (beam dynamics, rf power systems, cooling, and computer control)	1 year
Fabrication and subassembly testing	18 months
Installation and commissioning	6 months

(The following chapter is taken from *Formulating the Universe*, Volume II, by Gordon Ziegler, Chapter 7. Copyrighted by Benevolent Enterprises 2004. Used with permission.)

Chapter 7

SECOND LAW OF THERMODYNAMICS

A. Introduction

Everything goes from a state of order to more disorder. Brand new automobiles wear out and rust. Objects break or are damaged. A thermos bottle falls off the counter, and the inner glass bottle is shattered. We do not expect the shattered bottle to fall back up to the counter and become whole again. There is a one-way arrow for the events to transpire. That arrow is the Second Law of Thermodynamics.

Houses grow old and fall into decay. Barns fall down. Fruit spoils, people and animals grow old and die. Viruses mutate. People become ill and die. Crime and disorder in society increase. Homes break up. Aborted fetuses disintegrate. Dead people and things decompose. All of these negative occurrences are the outworking of the second law of thermodynamics – that part of which is an arrow making everything go from order to disorder.

Let us consider what other people have written about the second law of thermodynamics.

"Second law of thermodynamics

"An equilibrium macrostate of a system can be characterized by a quantity S (called entropy) which has the following properties:

"(i) In any infinitesimal quasi-static process in which the system absorbs heat dQ , its entropy changes by an amount

$$dS = \frac{dQ}{T} \quad (7-1)$$

where T is a parameter characteristic of the macrostate of the system and is called its *absolute temperature*.

"(ii) In any process in which a thermally isolated system changes from one macrostate to another, its entropy tends to increase, i.e.,

$$\Delta S \geq 0. \quad (7-2)$$

"The relation (7-1) is important because it allows one to determine entropy *differences* by measurements of absorbed heat and because it serves to characterize the absolute temperature T of a system. The relation (7-2) is significant because it specifies the direction in which nonequilibrium situations tend to proceed."¹

The above expression of the second law of thermodynamics is regarding entropy and heat. Other writers include the order-to-disorder arrow in the second law of thermodynamics.

"It is a matter of common experience that disorder will tend to increase if things are left to themselves. (One has only to stop making repairs around the house to see that!) One can create order out of disorder (for example, one can paint the house), but that requires expenditure of effort or energy and so decreases the amount of ordered energy available.

"A precise statement of this idea is known as the second law of thermodynamics. It states that the entropy of an isolated system always increases, and that when two systems are joined together, the entropy of the combined system is greater than the sum of the entropies of the individual systems. For example, consider a system of gas molecules in a box. The higher the temperature of the gas, the faster the molecules move, and so the more frequently and harder they collide with the walls of the box and the greater the outward pressure they exert on the walls. Suppose that initially the molecules are all confined to the left-hand side of the box by a partition. If the partition is then removed, the molecules will tend to spread out and occupy both halves of the box. At some later time they could, by chance, all be in the right half or back in the left half, but it is overwhelmingly more probable that there will be roughly equal numbers in the two halves. Such a state is less ordered, or more disordered, than the original state in which all the molecules were in one half. One therefore says that the entropy of the gas has gone up. Similarly, suppose one starts with two boxes, one containing oxygen molecules and the other containing nitrogen molecules. If one joins the boxes together and removes the intervening wall, the oxygen and nitrogen molecules will start to mix. At a later time the most probable state would be a fairly uniform mixture of oxygen and nitrogen molecules throughout the two boxes. This state would be less ordered, and hence have more entropy, than the initial state of two separate boxes."²

"The explanation that is usually given as to why we don't see broken cups gathering themselves together off the floor and jumping back onto the table is that it is forbidden by the second law of thermodynamics. This says that in any closed system disorder, or entropy, always increases with

time. In other words, it is a form of Murphy's law: Things always tend to go wrong! An intact cup on the table is a state of high order, but a broken cup on the floor is a disordered state. One can go readily from the cup on the table in the past to the broken cup on the floor in the future, but not the other way round.

"The increase of disorder or entropy with time is one example of what is called an arrow of time, something that distinguishes the past from the future, giving a direction to time."³

B. Electrino Model and 2nd Law

The natural tendency of leptons in beta decay is that the parent lepton combines with one or more gravitons to produce more particles. In all natural reactions, the order energy of the resultant particles is less than or equal to the order energy of the original particles.

1. Negative Energies. Let us consider antimatter more carefully. "In the Dirac theory also, *the permissible energy values for a free particle range from $+mc^2$ to $+4$ and from $-mc^2$ to -4* . The first of these results is of course just what we expect for a free particle – that its total energy can have any value greater than its rest energy. But the second result is quite puzzling, since it implies the existence of states of *negative total energy*."⁴ Anderson in 1932 discovered positrons in cosmic radiation. These were regarded as Dirac's negative energy particles. "The first two solutions of the Dirac equation . . . clearly describe a free electron of energy E and momentum \mathbf{p} . The two negative energy electron solutions . . . are to be associated with the antiparticle, the positron."⁵

However, in the annihilation it is not $(+mc^2) + (-mc^2) = 0$, but $2mc^2$ is the result of annihilation.⁶ There is something strange going on with the minus signs in these equations. The calculations are inconsistent.

Maybe there are two kinds of energy considered. One we can call entropy energy E_s . In the annihilation reaction, $\# +mc^2\# + \# -mc^2\# = 2mc^2$. Entropy energy is the higher value. The other energy is order energy E_o . In order energy the same reaction is $(+mc^2) + (-mc^2) = 0$.

Let us consider entropy energy and order energy for particle decay schemes. There are a few decay schemes where no negative order energy (anti-matter) is introduced in the right hand side of the decay schemes. In those few instances, the final order energy is equal to the initial order energy (when kinetic energy is taken into account). But in most cases, a trace of negative order energy (anti-matter) is introduced into the right side of the decay schemes. There is nothing on the left hand sides of the decay schemes to correspond to this addition of a trace of negative order energy on the right sides of the decay schemes. Therefore, total order energy is less on the right hand sides of the decay schemes than on the left hand sides (if only by a trace). A few decay schemes introduce a lot of antimatter (as K^-) on the right side of the decay scheme. The loss of order energy in the systems is greater in those cases. But in every case, for all natural processes, the order energy final is \leq the order energy initial, or

$$\Delta E_o \leq 0. \quad (7-3)$$

Let us check the order energy for electron electrino fusion reactions. Electrons made energetic by acceleration (as heavy as protons) fuse and form anti-protons. Matter is converted to anti-matter. Entropy energy is conserved, but not so order energy. Order energy is reduced in the extreme from +938 MeV to -938 MeV or more for each electron fused (two electrons are fused in each reaction).

The order-to-disorder arrow for electron electrino fusion points in the usual direction. The system does obey the second law of thermodynamics.

2. Reversing the Order-to-Disorder Arrow. What would happen if we fused the electrino constituents of positrons instead of the electrino constituents of electrons? Entropy energy E_S would again be conserved. Entropy would be increased. However, order energy E_O would go from $-2 \times 938 \text{ MeV}$ to $+2 \times 938 \text{ MeV}$ – from disorder to order. The order-to-disorder arrow would be reversed. This would be a reaction that would be prohibited by the second law of thermodynamics – unless the strong gravitational force that fuses the anti-semions would be stronger than the second law of thermodynamics (which otherwise governs weak interactions). The stronger of the strong gravitational force and the second law of thermodynamics should be determined by experiment. More rides on that one experiment than perhaps on any one other experiment in this generation. If it is found that strong gravity is stronger than the second law of thermodynamics, then order can be restored at first in a small area, and then for the whole earth.

Here we see that the entropy arrow of time and the order-to-disorder arrow of time are separate and distinct, and are not one and the same thing. While all the reactions the author has studied increase entropy, the fusion of positron anti-semions reverses the order-to-disorder arrow, making more order out of the disorder.

Positron constituent electrino fusion might not only take the electrinos from disorder to order. It could make other physical processes in a local area go from disorder to order. The positron fusion not only violates the second law of thermodynamics, it reverses the order-to-disorder arrow of that law in a local area, making other processes in that area reverse. Let us consider that process more to see how it might be regulated.

We guess the desired relationships for reversing the order-to-disorder arrow in the second law of thermodynamics through dimensional analysis. We want to solve for r , the maximum radius in which the reversed law would be effective. There is a way we can obtain a length from combinations of our variables and constants. That way is in the right hand side of Eq. (7-4). The whole expression is the thermodynamic relation we are seeking. The thermodynamic relation is:

$$(\Delta E_o)_t > 0 \text{ where } r < \frac{(\Delta E_o)_1 c}{ik}, \quad (7-4)$$

where E_o is the order energy – the positive or negative energy in the pair production of particles; ΔE_o is the change in the order energy, where $(\Delta E_o)_t$ is the change in the total order energy of the system, and where $(\Delta E_o)_1$ is the change in the order energy for a single source reaction – for a positron fusion reaction it is approximately $2 \times 10^9 \text{ eV/collision} \times 1.6 \times 10^{-19} \text{ joules/eV} = 3.2 \times 10^{-10} \text{ joules/collision}$; c is the speed of light – approximately $3.0 \times 10^8 \text{ m/s}$; we shall solve for the effected radius r ; i is the beam current in each beam in Coulombs per second (we will solve for 10^{-11}); k is the ratio of particle energy to particle charge. This energy per charge is the accelerated energy of the particle (roughly $1 \times 10^9 \text{ ev}$ times $1.6 \times 10^{-19} \text{ joules/ev} = 1.6 \times 10^{-10} \text{ joules}$) divided by the charge of each positron ($q = 1.6 \times 10^{-19} \text{ coulombs}$), which equals $10^9 \text{ joules per coulomb}$. The collision efficiency eff is not needed in this equation, because the result is not in particles, but is already in collisions.

Incredibly, the lower the current, the bigger is the radius of the affected area. The greater the current, the smaller is the radius of the effected area. With 10^{-11} A beam currents, the effected

radius r solves for 9.6 meters – roughly 10 meters, which describes a small area – less than a tenth of an acre.

To get an idea of the positron beam currents needed to reverse the order-to-disorder arrow of the second law of thermodynamics in what size of affected radius, see Table 7-1 below.

For an area the size of	r	beam current
House	10 m	10 pA
four football fields	100 m	1 pA
community	1 km	100 fA
city	10 km	10 fA
Israel	160 km	0.6 fA
U.S.	2,400 km	0.04 fA
World	13,000 km	0.008 fA
Sun	1.7E11 m	6E-22 A

Table 7-1. Beam currents versus affected radius for reversal of the order-to-disorder arrow of the second law of thermodynamics.

We must make sure that reversing the second law will do only good and not evil before we flip the switch. Inspired evidences will be studied in the next chapter on a wide range of phenomena affected by reversing the order-to-disorder arrow in the second law of thermodynamics.

¹F. Reif, *Statistical Physics*, Berkeley Physics Course--Volume 5 (New York: McGraw-Hill Book Company, 1967), p. 283.

²Stephen Hawking, *A Brief History of Time--From the Big Bang to Black Holes* (New York: Bantam Books, 1988), pp. 102, 103.

³*Ibid.*, pp. 144, 145.

⁴Robert B. Leighton, *Principles of Modern Physics* (New York: McGraw-Hill Book Company, Inc, 1959), p. 665.

⁵Francis Halzen, Alan D. Martin, *Quarks and Leptons* (New York: John Wiley & Sons, 1984), p. 107.

⁶David S. Saxon, *Elementary Quantum Mechanics* (San Francisco: Holden-Day, 1968), p. 386.

(End of Chapter 7)

EXECUTIVE SUMMARY OF BUSINESS PLAN

electrino energy is a new company formed to develop the inventions envisioned by the new model of physics—the electrino fusion model of elementary particles. Our company provides theoretical work and guidance to licensees. Our focus is the reverser of aging, disease, and decay processes (Refresher 1) and whatever else we must do to fund the Refresher 1.

electrino energy was formed October 12, 2005 as an invention development and theorist service specializing in four high-technology inventions – inertia-less craft; artificial gravities; reverser of aging, disease, and decay processes; and electrino fusion reactors generating electricity. All four inventions have potentially extremely high value. But all four inventions currently have three principle difficulties: 1) they are unbelievable by almost all persons – including agency heads, venture capitalists, congressmen and senators; 2) almost all of them cost scores of millions of dollars to develop; and 3) **electrino energy** has no money to develop them. With no capital and no revenue stream or other assets to fall back on, **electrino energy** cannot even get a guaranteed loan.

But **electrino energy** is not resource-less and in a hopeless condition. It has three principal approaches that it can take to resolve this dilemma:

1) Though the aging reverser is the most urgently needed, a miniature inertia-less craft can be constructed for a whole lot less money. It should be possible to construct one for a few hundred dollars borrowed from friends. But that technology could be licensed for hundreds of millions of dollars – enough to finance all the four high-tech inventions.

2) As a back-up to that approach, venture capital angels could be approached to advance the money to finance the reverser of aging, disease, and decay processes. This invention is not only high tech, but medical. The other inventions could be developed at a later time.

3) As a back-up to that approach, the owner could pursue his particle theory, predicting the masses of particles. That may be difficult, but not impossible. This would do what no other physical theory can do. Such a feat would be publishable, arousing interest among scientists for creating a facility to test the model – opening the way for government funding of the high-tech inventions.

A master decision tree flow chart linking and employing these three alternatives for funding the development of the inventions is in Section 7.0 Financial Plan.

According to alternative 1), projected sales and profits for the first four years of operation are summarized below:

Year	Sales(\$)	Profits(\$)	Profit/Sales(%)
1	200,000,000	0	0
2	0	0	0
3	0	0	0
4	10,000,000,000	9,000,000,000	90.0

According to alternative 2), there are no actual projected sales and profits for the first three years of operation. Year four is the same as above. According to alternative 3), there are no projected sales or profits for the first five years.

Currently, there are no competitors for any of these inventions. Once public incredulity is overcome by demonstration, the devices should have huge market potential.

The size of the electricity generating market is essentially enormous. It would be up to 50 percent of electric generation world-wide eventually. That's probably over a trillion dollars.

A self-powered high-speed locomotive powered by an electrino fusion power reactor would need to be at least 85 feet long.

Environmental Heat Engines

Las Vegas inventor Robert Stewart developed his "Stewart Cycle" engine for transportation vehicles, electricity generators, and large-scale water lifters. His efficient and pollution-free engine uses ambient heat to expand a working fluid such as Freon or ammonia and move pistons through sealed chambers. His patent is for Vapor Actuated Power Generating Device, No. 4,033,136.

A possibly more up-to-date version is Ralph J. Lagow's Method of Generating Power from a Vapor, Patent No. 4,693,087. Ken Rauen's Rauen cycle and Superclassical cycle engines also expand working fluids with environmental heat to provide useful net mechanical power.

Mr. Stewart claimed that his fuel-less engine could lift Colorado River water from below Hoover Dam back up into Lake Mead, thereby doubling Hoover Dam's output of electricity. He also proposed lifting water from the Columbia River into the Colorado River via a canal, generating electricity as the water flowed back downhill.

DISCLAIMER: Inclusion of any invention or technology described in this list of inventions does not in any way imply its suitability for investment of any kind. All investors contemplating any investments in these devices and technologies should first consult with a licensed financial professional. Prospective investors should exhaustively perform their own investigation of pertinent facts and allegations of facts. Investors should also ensure thorough compliance with regulations of the federal Securities and Exchange Commission and appropriate state securities divisions. For more information, see <http://www.zpenergy.com/modules.php?name=News&file=article&sid=1655>.

Thank you for your comment, Gary Vesperman.

The comment tracking number that has been assigned to your comment is SEDDSupp20015.

Comment Date: December 1, 2011 22:09:09PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDSupp20015

First Name: Gary
Middle Initial:
Last Name: Vesperman
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Address: 588 Lake Huron Lane
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City: Boulder City
State: NV
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Country: USA
Privacy Preference: Don't withhold name or address from public record
Attachment: Locomotive_Power_Sources.docx

Comment Submitted:

(I left out part of the conclusion of a previous comment re metamatter.
This is the correct version. Sorry for the inconvenience. Gary)

Attached is my compilation of candidate power sources for high-speed rail locomotives. It is available in my website
www.padrak.com/vesperman. Pages 28-33 has this description of metamatter:

Metamatter

9/25/1997 11:16 AM
From: Robert Bass
To: James Bowery
jabowery@netcom.com;
CC: Robert W. Bass rbrtbass@pahrump.com;
Gary Vesperman
vman@skylink.net;
Subject: for the postulated "Bass page"?

Jim,

I just went to <http://www.generalstore.com/> and see nothing but "under construction, etc." Is this you, or someone else in another state? Do you know how to (reasonably economically) do Mass-eMailings? Say either from a rented Data Base of known Investors, or just blindly to "millions"?

How about posting the following

Potentially Awesome Speculative Investment Opportunity?

=====

Venture SEED Capital? Low Risk, AWESOME Payback!!!

I seek one or more High-Technology-Oriented "High-Roller" Nerves Investor(s) who would be intrigued by the following proposition (if demonstrably sound and absolutely genuine): Suppose you go to "Super Monte-Carlo" in the sovereign nation of Erewhon, and you come to a table with a Croupier who says:

"I have here a coin the size of a U.S. silver dollar, which is perfectly evenly balanced between Heads and Tails to 10 decimal places [with the edge for Heads in the 11th decimal place]; and a certificate from the US Bureau of Standards certifying it is not "loaded" to favor either Heads or Tails to the best measurements they can make.

"You can flip the coin yourself.

"I have here Certificates of Deposit for \$30 Billion in a centuries-old Swiss Bank of spotless reputation.

"My croupier's fee for allowing you to play is ridiculously modest.

"How much are you willing to wager on the honest flip?

"Now suppose the preceding scenario is repeated, except that several of the most reputable scientists in the world assure you that the coin is 'loaded' so that the chances of Heads are between 95% and 99%. Your own experts assure you that you have at worst One Chance in 20 of losing.

"Finally, the croupier says, you may play for \$150,000."

To recapitulate, the odds are 20-to-1 that you will win \$30 Billion, versus one chance in 20 that your entire \$150,000 wager will be lost.

Would you play?

=====

-----PRIVATE Communication-----

----- (NOT a Publication) -----

=====

I need Seed Capital of \$150,000 under circumstances exactly analagous to those outlined in the Risk/Reward scenario above. If "Heads" comes up, then my patented Plasmasphere technology can be escalated to a Metamatter technology, where by METAMATTER I mean a solid, crystallized fully-ionized plasma.

An ordinary crystal has nuclei spaced apart distances of about 10^{-8} cm, the Bohr radius, because the electron cloud makes the atoms behave like little billiard balls of the size indicated.

However, in a plasma, the positively-charge nuclei and the electrons are equal in number, but the electrons are not in orbit around individual nuclei; they are "mixed up" as in a plum-pudding. Most plasma physicists will tell you that in order for hydrogen gas to be fully ionized (i.e., all electrons stripped from all nuclei) the temperature of the gas would have to be above 150,000 degrees Kelvin (i.e., 15 times hotter than the surface of the Sun). But this is demonstrably FALSE (both theoretically and experimentally). If the gas is dense enough, it can be fully ionized at "low" temperatures, e.g. 5000 Kelvins [so-called "pressure ionization"].

Now suppose that the fully ionized low-temperature gas is condensed into the physical state of a liquid metal. I call this a Liquid Metallic Plasmoid (LMP). The characteristic of an LMP is that, like mercury, it keeps a constant volume; unlike a gas, it does not expand to fill all available space (if in a vacuum). The positive nuclei remain on average equidistant, and the electrons circulate around the dynamic lattice as in a giant crystalline molecule. Cook called it a "Cryscapade"; whereas others might call it a Liquid Crystal.

Fewer than a score people in the world understand that LMPs can exist. One LMP was photographed in half a dozen or so photos on the cover of the Journal of Applied Physics in 1957 by [later] Nitro-Nobel Medalist, physical chemist, Dr. Melvin Cook. The theory by which Cook explained his accidental discovery has been independently rediscovered (in 3 separate countries, USA, UK & France) by researchers seeking to explain the illusive natural phenomenon of Ball Lighting.

The late expert on High-Energy Lasers and Shock Tubes, Dr. Jay Blauer of Rockwell Rocketdyne, who died early of leukemia, helped me to design an experiment that would prove beyond shadow of a doubt that LMPs can be created at will. The basic idea is to use a combination of Shock Tube technology and High-Energy Laser technology, with my patented Plasmasphere technology, in order to achieve in a non-self-destructive, reusable device, what Cook discovered accidentally with high-explosives in a self-destructive experiment.

Once the mere EXISTENCE of producible-at-will LMPs is achieved (for the Risk Capital of \$150K), it will be trivially easy to raise several million more for refinement of the device to move the LMP into a cryogenic vacuum chamber where (since it is electrically conductive) it can be magnetically levitated and allowed to cool by radiation.

Use of the Brush-Sahlin-Teller Equation of State (used to design the H-bomb) shows that as the LMP cools, its volume contracts, and it becomes more and more dense. There can be shown to scientists sufficiently expert to understand the evidence, a mass of recent experimental evidence (as well as expert theoretical evidence) that before the LMP gets down to room temperature it will crystallize into a Metastable Solid Crystal, namely a new form of matter never seen before on Earth!!!

The density will be intermediate between that of ordinary condensed matter and that of neutron stars, wherein a teaspoonful weighs tons.

I propose to manufacture 3 kinds of Micro-Crystals of Metamatter: MSP, MSD, and MSD. Each addresses in a truly revolutionary

way a trillion-dollar market, with a multi-billion dollar profit potential. In many ways, Metamatter will have a bigger impact on human civilization than any prior discovery, including both computers and atomic energy! In fact, consider the following:

MSP (Meta-Stable Protium [hydrogen]) will be the IDEAL room-temperature Superconductor, which will revolutionized both the Computer/Electronics industry and the Electric Power industry.

MSD (Meta-Stable Deuterium [heavy-hydrogen]) will be the ideal 5th Generation Cold Fusion fuel; when triggered by an infra-red photon of 17.7 eV, a micro-pellet will undergo a phonon-mediated and Lattice-Catalyzed ANEUTRONIC chain-fusion reaction to cleanly release the energy of 10 sticks of dynamite, to make steam for mechanical heat and conversion at 67% efficiency into electrical energy. This can make both homes and automobiles independent of the present electrical utility companies, though they will still need to buy the almost dirt-cheap MSD fuel micro-pellets from Metamatter Industries.

MSH (Meta-Stable Helium) will be the IDEAL rocket propellant for expanding human civilization into the Solar System (e.g. to colonize Mars); when a micro-crystal of MSH is triggered by the right frequency of laser-light, it will return to the form of gas as if it had been compressed by tens of millions of atmospheres of pressure; it will release 43 times more energy per unit weight than any conceivable chemical combination!

During the mid 1980s, the Air Force Systems Command sent a group of 7 or 8 Colonels who held Doctorates in the physical or engineering sciences to scour the USA for 9 months, in groups of 2 or 3, and to report back on what futuristic technology would have the greatest potential impact on the USAF and USA economy by the year 2000 if reduced to actual practice. They listened to 600 industrial and academic presentations and selected MSH as the greatest payoff (for least risk) choice! The USAF Rocket Propulsion Lab was supposed to issue 8 parallel contracts for 8 "crash" projects to see if bulk MSH could be manufactured. I was slated to get one of the 8 contracts, but my approach (through solidifying a helium LMP) was radically different from that of the other 7 selected proposers.

With MSH as fuel, one could take a 50 percent payload to Mars and back in two weeks! (Accelerate there and return at one gee.)

But a Princeton professor of Physics, Will Happer, then Secretary of the JASONS [advisers to DOD/DOE], advanced theoretical arguments which appeared to shoot down the practicality of the other 7 approaches, and the whole project was canceled. But Happer's arguments are totally irrelevant to my approach. Moreover, Happer was later Chief Scientific Advisor to Admiral Watkins (Secretary of DOE) when the ERAB Report was produced.

Those who understand the recent work of Arata and Zhang in which the aneutronic conversion of deuterium nuclei to helium nuclei inside of a palladium lattice is recorded in Real Time (inside of a sealed apparatus which contains a Mass-Spectrometer and which give ZERO helium when the heavy-water deuterium is replaced by ordinary-water hydrogen) know that Aneutronic Cold Fusion (CF) is a demonstrable FACT and that Happer and the ERAB Report were WRONG. Therefore it is logical to consider the possibility that Happer was also wrong when, before he shot down CF, he also shot down MSH.

There is ZERO risk in producing an LMP; it is just that 99.999% of all scientists are ignorant of Cook's work.

There is a slight technical risk in crystallizing an LMP at room-temperature; conceivably, it will remain liquid until below the temperature of liquid nitrogen, in which case my proposal will have been a failure. But the payoff is so AWESOME, and the chances of failure so tiny, that the risk seems worth taking.

I can supply drawings of the Proof-of-Principle Process Prototype Plasmasphere demonstration designed by Dr. Blauer and myself. Jay Blauer told me that he could do the experiment in his spare time evenings and weekends "in two weeks" using shock-tube and laser equipment already in his lab at Rocketdyne, provided he had \$10,000 cash for items and materials not on hand.

Several "reputable" labs have explained to me that they would not even consider bidding on doing the Bass-Blauer experiment for less than \$100,000. I have personal contacts at 22 government and private labs (such as JPL, SRI, LANL, etc.) which I would like to visit with my former graduate student Dr. Lou Puls (who, unlike me, is an accomplished experimental plasma physicist) to make joint presentations on the theoretical and experimental aspects of creation of an LMP, preparatory to asking them to bid. After 22 weeks spent in such visits, (and paying Dr. Puls Consulting Fees) I expect to have \$50,000 left to offer the Highest Bidder. I also expect that no one will bid less than \$100,000. But I also expect that out of the 22 presentations, at least several will become so excited that they will offer to Cost Share. In several labs, the working-level scientists interested in LMPs have told me, "If you can get the Management to pay attention, we have in place already a mechanism and a precedent to Cost Share."

Remembering what happened to Fleischmann and Pons it will accomplish naught for me to take the \$150K, rent the equipment, and do it in my own garage. Nobody will believe it, and nobody will pay any attention. However, if we spend 6 months getting suitable technical personnel of nationally reputable laboratories excited about the subject of LMPs, and then some lab with the prestige of, say, JPL or LANL or SRI, announces the production of an LMP, many other labs will immediately undertake to "catch up" and to replicate the result at their own expense. Once 3 or 4 labs have announced successful replication, no one will doubt and then it will be trivially easy to raise the venture capital to go from LMPs to solid, crystallized Metamatter micro-crystals of MSP, MSD, and MSH.

I can supply a large amount of written technical material to anyone who is interested in raising the \$150,000 seed capital required to get Metamatter Industries off the ground (and for me to file the pioneering Patent Applications, and since I am now licensed to practice Intellectual Property Law before the PTO I can do it myself at no extra expense – as did the physicist/patent-attorney who invented the Xerox process).

This will be BETTER than getting in on the ground floor of Xerox or Polaroid or Microsoft!

Sincerely,

Robert W. Bass, M.A. Oxon, Ph.D.
Dr. Robert W. Bass, Registered Patent Agent 29,130 [ex-Prof Physics]
Inventor: Topolotron, Plasmasphere, issued; QRT Cold Fusion, pending
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=====
XXX.YYY
XXX Venture Partners

Dear XXX,

Have you got your _____ Fund off the ground yet? Did you receive the Proposal I sent you last week? Do you agree that the logic of the Analogy I used for the proposed Low-Risk, AWESOME Payoff, "Proof-of-Principle" (POP) Experiment is sound? If a rational Investor were convinced (e.g. by the photos published by Nitro-Nobel Medalist, Melvin Cook) that it is possible to put a plasma in the state of liquid metal (Liquid Metallic Plasmoids, or LMPs), and that the ONLY risk is that when cooled to room temperature they will not yet crystallize [but won't crystallize until down below, e.g.. the temperature of liquid nitrogen], which risk will be taken by OPM [Other People's Money] when the scientific community realizes that LMPs can be created at will, and that there is ZERO risk in performing the proof-of-principle demonstration experiment to convince them of this fact, and that this can be done for as little as \$150,000 (which will also permit Patent Applications ensuring the inside track when LMPs get crystallized), don't you agree that the Reward to Risk Ratio of $\$3 \times 10^{10} / \$1.5 \times 10^5 = 2 \times 10^5$ multiplied by the probability of crystallization at room temperature (which is supported by hundreds of theoretical papers on MSH and at least one recent paper in Physical Review Letters on MSP, as much, much better than 50%), namely an EXPECTED REWARD/RISK RATIO of more than 100,000-to-1 implies that this Proposal is "better" than any proposal made in this field yet, when you note that each of the 3 main products to be manufactured from crystallized LMPs, namely MSP, MSD, and MSH, EACH separately addresses a different Trillion-Dollar Market with a clear Profit Potential of more than \$10 Billion?

Moreover, this is a Proposal in which the Investor who RISKS \$150K will know within a mere 6 or 7 months WHETHER OR NOT Phase One of his speculation has paid off! (And it is highly likely that the Absolute Answer will be known within another 3 months, considering how fast the scientific community reacts to something, e.g. High-Temperature Superconductors, which is both surprising and EASY to replicate!)

Please tell me when a Speculative Investment Possibility better than this one has last crossed your desk? (I'll bet, NEVER!)

Regards,

Bob Bass

Dr. Robert W. Bass, Registered Patent Agent 29,130 [ex-Prof Physics]
Inventor: Topolotron, Plasmasphere, issued; QRT Cold Fusion, pending
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(End of excerpt)

This Draft Solar PEIS should thoroughly and honestly compare the cost-effectiveness of a World War II Manhattan Project-styled crash program to quickly develop and commercialize energy inventions based on the above versions of metamatter with covering and ruining millions of acres with relatively inefficient and expensive solar energy collectors and transmission lines.

(If you have difficulty contacting Dr. Bass, email me, Gary Vesperman, at garyvesperman@yahoo.com. He called me a few months ago from Dallas (?). What I have of his phone numbers are 817-682-2655, 817-377-7638, and 817-370-7109. I also have his current email address.)

Locomotive Power Sources

High-speed trains typically rely on some means of supplying energy to the locomotive from an external source. For example, cumbersome overhead electric lines are tapped to directly power a locomotive's electric drive wheels. Another method of connecting the locomotive to an electricity grid is with a dangerously exposed high-voltage third electrified rail. Linear magnetic propulsion mechanisms have been researched.

It would be much cheaper and easier to build and operate high-speed trains if their locomotives utilize an internal practically fuel-less power source.

The following candidate high-speed locomotive power sources appear worthy of further research. Some may be found to be worthwhile for building and testing prototype self-powered locomotives.

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BlackLight Power's Hydrino Generator

BlackLight Power, Inc., is developing an exotic new source of clean energy from ordinary water. Either an electrolytic cell or gaseous potassium ions in a vacuum compress hydrogen atoms into lower-energy-state hydrogen atoms called "hydrinos". When the hydrinos are formed, energy is released which in magnitude is between chemical and nuclear energy. BlackLight Power, Inc., has ambitious plans for retrofitting fossil-fueled and nuclear power plants.

BlackLight Power, Inc., is developing a 100-kilowatt generator which can power a car 100,000 miles on a tank of water. BlackLight Power, Inc., claimed some years ago that it is developing a 10-kilogram battery which can supply 150 horsepower for 1,000 miles.

BlackLight Power, Inc., has already licensed 8,250 megawatts of clean, safe hydrino generation fueled by water to seven utilities (Hoover Dam's nameplate capacity is 2,080 megawatts) – eliminating \$2 billion/year in fuel costs.

Focus Fusion

See <http://www.focusfusion.org/>. Apparently this method is much less expensive than hot fusion.

Thorium PowerPack

Bob Dratch's thorium powerpack would generate electricity at approximately one-tenth of the cost of current methods of producing electricity. Thorium is sufficiently abundant that the entire planet can be powered for millennia. After ten years of continuous operation, a trace amount of U-233 is produced. U-233 recovery to re-purify the thorium is easily accomplished. Thorium thus lasts a long time when recycled and consequently is a very efficient energy source. After extraction from ore, thorium does not require energy-intensive enrichment as is the case with uranium.

A thorium-powered reactor is inherently safe. It doesn't run the risk of "meltdown" or explosion nor can even a dirty bomb be created. Its nuclear reaction simply stops when its neutron exciter is turned off.

The simplest and smallest "table top-sized " neutron exciter design is something close to the size of a 4-D cell flashlight, and starts at about 500-kilovolt neutron output. In fact this smallest most cost-effective system can run off 4 D cells for its power.

A thorium powerpack's neutron excitor does not use radioactive flux components as conventionally done for portable systems. Instead it relies on Dratch's invention of a novel method of resonant phonon pair cleavage using specifically designed nuclear lattice holo-forms (holographic waveforms) to induce neutron imbalance in a host atom where the host atom then attempts to establish "balance" through the liberation of neutrons. Dratch demonstrated the first model of this novel design back in 1966.

Commercial thorium powerpacks can be developed with 50 or 100 kilowatts of output for home use, and up to 1 megawatt for industrial use. They actually are "power amplifiers" with power outputs of 60 times over input power. Maintenance would be minimal.

IPMS Thorium-227 Electricity Generator

The I.N. Frantsevich Institute for Problems of Materials Science (IPMS), Kiev, Ukraine, from 1951 through 1991 secretly employed 6600 of the most brilliant theoretical physicists in the entire Soviet Union to work for nearly 50 years with complete freedom. They were able to develop whole new sciences, technologies and materials unknown in the West.

Their models of non-linear quantum mechanics, plasma physics, atomic engineering, nuclear physics and related mathematical and theoretical constructs, which made their development possible, are so unique that they challenge the validity of the most fundamental assumptions embodied in the Copenhagen Interpretation model currently held in general acceptance in the West.

For example, Western-developed particle/wave quantum mechanics is described by Einstein's $E = MC^2$. The Soviet nonlinear model of quantum mechanics is described by the formula $E = M_K v$ [Energy = Mass @ rest as a function of a mathematical constant].

Einstein's theory of relativity assumes that the speed of light is constant. However, measurements have shown that the speed of light has slowed down 7 per cent over the past two centuries. (See http://worldnetdaily.com/news/article.asp?ARTICLE_ID=39733.) Einstein's famous equation is therefore not based on the real world of peer-reviewed experimental results. Consequently the more correct Soviet model has enabled numerous technical advances not even dreamed of by Western science.

Among several energy inventions developed by the IPMS are free-standing thorium-227 isotope electric power generating plants. They can be small enough to power a single home and large enough to power whole communities. They also can operate for up to 18 years without ever requiring refueling or maintenance.

Micro-Fusion Reactor Employing Stable High-Density Plasma Electron Spiral Toroids In Neutron Tube

Electron Power Systems, Inc., (EPS) has discovered the explanation for ball lightning and from that has invented and protected with five patents an Electron Spiral Toroid Spheromak micro-fusion reactor. Safe, pollution-free micro-fusion reactor-powered generators could reliably generate electricity with capacities ranging from 10 kilowatts through 1000 megawatts at the cost of 10% of today's electricity. All transportation vehicles could be reliably and safely powered with micro-fusion reactors with substantially lower production, operating and maintenance costs and without poisonous emissions. EPS expects to reduce the mass and cost of aircraft by 70%, and space launch costs by more than 95%.

Each year 15 million cars and trucks are sold in the USA, and 48 million are sold worldwide. EPS expects to eventually replace all of them with silent, reliable, safe, emissions-free micro-fusion reactor powered electric vehicles with substantially lower production, operating, and maintenance costs.

In addition, EPS has designed a 10kW generator that will operate on clean, non-polluting fuel, and can operate locally. This innovation will potentially improve the lives of most of humanity by making available low cost electricity that anyone can produce in their own homes. It will help literally billions of people. The paper design shows that the EPS generator will be the approximate

size and cost of a 10 kW generator available today in any hardware store, with the advantage that it will not use fossil fuels, but will use clean energy instead.

An article in the Institute of Electrical and Electronic Engineers, Inc., Spectrum magazine over ten years ago stated that world demand for electricity increases approximately 500 megawatts every day. To put this in perspective, the equivalent of another Hoover Dam would have to be built every four days to keep up with world electricity increase demands. The EPS innovation will make local generation possible without the need for more power plants or more power lines.

Major contributors to air and water pollution are the fossil-fueled engines of aircraft, farm harvesters and tractors, ships, boats, snowmobiles, trains, military vehicles, and all-terrain vehicles. Their engines could be replaced with cheaper electric motors and batteries charged by safe, non-polluting onboard micro-fusion reactor powered generators.

Electron Power Systems, Inc., (EPS) is an early stage company working to develop the Electron Spiral Toroid Spheromak micro-fusion reactor. From EPS will come new applications, including a practical micro-fusion electricity generator, a low-cost space launch vehicle, a high-kinetic energy anti-missile beam, and practical zero-emission cars, trucks, buses, farm equipment, construction equipment, military vehicles, and jet aircraft.

EPS is moving to commercialize these concepts. EPS has assembled a team of engineers, and plasma physicists, all as contractors. EPS is working on proof of concept demonstrations for the applications.

EPS plans to build a laboratory demonstration unit in two to three years with present funding levels, and then the first commercial prototype. Recent breakthroughs in the EPS lab give confidence this will happen within this timeframe. More funding will make this happen sooner.

EPS is seeking \$2 million as a first round of investment to complete the development of a demonstration unit in eighteen months. A second investment of \$8 million will be needed to complete a prototype unit in eighteen months after the demonstration unit.

Up until now EPS has had no sales and operates with funding from angel investors, each of whom is retired and has accumulated a substantial personal fortune, allowing these types of investments of high risk, high reward. EPS also operates with funding from the founder.

EPS operates on a low budget, spends only what it has, and has incurred no debt or obligations. In this manner it is able to operate indefinitely, while continuing to make progress each year. Additional small amounts of funding will speed developments.

EPS has made a new discovery in physics with the potential to locally produce low-cost, clean energy for homes and buildings, independent of power plants. EPS owns the new technology and plans to initially produce a safe, clean, 10-kilowatt electricity generator that needs no nuclear fuels nor fossil fuels and will produce no green house gases. A home owner would need a one-liter sized container of environmentally benign hydrogen/boron fuel per year at a 20:1 fuel cost savings compared to commercially produced electricity or fossil fuels.

EPS's new discovery would allow anyone worldwide to buy a small home generator, about the size but less than the cost of a Sears 10-kilowatt portable generator. It would power their home plus

several nearby homes even where there are no power grids or power plants. This will be a step towards providing low-cost, local electricity to help eliminate poverty worldwide.

EPS plans to build 10-kilowatt generators by applying its newly discovered technology to improve work done by others to create energy. The basic work was shown successfully in the 1980s at the University of Miami. But that technology had limitations at that time. EPS's new technology will overcome those limitations.

From a modest start with producing 10-kilowatt micro-fusion reactor powered generators, EPS expects to branch out to other applications of its technology as well as producing larger and larger generators.

Mankind's practically insatiable demand for energy implies a simply humongous market potential for EPS which would encompass all of the world's producers of oil, coal, uranium and electricity plus all manufacturers of transportation vehicles including cars, trucks, buses, farm equipment, ships, boats, construction equipment, trains, satellites, aircraft, snowmobiles, and military vehicles.

Several thousand neutron tubes are in use in the USA today that safely collide hydrogen ions to produce neutrons, which in turn are used for medical testing, industrial process control, and homeland security. An ion source produces hydrogen ions (deuterium), which are accelerated to 110 kilovolts, then directed to hit a hydrogen target (also deuterium), which produces neutrons, and also heat as a waste product. Neutron tubes today produce neutrons and a low level of heat energy. The low density of the hydrogen ions limits the amount of energy produced.

In the 1970's, Dr. Wells at the University of Miami collided two plasma toroids to produce low-level fusion energy in the TRISOPS system. The amount of energy produced was limited by the short duration time of the plasma toroids used, as well as their low density and their low level of energy.

Electron Power Systems, Inc., (www.electronpowersystems.com) has discovered a plasma electron spiral toroid that remains stable without magnetic confinement, by using background gas pressure for confinement instead. These new plasma toroids are observed to remain stable for thousands of times longer than classical plasma toroids, which opens the way for new clean energy applications.

EPS's new stable plasma electron spiral toroids overcomes each of the neutron tubes limitations, and will potentially result in fusion with no magnetic containment required – thus producing a practical micro-fusion reactor. EPS's challenge is to adapt the new stable plasma toroid to the TRISOPS method.

The micro-fusion reactor adapts the Electron Spiral Toroid (EST) Spheromak to the neutron tube design. The EST Spheromak is patented jointly with MIT scientists who also have published papers confirming the EST Spheromak physics and data. The EST Spheromak will overcome the neutron tube limitations by increasing ion density by 2500 times. A metal containment can be used for efficient heat energy collection and conversion.

The EST Spheromak micro-fusion reactor will be less than three feet in length, the same as for present neutron tubes, and small enough to fit in an electric car. Elimination of the need for magnetic containment allows this power supply to be small and compact. A micro-fusion reactor will use hydrogen/boron to produce clean energy without neutrons. The energy in one pound of

hydrogen/boron fuel equals the energy of 250,000 pounds of gasoline. Hydrogen and boron are plentiful and will not run out, as oil is projected to do in the 21st century.

The Electron Spiral Toroid Spheromak (ESTS) is a plasma toroid that is self-organized and self-stable with no magnetic fields needed to contain it. Inventor Clint Seward has not seen any published descriptions of any devices nor phenomena similar to the ESTS. The US Patent Office agrees and has issued five patents.

The micro-fusion reactor was recently selected by the New Energy Congress as one of the few technologies now known to have a genuine potential to replace fossil fuels. See the lengthy analysis of the micro-fusion reactor in http://pesn.com/2006/03/08/9600242_Spheromak_Plasma_Toroid/.

"Locomotive Power Sources" for high-speed rail in www.padrak.com/vesperman includes the micro-fusion reactor with BlackLight Power's hydrino generator, focus fusion, Robert Dratch's thorium powerpack, Kiev, Ukraine's I.N. Frantsevich Institute of Problems of Materials Sciences (IPMS) thorium-227 electricity generator, Clem over-unity vegetable oil engine, thin-film electrolytic cells, noble gas plasma engine, Searl effect generator, Magnatron - light-activated cold fusion magnetic motor, Oleg Gritsevich's hydro-magnetic dynamo, IPMS energy storage/battery device, metamatter which is solid crystallized fully-ionized plasma, Gordon Ziegler's electrino fusion power reactor, and environmental heat engines.

Some of these listed new energy inventions appear to have at least one limitation that is not shared with the ESTS micro-fusion reactor.

The Electron Spiral Toroid Spheromak (ESTS) micro-fusion reactor has five patents and is documented in published papers confirming the physics and data. (1), (2), (3), (4)

Clint Seward discovered the ESTS (5) while studying ball lightning. Seward has developed a secret formula to produce the ESTS that is not reported in any other reference to date that he has seen.

Why this is important is that all spheromaks reported to date dissipate in microseconds, while the ESTS has been observed to endure with no confining magnetic field for hundreds of milliseconds, and theoretically will remain stable for many seconds.

1. Seward, C., Chen, C., Ware, K., Ball Lightning Explained as a Stable Plasma Toroid. PPPS-2001 Pulsed Power Plasma Science Conference, June 2001.
2. D. C. Seward, C. Chen, R. Temkin, Energy Storage Device, US Patent 6,140,752, Oct. 31, 2000.
3. C. Chen, R. Pakter, and D.C. Seward, Equilibrium and Stability Properties of Self-Organized Electron Spiral Toroids, Physics of Plasmas. Vol. 8, No. 10. Oct. 2001.
4. W. J. Guss, Chen, C., Equilibrium of Self-Organized Electron Spiral Toroids. Physics of Plasmas. August 2002.
5. Seward, C., Ball Lightning Explanation, Leading to Clean Energy. Acton, MA 01720. Seward Publishing Co., 2011.

EPS plans to initially produce a safe, clean, 10-kilowatt electricity generator that needs no nuclear fuels nor fossil fuels and will produce no green house gases. A home owner would need a one-liter sized container of environmentally benign hydrogen/boron fuel per year at a 20:1 fuel cost savings compared to commercially produced electricity or fossil fuels.

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From a modest start producing clean, reliable, safe 10-kilowatt micro-fusion reactor powered generators, EPS plans to methodically produce larger and larger generators. EPS even has a preliminary design with supporting calculations for massive 1000-megawatt baseload generators.

Mankind's demand for energy implies an enormous market for micro-fusion reactors encompassing all of the world's producers of oil, coal, uranium and electricity plus all manufacturers of transportation vehicles including cars, trucks, buses, farm equipment, ships, boats, trains, satellites, aircraft, mining equipment, snowmobiles, construction equipment, and military vehicles.

Countries which export oil will benefit from not having to quickly burn up their finite oil reserves on cheap gasoline and diesel fuel. Instead they will be able to draw down their reserves more slowly by making products of higher value such as plastics, medicines, fertilizers and synthetic textiles.

Some years ago a Forbes article stated that PECO (formerly Philadelphia Electric Company), with an income stream to back it up, was able to sell on Wall Street \$4 billion worth of bonds paying 5.8 per cent. A micro-fusion reactor powered generator manufacturer could simply sell bonds to build and operate generators at a low interest rate. Generator loan payback times may be in the ball park of a half-year to a year, depending on the local electricity market price. As soon as a micro-fusion powered generator is paid for, the revenue from that time on would be almost pure profit. Once a track record is established by successfully installing a few micro-fusion reactor powered generators, Electron Power Systems, Inc., could raise money to build and install more generators by simply selling billions of dollars of bonds instead of stock. So therefore, there wouldn't be any dilution of ownership.

EPS plans to partner with major electricity producers and suppliers. EPS will license them to produce electricity as they do now. EPS plans to partner with automobile manufacturers to license the technology. EPS plans to partner with defense and aerospace contractors to license the technology.

MANAGEMENT

Clint Seward is the discoverer of the Electron Spiral Toroid Spheromak and received the initial patents. He has been working ever since to scale up the results, which he has been able to do recently. He has been a project design engineer and program manager for many years, working initially with the US Air Force B-58 Hustler program, and as a project manager and engineering

manager in several major corporations. His work was defense initially, moving to security and process control, then energy related.

Clint was an Engineering Manager for Mosler, an American Standard Division 1970 thru 1978, and an Engineering Manager and VP of Marketing for Bristol-Babcock 1978-1985 – an ACCO fortune 500 Company. He was General Manager of Iontrack, a Division of a large international company 1985-1989 (now a Division of GE). He has been President of his own company Electron Power Systems, Inc. from 1989 to present.

Education: MSEE; University of Michigan 1965; BS at US Military Academy at West Point 1963.

D C Seward is the VP Engineering of Electron Power Systems, Inc. He has worked on the micro-fusion reactor technology since its inception in 1986. He has the responsibility for organizing the experiments and bringing qualified people in to help with the work. DC has worked as the VP Engineering of EPS on a contract basis from 1998-Present as funding allows. He is employed full time as a Field Sales engineer for Ember Systems, a wireless technology company, 2005-Present. Previously he was a Product Design Engineer, Trimble Navigation: 1994-1998

Education: MSEE Massachusetts Institute of Technology, 1994.

Jim Becker is acting CEO and Marketing VP. Jim has experience as a senior executive in the high tech sector with extensive experience managing rapid growth organizations. He has a broad technology background with proven skills in computer systems, avionics industries, and health care information technology along with direct functional experience in finance, sales, marketing, engineering and corporate management in both domestic and international settings.

Education: Thayer School of Engineering, Dartmouth College; Master of Engineering 1976; Master of Business Administration 1975; Bachelor of Engineering 1970.

PAPERS AND PATENTS for Clint Seward:

Chen, C., Pakter, R., Seward, D. C. "Equilibrium and Stability Properties of Self-Organized Electron Spiral Toroids." Physics of Plasmas. Vol. 8, No. 10. October 2001.

Seward, C., Chen, C., Ware, K. "Ball Lightning Explained as a Stable Plasma Toroid." PPPS-2001 Pulsed Power Plasma Science Conference. June 2001.

Seward, C. "Propulsion Using a Stable Plasma Thruster." STAIF 2001, (Space Technology and Applications International Forum-2001). American Institute of Physics , www.aip.org/catalog/conforder.html. February 15, 2001.

Seward, C.; Chen, C., Temkin, R. ENERGY STORAGE DEVICE , US Patent 6,140,752, October 31, 2000.

Seward, D. C. Electron Spiral Toroid; US Patent 5,773,919; June 30, 1998.

Seward, D. C. Energy Storage System, US Patent No. 5,589,727. December 31, 1996.

Seward, D. C., Chen, C., Temkin, R. (1996b). International Patent Application WO 96/38848, Energy Storage Device, Published December 5, 1996.

Seward, D. C. Fixed Geometry Plasma and Generator, US Patent 5,175,466. Dec. 29, 1992.

ESP's President Clint Seward collaborated with Gary Vesperman in writing a description of Seward's invention in www.padrak.com/vesperman. See "Locomotive Power Sources".

The Products page of www.electronpowersystems.com sells a book "Ball Lightning: Leading to Clean Energy" and a paper "Spheromaks Observed Forming in Atmosphere". Paper's abstract:

Plasma toroids, called spheromaks, are reported here as observed forming in partial atmosphere from high power electric arc events similar in power to lightning ground strokes. The spheromaks are observed to be stable in partial atmosphere with no confining magnetic fields and are observed to last for more than 200 milliseconds in partial atmosphere. This paper describes the observations and presents a model that explains the properties of these spheromaks, which we call Electron Spiral Toroid Spheromaks (ESTS's) due to the spiraling motion of the charged particles. It includes four TV images. The model presented is a hollow toroid with a thin outer shell of electrons that all travel in parallel paths orthogonal to the toroid circumference, in effect spiraling around the toroid. A comparable inner surface of ions acts to neutralize the space charge. The paper provides formulas describing the ESTS. Potential ESTS applications include X-ray production, air defense, and energy production.

The cost to produce a 10-kilowatt EST Spheromak electricity generator would be about \$1100 in production quantities. The EST Spheromak generator would have fewer parts than a comparable Sears generator.

Electron Power Systems, Inc., does not have a working prototype. The company has identified the instrumentation and needs another \$100,000 for laboratory work. With \$2,000,000, the company expects to have in two years a demonstrable prototype. In an additional year for \$8,000,000 a production prototype is expected to be built. Remember, each piece of the project uses technology others have demonstrated.

Clem Over-Unity Vegetable Oil Engine

Richard Clem was a heavy equipment operator who had noticed that a hot asphalt sprayer would continue to run for up to an hour even after the power was turned off! So he built a modified version as a 200-pound engine which ran on vegetable oil at 300 degrees and was started by a 12-volt battery. The heat is internally generated by the engine. During a nine-day test conducted by Bendix Corporation engineers, the engine in its self-running mode consistently generated 350 horsepower into a dynamometer. The engine is constructed from off-the-shelf components except for a hollow shaft and a custom cone with enclosed spiral channels.

If the automobile industry adopts the Clem over-unity engine, motorists could change its eight gallons of vegetable oil only every 150,000 miles and never buy any gasoline. To illustrate the engine's durability, the only working model of the Clem engine has been continually running on his son's farm for several years.

Combining the Clem over-unity engine with the hydrosonic pump could provide distilled ocean water as well as hot water for space heating, kitchens, and bathrooms at *no* energy cost.

The Clem over-unity vegetable-oil engine is not patented. It may be fairly straightforward to set up a small machine shop for manufacturing hollow shafts and cones.

Thin-Film Electrolytic Cells

A number of seasoned technology integrators have developed thin-film energy storage technologies which hold considerable promise. Dr. George Miley, Dr. Robert Hockaday and others have developed thin film technologies with energy densities exceeding 250-400 watt hours per kilogram. Dr. Miley's invention is illustrative. Using a flowing pack-bed type electrolytic cell with 1-molar LiSO_4 in light water, 1mm plastic beads with a very thin [500-1,000 angstrom] film of metal [nickel, palladium, titanium] are employed. A special sputtering technique is used to spray the metals onto the surface of the beads. With 2-3 volts of electrical power and 1.5 milliamperes of current, the single film experiments have shown the material to produce more than 10 times as much output power as input. The input power is no more than 0.01 watts while .5 watt of heat is produced.

It is likely that the physics involved in this reaction involve the release of energy as a by-product of nuclear transmutation. Dr. Miley has written, "The key finding from these studies has been the observation of a large array of "new" elements (i.e., different from the original bead coating), many with significant deviations from natural isotopic compositions, after the run.

Great care has been made to ensure that these elements are distinguished from isotopic impurities by use of a "clean cell" with high purity components and electrolytes, in addition to the pre-and post-run analyses. Even low-energy radiation was detected from the bead days after each experiment. Applications to space power, providing a 1-kilowatt cell with only 500 cubic centimeters of active electrode is predicted." Note that this particular invention, with its large over-unity energy yield, was awarded a NERI grant by the DOE. At the insistent urging of the American Physical Society and representatives from MIT and other universities whose laboratories are currently engaged in high-temperature gas-cooled nuclear reactor research, Secretary Richardson eventually withdrew the grant. The tangle-footed Department of Energy actively discourages the development of new sources of energy, presumably to appease the oil, uranium and coal companies. The U.S. Patent Office has unfairly classified secret nearly 5000 energy patents. Luckless energy inventors then risk 20 years in prison if they work on, sell, or publicize their energy invention – often created at great personal sacrifice.

Searl Effect Generator

The Searl effect generator (SEG) can be used to charge the batteries in a self-powered electric vehicle. A solid-state device, the heart of an SEG is a series of three concentric magnetic rings with magnetic rollers going around the rings. Both the rollers and rings are comprised of four layers of titanium, iron, nylon, and neodymium.

The magnetic fields impressed on the rollers have both AC and DC components. The AC component is for floating the rollers so they don't touch the rings. The DC component is to prevent them from flying off. The innermost set contains a minimum of 12 rollers for the same reason that a linear motor will not operate with less than 12 phases.

The inner set of rollers travel around at 250 miles per hour, the middle set travels at approximately 600 miles per hour, and the outer set at approximately 1500 miles per hour. Hundreds of millions of volts are generated the energy of which is picked up by brushes positioned all around the outside set of rollers.

An SEG also creates an anti-gravity field. An uncontrolled SEG will rise about 50 feet as the rollers increase speed, emit a light blue halo which indicates energy is being extracted from the ether, and then shoot up into the sky gaining speed, never to be seen again. At least one roof has been holed by an SEG. The friction-less rollers can be prevented from reaching the critical velocity that produces lift by use of a “governor”, either mechanical or electronic.

An SEG can be easily controlled by immersing it in an electromagnetic wave field the frequency of which is a harmonic of the SEG’s primary frequency. While in resonance, the magnetic poles of the rollers reach a unification state, and they stop moving.

The inventor has built and flown a small “inverse gravity” vehicle. A flying saucer-like SEG-powered aircraft about the size of a bus is currently being built in England by a private group.

The inventor for some years independently powered his house off the power grid with a home-sized electrical generator version of the SEG. A householder could set up a 45 x 45-cm unit and generate an output of 11 kilowatts of free electrical power.

Oddly, a house powered by an SEG has been observed to have greater healing powers than conventionally electric powered houses. The healing effect is claimed to be due to the electrons zapping the occupants, taking away pain and returning blood more quickly to damaged tissue. The SEG would also help combat asthma, bronchitis, hay fever and lung complaints due to the increased supply of oxygen in the body. Conventional methods of electric power do not pump out electrons which results in tired eyes and a tired brain.

The SEG's negative charge also means that dust stays in the carpet instead of floating in the air. This is similar in action to negative ion generators sometimes sold as air fresheners.

Two Russian scientists replicated the Searl effect generator and vindicated all of these somewhat unusual claims. See their paper “Experimental Research of the Magnetic-Gravity Effects”, V. V. Roschin and S. M. Godin, Institute for High Temperatures, Russian Academy of Science, Izhorskaya 13/19, Moscow 127412, Russia.

At one time, a German power company reportedly considered replacing a nuclear power station with eight fuel-less SEGs costing a total of about \$4.5 million and generating a total of 240 megawatts with no pollution.

Noble Gas Plasma Engine

Joseph Papp was granted US Patent #3,670,494 for his “Noble Gas Plasma Engine”. A mixture of recycled inert gases (helium, neon, argon, krypton, and xenon) is exposed to a high-voltage discharge in a sealed cylinder with a piston. The spark causes the gases to expand violently though no combustion occurs. Mechanical energy is delivered by the piston's displacement. The gases immediately collapse to their original density, and the cycle is repeated. After several thousand hours the gases lose their elasticity and are replaced. The operating cost is 15 cents an hour.

The first prototype was a simple 90-horsepower Volvo engine with upper end modifications. Attaching the Volvo pistons to pistons fitting the sealed cylinders, the engine worked perfectly with an output of three hundred horsepower. The inventor claimed it would cost about twenty five dollars to charge each cylinder every sixty thousand miles.

There were indications that such an engine could provide its own electrical power and being a closed system, require no fuel. It is not by definition an electromagnetic engine, however. It is believed that at the heart of the Papp engine is the development of high-density electrical charge clusters which provide the energy to expand the gases.

Other patents are 5319336, 4151431, 3670494, 4046167 - Mechanical Accumulator, 3680431 - Method and Means for Generating Explosive Forces, and 4,428,193 - Inert Gas Fuel, Fuel Preparation Apparatus and System for Extracting Useful Work from the Fuel.

Magnatron – Light-Activated Cold Fusion Magnetic Motor

During the late 1970's Howard Rory Johnson, a brilliant inventor in Elgin, Illinois, combined light-activated cold fusion with a new type of magnetic motor into a "Magnatron". His prototype Magnatron produced 525 horsepower but only weighed 475 pounds. It could propel a large truck or bus 100,000 miles on about 17 ounces of deuterium and 1.5 ounces of gallium before being recharged. This was years before either Pons and Fleischman or Dr. James Patterson entered the scene with their cold-fusion technology.

Johnson discovered the light-activated cold fusion portion of the Magnatron by accident when as he was developing a new type of electronic circuit using deuterium oxide and gallium, he noticed the two materials were producing energy on their own. He could not figure out what was triggering the energy production for some time until he finally discovered it was light.

The Magnatron's flow of deuterium (an isotope of hydrogen) is controlled by magnetic tunnels. At the point where the deuterium strikes the gallium (a heavy metal electron donor), a beam of light from a diffraction prism forces their fusion. That controlled reaction results in the fusion of two atoms forming a new atom. In the process, electricity is released, and that is what powers the magnetic motor. The Magnatron is sealed, however, so 'light' is provided from photon energy produced from coils tied directly to the motor. It is more or less a pulse-generated system.

A photon is a football-shaped particle of electromagnetic wave energy. Its energy content is a product of its frequency f and Planck's constant h . When an electron in orbit around the nucleus of an atom drops to a lower, less energetic orbit, a photon containing the energy equivalent to the electron's energy drop is emitted. This explains why light and other forms of electromagnetic energy such as gamma rays and radar are sometimes observed as particles and other times as waves. The heated filament of a light bulb is an example of photon production.

There is no way to explain, using contemporary electrical theory, how his relatively small motor could produce such tremendous horsepower. Utilizing his own new electrical-magnetic energy theory, involving a process he called "attract-attract", Johnson exploited the magnetic field. He used the top and bottom rotors in his motor. First, the top rotor attracted, released; then the bottom rotor attracted, released. The action of attraction, alternating between upper and lower magnets, used the windings to complete the attract field.

Robert Nelson's compilation of articles about the Magnatron provides much more technical detail on the Magnatron than the foregoing. (See <http://www.rexresearch.com/magnatron/magnatron.htm>.)

Johnson constructed his prototype Magnatron's 525-horsepower magnetic motor without any of the hardware that is presently used in present state-of-the-art electric motors. Conventional motors use the accepted principle of attract-repel, an energy form that doesn't utilize the magnetic field to its greatest advantage. For comparison, a typical 500-horsepower electric motor has wires exiting it that are the size of a garden hose.

The sealed self-contained Magnatron has no wires. Thus, other than the Magnatron's infrequent refueling with small amounts of deuterium and gallium, the stand-alone Magnatron uses no input power. The Magnatron's entire output power is conveyed by its magnetic motor's rotating shaft.

Fuel for the Magnatron is plentiful: deuterium is derived from water, and gallium is extracted from abundant aluminum bauxite. Commercially available pure gallium is still scarce and expensive. It may well be possible, however, to cheaply transmute another less expensive element into gallium. See Gary Vesperman's list of over two dozen methods of neutralizing radioactive waste in <http://freeenergynews.com/Directory/NuclearRemediation/Vesperman/> which includes possible transmutation methods. Additional methods are briefly described in <http://freeenergynews.com/Directory/NuclearRemediation/>. Dr. Santilli's method plus an explanation of suppression of radioactivity neutralization methods are available at <http://www.nuclearwasterecycling.com/>. Robert A. Nelson's survey "Transmutations of Nuclear Waste" is at <http://www.rexresearch.com/articles/nukewa.htm>.

The Magnatron uses no fossil fuel in its operation, and it emits no pollution. The magnetic motor's RPM is 8,000 with a gear ratio of 2:1. Lubrication for the sealed motor is synthetic motor oil which does not need changing and does not need a filter, because foreign materials such as carbon and varnish are not introduced into the system, as they are in the internal combustion piston engine.

This writer, Gary Vesperman, attended the 3rd International Symposium on New Energy in Denver, CO (April 25-28, 1996). I remember being impressed by Gerald Orłowski's lecture "Magnatron, Fusion Magnetic Motor", during which he provided substantial technical information on the Magnatron.

Orłowski reported that, "Some inside information revealed that OPEC had been keeping track of all competitive technology", and Johnson was #1 on their hit list! Johnson was about to manufacture the motors through a nationwide dealership. Some motors still exist, but the owner wants several million dollars for them."

This writer Gary Vesperman knows of very few inventions of new energy sources which are reasonably large stand-alone energy producers. Besides the Magnatron, they include Oleg Gritskevitch's hydromagnetic dynamo, and Electron Power Systems' micro-fusion reactor, which employs stable high-density plasma electron spiral toroids. Almost all inventions of new energy sources are, or claimed to be, relatively small over-unity power converters that convert input power to greater amounts of output power. Bob Dratch's thorium powerpack is an exception (see above).

At the September 14, 2005 public meeting in Green Valley Ranch casino regarding the proposed Regional Fixed Guideway traversing Las Vegas, Nevada, this writer Gary Vesperman submitted comments suggesting possible power sources for the train, including descriptions of the hydromagnetic dynamo and the micro-fusion reactor (<http://www.rtcsonthernnevada.com/rfg/documents/September2005PublicMeetingMinutes.pdf>, pp. 19-77).

No wonder the Magnatron's inventor, Rory Johnson, was rumored to have been "Number One" on Organization of Petroleum Exporting Countries (OPEC)'s hit list.

The following is an excerpt, slightly edited, from Orlowski's lecture transcript where he tells about his unwitting personal involvement with the U.S. Government's suppression of the Magnatron:

"After I saw the Magnatron motor, my life changed. I was no longer a happy camper working by myself in a wonderful, fully equipped research machine shop for the Greyhound/Armour Corporation in Arizona. While on a business trip, I saw this motor running in the Magnatron, Inc.'s showroom located in Elgin, Illinois.

"During my 15 years of electric motor repair, among the hundreds of motors I repaired, I rewound a 500 HP electric motor. That motor had wires exiting it that were the size of a garden hose. The Johnson motor being shown had NO wires. Surely this motor was unreal, a con-job to get money for dealerships. Yes, there he was, Rory Johnson standing next to his sealed self-contained electric motor.

"Upon returning to the Greyhound Towers and telling them what I had seen, they instructed me to call Mr. Johnson. Greyhound wanted Johnson to put forth a plan to install a motor in one of their buses for testing purposes.

"I called Johnson. He was delighted that a Greyhound employee had seen the motor running, and replied that the testing idea was acceptable. He would set a time frame for just when a bus should be delivered to him.

"Two years went by, with no business proposal from Johnson. Then, his former business partner, Mike Marzicola, called to say Johnson had passed away. He wanted me to work with him to get one of the motors running. I flew to Orange County, CA, saw the motor, took pictures, and put forth a plan to Greyhound. Subject to a contract with Marzicola, one of the old worn motors would be brought to the research shop. I would then very carefully reconnect the generator wires that Johnson had cut off prior to moving from Elgin, IL to California.

"Discussions with Marzicola brought out that the U.S. Government (given the authority by the Congress of 1952) had issued a GRAB order to take Johnson's motors. Rumor has it, the DOE is run by US oil companies and OPEC, and they want no competition, period. Because of this grab order, Johnson had cut the generator wires. He had then put his 'total shop', with motors and all, on several U-Haul trucks and left Illinois in the middle of the night. He went to California to re-establish his business. But before he could get a motor running, he passed away.

"Surely, Greyhound would agree to let me re-start one of Johnson's motors. The wonderful proposal put forth to Greyhound was rejected by mail. Very agitated, I went to the top office at Greyhound demanding an explanation. I was met at the door with the comment, "We know why you are here." Knowing the potential savings to the bus company, surely they could have only one reason for rejecting the proposal. They must have believed I was not qualified to start up the motor.

"Greyhound's top legal advisor stated he was present when the Greyhound board met and discussed my written proposal. He stated the following, "At NO time was the thought put forth that you would not succeed. In fact, we discussed all of the hardware designed and constructed by you, and started the conversation from what happens when Greyhound has a running motor. We contacted a State representative who felt this motor should not be allowed to be used in 4,000+ buses. The loss in tax

dollars for fuel alone would be a very huge sum.” He then asked me to leave, stating he was sorry that he had to tell me the reason the plan was rejected.

“Telling Marzicola of the rejection, I offered to personally put in a few thousand dollars toward the parts to get one motor running. In return, I would be assigned the dealership for the Phoenix metropolitan area. We signed legal papers in exchange for the money agreed on, and went to work. (I still have the signed dealership.)

“The first thing I noticed was that someone had been working on repairing the motors. Three motors already had new commutator assemblies installed. Each assembly consisted of 3 commutator assemblies on one insulated tube with a metal case to secure it to the shaft.

“One motor still had the old worn commutator assembly, as it had not yet been repaired.”

Orlowski goes on to describe his reconstruction efforts and includes interesting technical details about the Magnatron’s structure and theory.

Johnson did not know that OPEC tracks all potential competition to its oil business and that he was reportedly number one on OPEC’s hit list. His first mistake was publicizing, in many magazines, his plans to manufacture and distribute his revolutionary motor.

Erik Masen has spoken with a few people who even signed up for distributorships. Erik Masen had included Johnson and his Magnatron in his energy invention suppression anthology (see http://www.electrifyingtimes.com/erik_masen_suppression.html).

In 1979, Johnson placed his engine in a Buick Electra and was preparing to drive it around the country to sign up more distributorships when the US Department of Energy and the State of Illinois teamed up to prohibit his company Magnatron, Inc., from producing and selling Magnatrons. They first placed a gag order on all the people in the company by using the Secrecy Act of 1952.

Secondly, the State of Illinois immediately requested the company to provide information about all of their employees, distributors, stockholders, investors, suppliers, etc. They asked questions that blatantly deny anyone’s constitutional rights to privacy. The pressure from the State of Illinois became so overwhelming that Johnson decided to move his entire business to California in the middle of the night.

After a year of hearing nothing but silence from Johnson, Greyhound agents tried to contact him – only to be notified that he had passed away unexpectedly. This is a particularly troubling part of the story, since he had been in his early fifties and in robust health. Later, Greyhound learned that shortly before he died, Johnson had inexplicably moved out of his laboratory in the middle of the night and taken all of his motors and technology to California.

Bob Bass, in his report copied below on low-energy nuclear transmutation, claims that the CIA, the KGB and the Mossad, etc. all have "sprays" which can be sprayed upon someone and cause him or her to die of apparently natural causes. One speculation is that Johnson’s death – apparently due to heart failure – had been artificially induced by such a spray.

In a January 20, 2007 email to Gary Vesperman, Terry Sisson reports:

“Hi Gary,

“I visited Magnatron, Inc., in July 1979. I wish I would have taken a photo. Placards were placed over every inch of the large windows in the front of the building listing all of the questions the State of Illinois requested his company to provide. He wrote, “When has the government ever had the right to ask this of any company.” I peeked in the front window and saw one of his motors mounted on an engine stand. Nobody appeared to be there so I walked around to the rear of the building. I found the rear garage door open and could see the Buick Electra inside. I was about to approach nearer when a man emerged. We talked, but he quickly informed me that due to a US gag order he was unable to talk about anything. I managed to get his phone number and called him from time to time for years following. He was an assistant of Rory’s and he kept the information very close to the vest. He did tell me that it was real and it worked, yet not how it worked.

“About 1984, I began to call all the Johnsons in the phone book in Elgin. I finally got a hold of Rory’s son. He too said that it was real, but I got nowhere. Around 1992, I met Jerry Orlowski, and he told me his experience as the employee of Greyhound who was sent to investigate the technology, since he wound electric motors for several years. Jerry was very upset about the whole incident, particularly Greyhound’s Board of Directors refusal to utilize the technology after he found the technology to be authentic. Jerry even witnessed the government’s seizure of the motors in California. --- Terry Sisson.”

Hydro-Magnetic Dynamo

The hydro-magnetic dynamo is a doughnut-shaped large-scale emission-free electrical generator which does not require external fueling and operates safely, reliably and silently at moderate temperatures. The dynamo is capable of powering larger transportation vehicles such as buses, trucks, ships, locomotives, and airplanes. Doubt remains about making dynamos compact enough to power automobiles.

The circumstantial evidence for the Russian inventor’s performance claims for his hydro-magnetic dynamo is reasonably strong. While three experimental prototypes have been built with Russian and Armenian expertise and equipment, a fourth demonstration prototype needs to be built with more modern Western engineering expertise and equipment to verify dynamo performance claims and to further explore the dynamo’s potential capabilities. Performance claims are as follows:

Hydro-magnetic dynamos are scalable from 100 kilowatts to 1,000 megawatts. One doughnut-shaped, fuel-less 1000-megawatt dynamo is about the size of a two-car garage. For comparison, Hoover Dam’s 17 generators have a total nameplate capacity of 2,080 megawatts. Seven 1000-megawatt dynamos can be vertically stacked to comprise a single 7000-megawatt dynamo.

A dynamo can reliably run continuously for 25 years or more with little or no maintenance, no external fuel source, and no pollution. If a dynamo’s output is 1,000,000 watts, its total input power is approximately 10,000 watts. So the dynamo’s energy efficiency is 10,000%, or 100 to 1.

The source of the dynamo’s massive electrical output is a nuclear reaction which is not generally known to mainstream science. However, it is known that the dynamo produces alpha particles which are helium nuclei made from fused deuterium, an isotope of hydrogen with one proton and one neutron. The electrons missing from the helium nuclei are what seem to provide a copious “sink” of electricity, and which happen to be the secret to the dynamo’s ability to generate an exceptionally large amount of electricity.

It is also known that the dynamo uses high-density charge clusters. High-density charge clusters are the basis of plasma-injected transmutation of elements and also neutralization of radioactive materials.

There were three dynamo prototypes built. The first two small experimental prototypes were built in Vladivostok. The third and last prototype continuously generated electricity, except when turned off to incorporate improvements, from 1992 to January 1997 in Armenia. (It was sadly destroyed during an armed rebellion by local religious fanatics who were unhappy with the Armenian government.) It generated a constant current of 6,800 amperes at 220 volts DC. That multiplies out to nearly 1.5 megawatts. The Armenian prototype dynamo's toroid weighed 900 kilograms and had a diameter of approximately 2 meters.

Cooling water is circulated through copper pipes wrapped around the toroid. The heat is expelled from the cooling water with a heat exchanger.

After a dynamo is assembled in a factory, the water is literally jump-started (by discharging a large bank of capacitors) to moving around the toroid. The dynamo's controls are temporarily set to generating enough of a modest amount of electricity to sustain itself, even while being transported from the factory to its site. For the Armenian prototype dynamo, two 10-farad capacitor banks (from Russian military radar stations) were used to provide the initial water motion (acceleration and excitation of water). Using a total of 20,000 joules, 100,000 volts with 0.05 amperes of current were applied to the Armenian dynamo for 3 - 5 minutes for starting its generation of electricity.

After these Russian radar capacitors were used to jump-start the Armenian prototype dynamo, a bank of buffer batteries sustained continuous operation when water motion and ionizing occurs. This battery bank contained 8 powerful 12-volt, 150-ampere lead batteries. The Armenian dynamo's sustaining input power was 14,400 watts. The nominal maximum output power is nearly 1,500,000 watts. Once, the output current was accidentally increased to 40,000 amperes for almost a minute. Fortunately, the power was reduced to a safe level before the water started to boil. Internal coils (windings) control water velocity and therefore dynamo power.

The dynamo's production cost is estimated at \$500 per kilowatt which is competitive to nuclear power's capital costs of \$5,000 per kilowatt, windmill capital costs of \$4,000 per kilowatt, etc. A well-run nuclear power plant can generate power for 1.5 cents per kilowatt-hour, coal 1.8 cents, natural gas 3.4 cents, and oil 4.1 cents, on the average. The dynamo's operating cost would be approximately .1 cent per kilowatt-hour with no external fuel needed nor pollution.

Dynamos could replace all nuclear power plants, solar installations, wood-burning furnaces, hydro-electric dams, windmills, fossil-fueled power plants, etc. Satellites, locomotives, heavy trucks, buses, airplanes, and ships are obvious transportation applications. It does not seem that dynamos can be made compact enough to power electric cars although it certainly would be worth trying.

A Forbes article states that PECO (formerly Philadelphia Electric Company), with an income stream to back it up, was able to sell on Wall Street \$4 billion worth of bonds paying 5.8 per cent. A dynamo manufacturer could simply sell bonds to build and operate dynamos at a low interest rate. Dynamo loan payback times may be in the ball park of a half-year to a year, depending on the local electricity market price. As soon as a dynamo is paid for, the revenue from that time on would be almost pure profit.

Once a track record is established by successfully installing a few dynamos, the dynamo company could raise money to build more dynamos by simply selling billions of dollars of bonds instead of stock. So therefore, there wouldn't be any dilution of ownership.

A recent IEEE Spectrum article stated that world demand for electricity increases approximately 500 megawatts every day. To put this in perspective, the equivalent of another Hoover Dam would have to be built every four days to keep up with world electricity increase demands. Or, a dynamo manufacturing company would have to build another 500-megawatt dynamo every single day of the year to keep up with world electricity increase demand in addition to replacing all existing generators fueled by hydro, nuclear, and fossil fuels.

The following is a highly condensed summary of the "Description" of the dynamo's Russian patent IPC H 02 K 44/00 "Method of deriving of electrical energy and organization of Gritskevich's MHD-generator for its realization":

The dynamo is a sealed toroid filled with distilled water with heavy water (deuterium oxide) added. Movement of water inside the closed loop and use of unique properties of water as a polar liquid cause a release of electrical energy as an outcome of a rupture of hydrogen connections. Additional electrical energy is drawn from nuclear reactions and micro-cavitational processes. The liquid gets ionized and moving around the toroid at start-up time by a running magnetic field with the help of stimulating electromagnetic windings.

A layer of segnetoelectrical material covers the internal surfaces of the toroid. 32 electrodes made from a hard-alloy material are inserted into the toroid at equal distances apart. These 32 electrodes are connected to a power supply. Additional stimulation windings are also connected to the power supply.

The partially pre-ionized (on the part of the heavy water) water gets ionized further by the high-voltage discharges by the 32 electrodes. With the help of the stimulation windings, a running magnetic field is created which moves the water in one direction inside the toroid. An electromotive force gets created by the electromagnetic induction in a separate set of windings. During the movement of the water stream free electrons get created, and an additional energy gets emitted because of the water's friction (viscosity) against the layer coated on the inside surface of the toroid, because of electrostatic breakdowns of cavitational-vacuum structures, and because of the ongoing nuclear reaction. 100 times as much electrical energy is generated as required for electrical energy input.

Note that the hydro-magnetic dynamo is always producing electricity once it is manufactured and jump-started at the factory. Whenever a locomotive is parked in sub-freezing weather, its hydro-magnetic dynamo's electricity output would be used to heat the dynamo's containment to prevent its water-filled toroid from freezing.

Whenever a locomotive is parked, its hydro-magnetic dynamo's excess electrical output could be sold to the local power grid.

IPMS Energy Storage/Battery Device

During the summer of 1984, airborne intelligence surveillance teams of the United States Air Force, operating out of specially configured and equipped Boeing 707 airframes (called AWAC's) electronically detected (and then shortly thereafter photographed) bursts of coherent light of

enormous power originating in the vicinity of Dushambe, Turkministan. The bursts of light, a brilliant blue-green color, lasted just a few seconds and were shifted almost to the ultraviolet end of the light spectrum. The “laser” beams were directed upwards out of the atmosphere towards American military communications satellites.

At precisely the same time the AWAC’s detected and photographed the laser bursts (they were referred to in that jargon by American military analysts but later proved to be something almost entirely different), several of the satellites essential to America’s global military command and control communications systems became inexplicably inoperable.

The Defense Intelligence Agency, under the direction of the National Security Council and assisted by the National Security Agency, escalated its surveillance of the remote site in the Ural Mountains from which the bursts first originated. For several months, during a concerted campaign of uninterrupted observation by AWAC’s and American spy satellites, no additional bursts were observed or reported. Then, without warning, in the middle of the night nearly seven months later, AWAC’s crews operating just outside the territorial airspace of Afghanistan detected similar laser bursts of lower intensity during a period of intensive localized ground warfare.

The Afghanistan bursts were apparently aimed at targets under attack by Soviet infantry units. The laser bursts continued in a sustained, localized but obviously mobile attack pattern, as frequently as four or five times per hour, until nearly sunset of the next day. Photographic evidence gathered at the time by the AWAC’s crew, and later corroborated by photographs taken at the actual site of the fire fight and forwarded to the U.S. for analysis, showed that the targets of the laser bursts were ammunition and fuel supply depots located in the remote desert. Several of the ammunition and fuel caches had apparently been destroyed during the attack, as demonstrated by the evidence of explosions, fire, smoke and residual infra-red heat patterns detected, photographed and electronically recorded on-board the AWAC’s.

All this information was transmitted (via encrypted communications bursts, routed through the military Global Command Control satellite system) to the National Security Agency (NSA), located at Fort Meade, Maryland. Analysts there recognized that they were looking at evidence of a weapons system which had never been observed before. They did not know what had produced the laser bursts. But they did know that the technology which made such a thing possible was not available to the countries participating in the NATO Convention. They were terrified at the implications of such a development.

Within hours, the information was packaged into classified documents and conveyed to the Joint Chiefs of Staff. The Joint Chiefs examined the information while they were being briefed by the AWAC’s crews which had witnessed and recorded the events. After the briefing, the crews were dismantled, and their various members stationed far away from one another, with orders never to discuss the events they had witnessed. Officially, the laser bursts never had occurred.

Secretary of Defense Frank Carlucci took delivery of the packet at his residence in Falls Church, Virginia, three days later, at a private, secret meeting held in the middle of the night. No one has yet adequately explained why the Joint Chiefs waited three full days to brief the Secretary. Early the next morning, he was driven in a specially prepared bulletproof limousine to the White House. He personally delivered the information to the new President of the United States, Ronald Reagan. The content of the Secretary’s report had an immediate, measurable impact.

It was this series of events which principally precipitated the Strategic Defense Initiative, a program of military defense and reprisal based on America's state-of-the-art satellite-borne laser-optical and particle accelerator technologies. The S.D.I. system was intended to provide the U.S. with a meaningful deterrent to further aggressive use of the technology developed by the Soviet Military.

There was only one problem with this system, aside from the fact that its astronomical costs almost bankrupted the American economy: it did not work. S.D.I. was designed to respond to a kind of technology which was not achievable in the West, and which could not be explained by any of the models, materials, technologies or sciences known in the West.

In 1985, the top-secret military version of the space shuttle, code named Atlantis, embarked on a special orbital mission. One of its mission assignments was to retrieve, examine or photograph the military spy satellites which had been disabled by the laser bursts recorded in 1979-84. The results of this investigation have not been declassified or released in any but the most censored version to the public. What we do know for certain, as a matter of publicly available non-classified information, however, is that each of the disabled satellites appeared to have had at least one, and in some cases as many as four or five precisely measured holes, approximately the size of an American silver dollar, melted completely through them from the outside.

The photographs taken of the satellites show evidence of intense heat, charring and carbonized residue evenly distributed around the perimeter of each hole. The evidence is clear and unmistakable – the satellites were disabled by a coherent beam of some sort, characterized by such intense energy that it was possible to melt consistently measured holes through the exterior and interior components of American military satellites, after having passed through the atmosphere of the planet and into space for as many as 325 miles. Such a thing has scarcely been dreamed of by the American military, much less put into any but the most nominally effective operational form.

After more than ten years of political, economic and technological wrangling, and after the expenditure of more than one hundred twenty billion dollars in largely ineffectual research and development efforts, it is inescapably clear that no amount of money or political pressure, no amount of geo-political posturing or economic sanctions was going to compel the disclosure or replication of the technologies which produced the results photographed over the Carpathian Mountains and the Afghanistan deserts. The Soviets had developed a weapons system which was so revolutionary that it could not be explained, replicated or defended against.

The Reagan Administration's lack of specificity about the nature of the implied threat to which S.D.I. was supposed to respond subjected the Administration, the Defense Department and the R&D proponents of the most prominent American aerospace corporations to an endless barrage of charges by the Press and the Congress. They were characterized as being disingenuous and accused of being unreasonably secretive during successive appropriations battles in the Congress.

The truth of matter is that the Administration and the Pentagon were not being disingenuous at all. They simply could not admit to the American public that they were attempting to develop an effective response to a weapons system which they did not understand and could not replicate.

There are a number of issues intrinsic to this set of circumstances, along with several dozen others which, though less well known or economically dramatic, are no less important from a technological standpoint. It is certain that the implication of these technologies has not been lost on those multi-national corporations whose entire capital structure may be threatened by the new

sciences, technologies and materials which have been developed in secret laboratories, hidden in caverns excavated beneath the Carpathian Mountains, in the former Soviet Union.

Over the past decade the West has enjoyed occasional gratuitous glimpses into the heart of Soviet science. Attempts to disclose or discuss these developments in the press have been ruthlessly suppressed by powerful special interests vested in both the public and private sectors.

The science which underlies the series of events recounted here remains at the outer limits of the most advanced technology of which the West is capable. The questions posed by the military and corporate analysts about this laser beam weapons system are far-reaching in their scope and implications. Some of them are illustrative:

1) New Model of Quantum Mechanics: The sciences and models of quantum mechanics which produced such stunning recent developments in the West as the laser and maser make quite clear how much energy is required to create a beam of coherent light powerful enough to penetrate the atmosphere, retain its coherence in spite of atmospheric diffraction (and other effects described in quantum mechanics as “thermal blooming”), and melt a two-inch hole clear through a satellite made of the most sophisticated alloys ever produced in the West. Except for limited short-distance demonstrations conducted with industrial grade lasers used in cutting operations, there is no known combination of materials or technologies extant in the West to make such a thing possible.

2) New Materials: The materials necessary to create an electrical charge large enough to power a device capable of producing such a beam certainly do exist. In quantum mechanics the term large enough does not make sense, but we can agree for the purposes of this discussion on the effect of it as represented by such commonly accepted constructs as frequency, voltage, current and ionic flow rates [as distinguished by the phenomenon of resistance].

Hydroelectric plants and large, fixed-base nuclear power plants are capable of producing enough energy to theoretically power such a device. But the energy bursts in both the Carpathians and the Afghan desert were generated by sources which moved from one location to another. In order to do that, several additional considerations must be addressed:

a. Portability: The power source would have to be transportable or be capable of storing sufficient energy to repeatedly power such a device. Western technology cannot produce either a portable power production unit or energy storage system capable of the performance requirements everyone agrees must be met to make the weapons system work, either in the laboratory or in the field. System portability was the most puzzling feature of the NSA/DIA report.

When carefully analyzed, the computer-enhanced enlargements of the photographs taken by the spy satellites and AWAC’s crews failed to provide evidence of any tracks which could be attributed to wheeled or tracked vehicles operating in the precise locations and at the same time as the laser bursts which were observed. The implications of this set of circumstances was almost too much to believe – the devices were apparently either hand held or transportable and rechargeable in such a way as to allow them to be transported by one or more foot soldiers, without vehicular support.

b. Enormous Power Requirement: The materials and technologies used to construct a device capable of generating a beam of such enormous power and magnitude would have to be sufficiently advanced to enable the components to be transported without damage over significant distances in unpaved areas of very rough terrain. Such strategies, engineering techniques, construction technologies or materials do not exist in the Western inventory.

c. The continuous repetition of the laser bursts suggests that the devices can be operated repeatedly at short intervals of 12-15 minutes. This means they can be triggered with significantly higher frequency and intensity than anything which can be produced in the West, even for laboratory use. Industrial strength lasers used to cut metals require careful setup, accommodate only limited use in short bursts, require extensive cooling and must be continually recalibrated. These limitations obviously did not apply to the devices being operated in the Afghan desert. Analysts at AMTL agreed that the units would either have to be recharged via an external, independent device or somehow be capable of self-recharging in the field.

Such a thing is almost unthinkable by current Western military standards. Not only can we still not replicate the technology in any meaningful form, but the Soviets had refined the technology to a point which allowed it to be carried on the shoulders of ordinary foot soldiers and recharged in the field without motorized support.

Unbelievable! How was such a thing possible? According to some of the highly qualified scientists who scrutinized the photographs, it is not possible. The “Not Invented Here” syndrome is alive and well in the American engineering community. Some of them still insist that the pictures were either fabricated or demonstrate something completely different than this narrative suggests.

3) Energy Recharge-Batteries: How did such high-intensity laser beam generators get recharged in the middle of the Afghan desert, in the absence of powered support vehicles or fixed-based power plants? There are a number of possible alternatives. They could have been powered by some sort of advanced battery technology. It’s possible, but if the battery technology used in the West is used as a model to support such a thesis, it would take a bank of the most sophisticated batteries ever designed by NASA, arrayed in series and parallel configurations larger than five full-sized Soviet T-60 tiger tanks to power such a device.

This theoretical battery bank, operating at 100% efficiency (which is not practically or theoretically possible; the best batteries manufactured in the West operate at less than 60% discharge efficiency), could conceivably produce enough direct current voltage (in a zero resistance super conductive circuit, which is not possible, either) to perhaps produce one burst of light equal in intensity to 20% of the power required to burn a 2-inch hole through a satellite moving at 20,000 miles per hour at a distance of 325 miles.

Soviet ground forces were generating bursts of this magnitude every 12-15 minutes for more than 10 hours with nothing but ground troops. During eight hours of this exchange, it was totally dark. Something pretty remarkable must have been going on to make such a thing possible.

4) Energy Recharge – Solar Cells: Another alternative would have been to have whatever energy storage devices were being used to power the “laser cannons” recharged by sunlight. The state-of-the-art in photo-voltaic cells produced in the West simply would not support such an undertaking. The very best solar cells ever produced in the West have been produced by the Japanese.

These cells operate at a maximum of 19% efficiency - that is, they convert as much as 19% of the ambient visible sunlight shining on a clear, cloudless day into ion flow, which then becomes low voltage direct electrical current flowing through a circuit. The Japanese panels require months per section to manufacture and literally cost more than their weight in gold to manufacture. They are very heavy and are so sensitive to vibration and calibration that once installed, they cannot be moved at all.

Photo-voltaic cells capable of providing enough electricity to recharge a theoretically infinite energy well would have to operate at efficiencies of 50-80% to recharge batteries of infinite electrical capacity with enough power to trigger such a device. Such cells would have to be very light weight and able to withstand extremes of heat, cold, vibration, dust, wind and other conditions encountered in a hostile battlefield environment. Nothing like that exists in the Western technological arsenal.

5) Dielectric Materials – Transformers and Capacitors: Another consideration must be reconciled before this issue can be theoretically put to rest. In order to produce a burst of coherent light of sufficient intensity to have the effect which was observed and recorded by the surveillance teams, the voltage and amperage required to support such a device would have to be staggeringly high. In order to operate at all, the voltage supplied to the system must be released all at once, not in a continuous stream but in a single coherent burst so intense that any materials known in the West would either evaporate or melt. Not only would the best dielectric materials known to Western Science melt because of the heat produced by such enormous energy bursts, but before a bolt of energy of this magnitude could even be released to such a device, it would have to be accumulated and stored somehow.

A similar set of requirements of a less dramatic type is present in all the electronic devices manufactured and marketed in the West. This includes the entire range of electronic devices such as VCR's, computers, televisions and sound components, telecommunications, information storage, transmission and retrieval systems of every kind. We could not live as we do without them. The components which convert, store and release ion flow into the circuitry of these devices are known as transistors, transformers and capacitors.

This discussion delves into a slightly technical area here, so non-scientific types will need to either become familiar with the fundamentals of electricity to understand what is meant or simply give it a possibility that what is developed in the next section is a true representation of the way such things actually operate. The discussion deals with such commonly used and seldom understood concepts as voltage, current, frequencies and resistance.

(a) Transformers convert voltage at one level of current (amperage) to either higher or lower voltage levels. When the voltage is increased, the amperage or current is proportionately decreased. A low voltage produced at a high current level can be transformed into a much higher voltage at a proportionately lower level of current or "power."

(b) Capacitors: The decrease in amperage which accompanies a transformation of low voltage to higher voltage is often compensated for by a device known as a capacitor. In the most simplistic terms, capacitors "store" electrical energy until the amount of voltage and current reach a certain minimal threshold. When that point is reached, the entire store of energy is released all at once in a single burst.

The tantalum materials used in the West to manufacture such devices conform to certain standard rules which are commonly accepted by electrical engineers. These rules have only recently been stretched by new technologies and materials developed in the West. For the purposes of this discussion, though, it is safe to say that electrical engineers have long relied on these rules because they have always produced the same results when applied in the same way. Here's an example.

It is standard engineering fare which dictates that a transformer capable of accommodating one volt at one ampere of current across a grid of one ohm of resistance will be one cubic meter in

dimension. If followed to its logical conclusion, this standard rule of electrical engineering would require that a transformer capable of supporting a laser burst device of the kind operated by the Soviet ground forces in the Afghan desert would have to be approximately the size of a building built on a base 100 feet to a side, nearly 150 feet high.

Surely such a device could not have been hidden from the AWAC's eye in the sky which can clearly photograph the letters on a license plate from 60,000 feet altitude, nor could it have been moved on the shoulders of ground troops without wheeled vehicular support. The fact that there was absolutely no trace of such a huge, massive transformer device (or any other kind of structure or vehicle which could be construed to serve that purpose) means that something else must have been used instead. Military analysts had absolutely no idea what it could have been.

Such a burst system cannot operate without a capacitor of some sort. A capacitive device capable of storing the amount of energy required to power a single burst from a laser cannon, made of the most advanced dielectric material known in the West, would have to have been equally massive and, further, would have to have been cooled by some sort of strategy which would have been instantly and unmistakably detected by the infrared cameras and spectroscopic scanners used aboard the AWAC's and the spy satellites which investigated the scene.

The practical requirements of such a system are best demonstrated by the massive equipment required to operate and cool the Super Conductor Super Collider linear particle accelerators recently designed by the United States and Japan. No evidence of any such capacitive device was recorded in either the Carpathian Mountains or the Afghanistan desert. How can we explain it?

Without going into any detail about how the technologies were developed, suffice it for now to say that the Soviet ground forces in Afghanistan were equipped with a prototype of a hand-held plasma beam accelerator, the likes of which had only been roughly imagined by American military analysts. The device relied on some innovative strategies. Among these were:

Energy Storage Devices: The power source for the Soviet light cannons was comprised of a back-pack array of specially designed energy storage devices. The closest thing we have in our vocabulary to compare to them is described by the term "battery." In the limited sense that these devices store electrical energy, they are batteries. Any other similarity to the batteries we are accustomed to in the West ends there. The literal translation of the Russian name for them is energy accumulators.

The batteries relied on in the West are based on the chemical properties of components which, when combined in certain configurations and proportions, interact chemically with one another. The result of this chemical interaction is that it creates both heat and a stream of liberated ions – electricity. In dry cell batteries, the process of chemical interaction is one way – once they have been expended, they are simply disposed of. It is estimated that more than 12 billion expended dry cell and lead-acid batteries are dumped into America's landfills every year.

Other batteries are designed and constructed so that the chemical reactions which liberate electrical current are reversible in some degree. These rechargeable cells are characterized by the lead-acid batteries which are used in automobiles and in commercial and industrial applications. Various strategies have been developed to make batteries relying on chemical reactions maximally effective, but the theoretical limits of effectiveness of such devices have surely been reached.

A consortium of aerospace companies working with NASA recently announced the development of an advanced sodium-hydride-based rechargeable cell which is the most efficient battery yet invented in the West. Unfortunately, it operates at an ambient temperature of 2000 degrees centigrade and, if allowed to reach temperatures outside a very narrow safe operating zone, will explode with the force of a small thermo-nuclear device of approximately ten-kiloton yield. It is not safe, but it is the best Western science has come up with.

The energy storage device developed by the I.N. Frantsevich Institute for Problems of Materials Science (IPMS), Kiev, Ukraine, works on a completely different principle. Its construction is the result of a completely unique nonlinear quantum mechanical model which makes it possible to create crystalline lattices of absolutely pure carbon (and other materials) in sheets of infinitely variable dimension which are exactly one molecule thick. The crystal formation techniques and the whole body of new science which allows for their creation in the first place are completely unknown to Western science.

The mono-molecular sheets deposited by this technique are wrapped back and forth on top of each other, more than one million times per millimeter, and are separated from each other by a distance of less than one atomic diameter. At this level of construction, the material becomes subject to the rules of quantum mechanics which are almost entirely probabilistic. That means a whole atom of carbon (or almost anything else except an electron or photon) will not fit in the space which separates the lattice sheets.

When viewed under an electron microscope, the sheets produce a pattern which looks for all the world like an endless field of four-sided pyramids, connected base to base, on a single plane, with the tips of the pyramids protruding endlessly, uniformly upwards. When wrapped back and forth on top of each other, these sheets of pure carbon crystal, made of carbon molecules shaped like trillions of identical tiny pyramids, all arrayed endlessly in identical formation, are positioned so that the tips of the pyramids on the bottom sheet are matched with the tips of the pyramids on the top sheets. What remains between the pyramid tips are open “spaces” or energy wells.

The quantum physics which describes the characteristics of the energy wells created between the layers of crystalline lattice is largely unknown to Western physicists. The Soviet model predicts with a high degree of probability that the quanta of energy referred to in the West as electrons (and, in some cases, photons), the stuff of which electricity is made, will, when introduced to the lattice structure, search, find and fit into the energy wells with military precision.

During the recharging or loading phase, the energy storage devices made of the crystalline lattice material channel one electron at a time into each well created by four carbon pyramids on the bottom layer and four carbon pyramids on the top layer. Because the rules of quantum mechanics which operate in this tiny environment demand it, each electron or quanta of energy has a certain polarity, spin and “color” (and other mathematically defined characteristics) which must be accommodated if it is to find, fit and stay in an energy well. Interestingly enough, when a current is applied across the lattice-work structure, the electrons behave precisely as nonlinear quantum mechanics predicts they will. They flow much like a fluid into the lattice field, then separate into individual energy quanta and spin into the last energy well in each layer, automatically adjusting their individual spin, polarity and color to match their characteristics to fit the requirements of each well, until the lattice is full.

Because no chemical reactions are involved in the process of marching electrons into or out of the energy well fields, there is no resistance in the circuit. In the absence of resistance, the electrons fill

the wells at light speed, never missing a space, automatically adjusting polarity, spin and other characteristics, and creating no heat. The amount of time required to “charge” such a cell is less than 5% of the time required to recharge a conventional chemical battery of similar voltage and current.

The validity of $E = MC^2$ is called into question by the way these devices function. When the battery is fully charged, it actually demonstrates more mass than when the energy storage device is empty or discharged. The laws of quantum mechanics relied on in the West state categorically that this is not possible. It is the answer to the question, “How much does a beam of light weigh?”

According to the Soviet model, this is precisely as it should be. When this phenomenon was first demonstrated to scientists in the West who were testing the energy storage devices at INEEL in Idaho, they were thunderstruck. The quanta of energy, or electrons as we refer to them, which are poured into the crystalline lattice demonstrate characteristics of mass even though they are bundles of pure energy sitting in stasis, literally at rest. The characteristic of mass is verifiable – you can measure it by weighing the energy storage devices before and after they are charged. When they are charged, they demonstrate appreciably more mass than when they are fully discharged.

If this is confusing to you, to suggest that pure energy can be shown to demonstrate verifiable mass while at rest (in stasis), perhaps you can begin to appreciate how fundamentally different the physics of all this is when viewed in the terms of Einstein’s classic equation $E = MC^2$.

The existence of this technology clearly is proof positive that not only does energy demonstrate the characteristics of mass, but it does so in a state of non-motion or stasis, sitting idly in an energy well. A state of stasis is a very far cry from the terminal theoretical velocity required by the constant in Einstein’s equation, equivalent to the square of the speed of light.

The scientific implications of this phenomenon are truly staggering. At very least, the verification of mass as a property of energy quanta at rest suggests that Einstein’s theory of relativity may be altogether incorrect as a means of describing the dynamics underlying the real nature of the material world and its relationship to energy.

The existence of this technology suggests at very least, that energy and mass are equivalent characteristics of all things which are manifest in the material world. It is this fundamental contextual difference which distinguishes the Soviet model of quantum mechanics from the Western model. “The proof of the pudding,” they say, “is in the eating.”

Theoretical physicists may argue endlessly about the validity of the assumptions relied on by the IPMS scientists to develop their unique sciences, technologies and materials. But they cannot argue about the existence of the materials which have arisen from that context. They are as real as they can be. And they are unlike anything ever seen or contemplated in the West.

In the same way energy quanta stored in the energy wells of crystalline lattice materials demonstrate complete mathematical satisfaction with staying there indefinitely, when allowed to flow out in the form of an outgoing wave of electrical discharge, these quanta (electrons or photons, as you prefer) march right back out without resistance at light speed through a closed circuit to another use.

When these energy storage devices are discharged, they demonstrate other attributes which are not known in Western science, and which, because of the very nature of the chemical reactions we are accustomed to, are not theoretically possible according to conventional wisdom. Conventional

chemical batteries, when fully charged, produce electric current at a useable voltage for perhaps 30-40% of the total discharge cycle. After that, either the voltage or amperage (or both) drop to low enough levels that the devices being powered by them cannot recognize or use the electrical current which remains available. At that point, the batteries either have to be recharged or replaced.

The crystal lattice batteries have been demonstrated to produce precisely the same current and voltage levels throughout 98% of their discharge cycle. They produce no heat during discharge, regardless of the rate at which they are discharged. This is absolutely contrary to our experience with batteries, transformers or capacitors. Until the crystalline lattice materials were specifically engineered to register an electronically detectable blip at 95-96% discharge, it was impossible even for the scientists who developed them to distinguish a partially discharged battery from a fully charged one.

There is another characteristic which is intrinsic to energy storage devices which comes into play here. It is a characteristic of materials which is described as energy density. For non-scientific readers, this concept can simply be construed to mean the amount of measurable electrical current which can be produced by any device or material when its mass is converted into electrical energy. The concept is expressed in mathematical formulas as the number of watts and hours of consumable energy which can be converted from each kilogram of material. It is expressed as watt-hours per kilogram.

Here is an example we can all understand. Consider gasoline. When converted into electrical power at 100% efficiency, gasoline has been theoretically shown to have an energy density of between 550 and 600 watt-hours per kilogram of mass. In easy terms, that means that if one kilogram of gasoline were converted into pure electricity at 100% efficiency (with no loss due to heat, resistance, waste, etc.), the reservoir of energy would power a 100-watt light bulb for 5.5 to 6 hours.

Most of the high-end conventional automobile batteries of the lead-acid variety operate at an energy density rate of between 20-25 watt-hours per kilogram. The best NASA sodium-hydride batteries operate at 48-50 watt hours per kilogram. The energy accumulator devices which have been tested at the Idaho National Electronic Laboratories have demonstrated energy densities of between 850 and 1050 watt-hours per kilogram.

What does this mean in practical terms? It means, for one thing, that for the first time in the history of science an energy storage device has been created with an energy density which is greater than gasoline or any other refined fossil fuel. It means that devices which rely on these energy storage technologies can theoretically be designed to store and deliver clean electrical power at higher rates of efficiency than any fossil fuel ever discovered.

The global implications of this technology are irresistible. It means, among other things, that the technology exists, right now, to eliminate the need to build another nuclear power plant or dam another river to produce hydroelectric power. It means we can no longer justify burning another ounce of petroleum, another piece of coal, another cubic centimeter of natural (or unnatural gas) or another tree to produce heat, electricity or power for any purpose, including transportation.

When coupled with the plasma beam devices being tested by the Soviet infantry units in Afghanistan, these energy storage devices operated at such unbelievably high rates of discharge efficiency that they made it possible to repeatedly induce huge electrical discharges in a highly mobile configuration.

The same technologies which were used to produce the energy storage devices have been adapted to create transformers and capacitors with previously unimaginable performance characteristics. Instead of adhering to the conventional western model of “One Volt at One Amp across a resistance of One Ohm equals One Cubic Meter,” the Soviets have produced a capacitor which measures more than 1200 farads at 10,000 amperes in a package the size of a tuna sandwich.

When tested by the Technology Materials Testing Laboratory of the Defense Department at the Pentagon and at the I.N.E.E.L. in Idaho, totally new testing equipment had to be designed, engineered and constructed just to test the devices. The scientists at those laboratories had never tested anything like these materials before.

Instead of having to house transformer and capacitor devices in a series of trailers towed by diesel tractors or huge fixed-base facilities, the operating apparatus which supplied transformed power and high intensity capacitive bursts to the light cannons weighed less than ten pounds and could easily be transported in a backpack by a foot soldier.

One final question remains unanswered. “How did the energy storage devices, once dissipated or discharged, become recharged in the field, especially in the dark of night?”

The back-pack plasma beam device detected by the AWAC’s during limited combat use in the Afghanistan desert was powered by energy storage devices constructed of crystalline lattice materials. After each laser burst, the energy storage devices were recharged every 12-15 minutes (nearly 45 minutes in the dark of night – the residual ambient heat of the desert is a very efficient source of infrared energy) by sunlight, collected and converted to electricity by four-foot square panels of “solar cell” material arrayed on a pole like a flag, each weighing less than ten ounces.

The electrical energy stored in the back-pack energy accumulators was transformed into enormously high voltages and released at almost unbelievably high current levels when the super-capacitors were sufficiently charged. The beam of “light” detected by the AWAC’s crews was a field of plasma, flowing at the speed of light and demonstrating characteristics of mass (and, therefore, kinetic energy). The phenomenon represented by these bolts of lightning are not comprehensible according to the model of quantum mechanics and plasma physics currently being used in the West.

Battery packs utilizing these energy accumulator materials have been designed, produced and tested which provide more than 14 hours of continuously transmitted power on a single charge to conventional hand-held cellular telephone devices. Similar improvements in conventional battery/energy storage capacity have been developed and are being tested for such devices as video camcorders, laptop and portable computers and other similar consumer, commercial, industrial and military applications.

IPMS research in the field of layered crystals has thus led to the creation of capacitors with a very high level of capacitance (measured in farads). This technology is based on a revolutionary production technique which forms polarized surfaces of one molecule thickness, separated by less than one atomic diameter of space, held together by weak Van der Waals energy forces. The special properties created by these layered crystalline structures provide previously unimaginable internal surface areas. Super capacitors are constructed of layered materials numbering more than one million dipole sheets for each millimeter of crystal thickness.

These devices provide a virtually limitless number of charge-discharge cycles at astonishingly rapid charge and discharge rates. The potential impact of such devices on all electronic equipment currently being produced is incalculable, since virtually all electronic devices rely extensively on the West's state-of-the-art tantalum capacitance technologies.

At present, IPMS has on hand (among others) a super-capacitor roughly the size and dimension of a sandwich which develops more than 1,200 farads at 10,000 amperes. It also boasts production of a battery whose active mass energy density exceeds 850 watt-hours per kilogram. For the non-scientist (and all the rest of us as well) this means that a "battery" has been produced which, for the first time in history, produces more power per unit of mass than any fossil fuel ever devised.

Prototype testing of larger-scaled devices designed specifically for providing power to electric vehicles is currently underway. Prototypes are expected to be capable of sustained highway speeds of up to 70 miles per hour with a range of 525 miles on a single charge. The power plant for this application has been recently improved by the inclusion of a proprietary solid-state ceramic electric motor which weighs 7.2 kilograms and produces 100 horsepower on 12-volt direct current. For comparison, an electric vehicle employing a 100-horsepower electric motor performs the same as with a 500-horsepower gasoline engine.

If these performance attainments can be sustained in broad-based applications, electrically powered vehicles could be produced which would meet or exceed virtually all performance characteristics currently available in equipment relying on internal combustion, petroleum-based engines. Gasoline/diesel-powered transportation devices can be replaced by cleaner, more efficient and significantly less expensive alternatives.

The world market for current energy storage applications which will be superseded by these energy storage technologies is estimated to be in excess of \$24 billion per year (1991), exclusive of electric vehicle considerations.

Metamatter

9/25/1997 11:16 AM

From: Robert Bass

To: James Bowery<jabowery@netcom.com>;

CC: Robert W. Bass<rbrtbass@pahrup.com>; Gary Vesperman<vman@skylink.net>;

Subject: for the postulated "Bass page"?

Jim,

I just went to <http://www.generalstore.com/> and see nothing but "under construction, etc." Is this you, or someone else in another state? Do you know how to (reasonably economically) do Mass-eMailings? Say either from a rented Data Base of known Investors, or just blindly to "millions"?

How about posting the following

Potentially Awesome Speculative Investment Opportunity?

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Venture SEED Capital? Low Risk, AWESOME Payback!!!

I seek one or more High-Technology-Oriented "High-Roller" Nerves Investor(s) who would be intrigued by the following proposition (if demonstrably sound and absolutely genuine): Suppose you go to "Super Monte-Carlo" in the sovereign nation of Erewhon, and you come to a table with a Croupier who says:

"I have here a coin the size of a U.S. silver dollar, which is perfectly evenly balanced between Heads and Tails to 10 decimal places [with the edge for Heads in the 11th decimal place]; and a certificate from the US Bureau of Standards certifying it is not "loaded" to favor either Heads or Tails to the best measurements they can make.

"You can flip the coin yourself.

"I have here Certificates of Deposit for \$30 Billion in a centuries-old Swiss Bank of spotless reputation.

"My croupier's fee for allowing you to play is ridiculously modest.

"How much are you willing to wager on the honest flip?

"Now suppose the preceding scenario is repeated, except that several of the most reputable scientists in the world assure you that the coin is 'loaded' so that the chances of Heads are between 95% and 99%. Your own experts assure you that you have at worst One Chance in 20 of losing.

"Finally, the croupier says, you may play for \$150,000."

To recapitulate, the odds are 20-to-1 that you will win \$30 Billion, versus one chance in 20 that your entire \$150,000 wager will be lost.

Would you play?

=====

-----PRIVATE Communication-----

------(NOT a Publication)-----

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I need Seed Capital of \$150,000 under circumstances exactly analagous to those outlined in the Risk/Reward scenario above. If "Heads" comes up, then my patented [Plasmasphere](#) technology can be escalated to a Metamatter technology, where by METAMATTER I mean a solid, *crystallized* fully-ionized plasma.

An ordinary crystal has nuclei spaced apart distances of about 10^{-8} cm, the [Bohr radius](#), because the [electron cloud](#) makes the atoms behave like little billiard balls of the size indicated.

However, in a plasma, the positively-charge nuclei and the electrons are equal in number, but the electrons are not in orbit around individual nuclei; they are "mixed up" as in a plum-pudding. Most plasma physicists will tell you that in order for hydrogen gas to be fully ionized (i.e., all electrons stripped from all nuclei) the temperature of the gas would have to be above 150,000 degrees Kelvin (i.e., 15 times hotter than the surface of the Sun). But this is demonstrably FALSE (both theoretically and experimentally).

If the gas is dense enough, it can be fully ionized at "low" temperatures, e.g. 5000 Kelvins [so-called "pressure ionization"].

Now suppose that the fully ionized low-temperature gas is condensed into the physical state of a liquid metal. I call this a Liquid Metallic Plasmoid (LMP). The characteristic of an LMP is that, like mercury, it keeps a constant volume; unlike a gas, it does not expand to fill all available space (if in a vacuum). The positive nuclei remain on average equidistant, and the electrons circulate around the dynamic lattice as in a giant crystalline molecule. Cook called it a "Cryscapade"; whereas others might call it a Liquid Crystal.

Fewer than a score people in the world understand that LMPs can exist. One LMP was photographed in half a dozen or so photos on the cover of the [Journal of Applied Physics](#) in 1957 by [later] Nitro-Nobel Medalist, physical chemist, Dr. Melvin Cook. The theory by which Cook explained his accidental discovery has been *independently* rediscovered (in 3 separate countries, USA, UK & France) by researchers seeking to explain the illusive natural phenomenon of Ball Lighting.

The late expert on High-Energy Lasers and Shock Tubes, Dr. Jay Blauer of Rockwell Rocketdyne, who died early of [leukemia](#), helped me to design an experiment that would prove beyond shadow of a doubt that LMPs can be created at will. The basic idea is to use a combination of Shock Tube technology and High-Energy Laser technology, with my patented Plasmasphere technology, in order to achieve in a non-self-destructive, reusable device, what Cook discovered accidentally with high-explosives in a self-destructive experiment.

Once the mere EXISTENCE of producible-at-will LMPs is achieved (for the Risk Capital of \$150K), it will be trivially easy to raise several million more for refinement of the device to move the LMP into a cryogenic [vacuum chamber](#) where (since it is electrically conductive) it can be magnetically levitated and allowed to cool by radiation.

Use of the Brush-Sahlin-Teller [Equation of State](#) (used to design the H-bomb) shows that as the LMP cools, its volume contracts, and it becomes more and more dense. There can be shown to scientists sufficiently expert to understand the evidence, a mass of recent experimental evidence (as well as expert theoretical evidence) that before the LMP gets down to room temperature it will crystallize into a Metastable Solid Crystal, namely a *new form of matter* never seen before on Earth!!!

The density will be intermediate between that of ordinary condensed matter and that of [neutron stars](#), wherein a teaspoonful weighs tons.

I propose to manufacture 3 kinds of Micro-Crystals of Metamatter: MSP, MSD, and MSD. Each addresses in a truly *revolutionary* way a trillion-dollar market, with a multi-billion dollar profit potential. In many ways, Metamatter will have a bigger impact on human civilization than any prior discovery, including both computers and atomic energy! In fact, consider the following:

MSP (Meta-Stable Protium [hydrogen]) will be the IDEAL room-temperature [Superconductor](#), which will revolutionized both the Computer/Electronics industry and the Electric Power industry.

MSD (Meta-Stable [Deuterium](#) [heavy-hydrogen]) will be the ideal 5th [Generation Cold Fusion fuel](#); when triggered by an infra-red photon of 17.7 eV, a micro-pellet will undergo a phonon-mediated and Lattice-Catalyzed ANEUTRONIC chain-fusion reaction to cleanly release the energy of 10

sticks of dynamite, to make steam for mechanical heat and conversion at 67% efficiency into electrical energy. This can make both homes and automobiles independent of the present electrical utility companies, though they will still need to buy the almost dirt-cheap MSD fuel micro-pellets from Metamatter Industries.

MSH (Meta-Stable Helium) will be the IDEAL [rocket propellant](#) for expanding human civilization into the [Solar System](#) (e.g. to colonize Mars); when a micro-crystal of MSH is triggered by the right frequency of laser-light, it will return to the form of gas as if it had been compressed by tens of millions of atmospheres of pressure; it will release 43 times more energy per unit weight than any conceivable chemical combination!

During the mid 1980s, the [Air Force Systems Command](#) sent a group of 7 or 8 Colonels who held Doctorates in the physical or engineering sciences to scour the USA for 9 months, in groups of 2 or 3, and to report back on what futuristic technology would have the greatest potential impact on the [USAF](#) and USA economy by the year 2000 if reduced to actual practice. They listened to 600 industrial and academic presentations and selected MSH as the greatest payoff (for least risk) choice! The USAF Rocket Propulsion Lab was supposed to issue 8 parallel contracts for 8 "crash" projects to see if bulk MSH could be manufactured. I was slated to get one of the 8 contracts, but my approach (through solidifying a helium LMP) was radically different from that of the other 7 selected proposers.

With MSH as fuel, one could take a 50 percent payload to Mars and back in two weeks! (Accelerate there and return at one gee.)

But a Princeton professor of Physics, Will Happer, then Secretary of the JASONS [advisers to DOD/DOE], advanced theoretical arguments which appeared to shoot down the practicality of the other 7 approaches, and the whole project was canceled. But Happer's arguments are totally irrelevant to my approach. Moreover, Happer was later Chief Scientific Advisor to [Admiral Watkins](#) (Secretary of DOE) when the ERAB Report was produced.

Those who understand the recent work of Arata and Zhang in which the aneutronic conversion of deuterium nuclei to helium nuclei inside of a palladium lattice is recorded in Real Time (inside of a sealed apparatus which contains a Mass-Spectrometer and which give ZERO helium when the heavy-water deuterium is replaced by ordinary-water hydrogen) know that Aneutronic [Cold Fusion](#) (CF) is a demonstrable FACT and that Happer and the ERAB Report were WRONG. Therefore it is logical to consider the possibility that Happer was also wrong when, before he shot down CF, he also shot down MSH.

There is ZERO risk in producing an LMP; it is just that 99.999% of all scientists are ignorant of Cook's work.

There is a slight technical risk in crystallizing an LMP at room-temperature; conceivably, it will remain liquid until below the temperature of [liquid nitrogen](#), in which case my proposal will have been a failure. But the payoff is so AWESOME, and the chances of failure so tiny, that the risk seems worth taking.

I can supply drawings of the Proof-of-Principle Process Prototype Plasmasphere demonstration designed by Dr. Blauer and myself. Jay Blauer told me that he could do the experiment in his spare time evenings and weekends "in two weeks" using shock-tube and laser equipment already in his lab at [Rocketdyne](#), provided he had \$10,000 cash for items and materials not on hand.

Several "reputable" labs have explained to me that they would not even consider bidding on doing the Bass-Blauer experiment for less than \$100,000. I have personal contacts at 22 government and private labs (such as JPL, SRI, LANL, etc.) which I would like to visit with my former graduate student Dr. Lou Puls (who, unlike me, is an accomplished experimental plasma physicist) to make joint presentations on the theoretical and experimental aspects of creation of an LMP, preparatory to asking them to bid. After 22 weeks spent in such visits, (and paying Dr. Puls Consulting Fees) I expect to have \$50,000 left to offer the Highest Bidder. I also expect that no one will bid less than \$100,000. But I also expect that out of the 22 presentations, at least several will become so excited that they will offer to Cost Share. In several labs, the working-level scientists interested in LMPs have told me, "If you can get the Management to pay attention, we have in place already a mechanism and a precedent to Cost Share."

Remembering what happened to Fleischmann and Pons it will accomplish naught for me to take the \$150K, rent the equipment, and do it in my own garage. Nobody will believe it, and nobody will pay any attention. However, if we spend 6 months getting suitable technical personnel of nationally reputable laboratories excited about the subject of LMPs, and then some lab with the prestige of, say, JPL or LANL or SRI, announces the production of an LMP, many other labs will immediately undertake to "catch up" and to replicate the result at their own expense. Once 3 or 4 labs have announced successful replication, no one will doubt and then it will be trivially easy to raise the venture capital to go from LMPs to solid, crystallized Metamatter micro-crystals of MSP, MSD, and MSH.

I can supply a large amount of written technical material to anyone who is interested in raising the \$150,000 seed capital required to get Metamatter Industries off the ground (and for me to file the pioneering Patent Applications, and since I am now licensed to practice Intellectual Property Law before the PTO I can do it myself at no extra expense – as did the physicist/patent-attorney who invented the Xerox process).

This will be BETTER than getting in on the ground floor of Xerox or Polaroid or [Microsoft](#)!

Sincerely,

Robert W. Bass, M.A. Oxon, Ph.D.
Dr. Robert W. Bass, Registered Patent Agent 29,130 [ex-Prof Physics]
Inventor: Topolotron, Plasmasphere, issued; QRT Cold Fusion, pending
P.O.Box 1238, Pahrump, NV 89041-1238; phone/FAX (702) 751-0932/0739
Voice-Mail: (702) 387-7213 e-Mail: rbrtbass@pahrump.com

=====
XXX.YYY
XXX Venture Partners

Dear XXX,
Have you got your _____ Fund off the ground yet? Did you receive the Proposal I sent you last week?

Do you agree that the logic of the Analogy I used for the proposed Low-Risk, AWESOME Payoff, "Proof-of-Principle" (POP) [Experiment](#) is sound? If a rational Investor were convinced (e.g. by the photos published by Nitro-Nobel Medalist, Melvin Cook) that it is possible to put a plasma in the state of liquid metal (Liquid Metallic Plasmoids, or LMPs), and that the ONLY risk is that when cooled to room temperature they will not yet crystallize [but won't crystallize until down below, e.g.. the temperature of liquid nitrogen], which risk will be taken by OPM [[Other People's Money](#)] when the scientific community realizes that LMPs can be created at will, and that there is ZERO risk in performing the proof-of-principle demonstration experiment to convince them of this fact, and that this can be done for as little as \$150,000 (which will also permit Patent Applications ensuring the inside track when LMPs get crystallized), don't you agree that the Reward to Risk Ratio of $\$3 \times 10^{10} / \$1.5 \times 10^5 = 2 \times 10^5$ multiplied by the probability of crystallization at room temperature (which is supported by hundreds of theoretical papers on MSH and at least one recent paper in Physical Review Letters on MSP, as much, much better than 50%), namely an EXPECTED REWARD/RISK RATIO of more than 100,000-to-1 implies that this Proposal is "better" than any proposal made in this field yet, when you note that each of the 3 main products to be manufactured from crystallized LMPs, namely MSP, MSD, and MSH, EACH separately addresses a different Trillion-Dollar Market with a clear Profit Potential of more than \$10 Billion?

Moreover, this is a Proposal in which the Investor who RISKS \$150K will know within a mere 6 or 7 months WHETHER OR NOT Phase One of his speculation has paid off! (And it is highly likely that the Absolute Answer will be known within another 3 months, considering how fast the scientific community reacts to something, e.g. High-Temperature Superconductors, which is both surprising and EASY to replicate!)

Please tell me when a Speculative Investment Possibility better than this one has last crossed your desk? (I'll bet, NEVER!)

Regards,

Bob Bass

Dr. Robert W. Bass, Registered Patent Agent 29,130 [ex-Prof Physics]
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Electrino Fusion Power Reactor

Gordon L. Ziegler has discovered how to make a clean electrino fusion power reactor capable of generating up to a net of 1880 megawatts of DC electricity. The proposed energy source would produce no carbon emissions and no radioactive wastes. (By reversing the order-to-disorder arrow in the second law of thermodynamics, a \$50,000,000 electrino fusion power reactor could be built which would also reverse all aging, disease, and decay processes within a one-mile radius.)

Power output, however, cannot occur in this system without the simultaneous operation of two aspects of the invention. One is an accelerator-collider making a field reversing the order-to-disorder arrow in the second law of thermodynamics in a controlled area. Among other things, that field makes the other aspect of the system (the power source) efficient enough to be self-sustaining and prevents the formation of radioactive wastes.

Electrons are generally regarded to be structure-less spinning point charges. But that contradicts a reasonable postulate that occurred to Gordon L. Ziegler in 1967: "A spherically or cylindrically symmetric smooth charge distribution cannot have detectable spin." Electrons have detectable spins. Therefore they must not have smooth structure-less symmetric charge distributions. They must be lumpy and have internal structure. An application of the Parsimony Principle shows that they must be composed of two half-charges orbiting each other at the speed of light. The reason scientists concluded that the electron was structure-less was that it could not be blasted apart in collisions up to 700 MeV each particle.

But in Ziegler's model, electron sub-particles are bound together by confinement by a speed of light barrier (they are trapped going faster than the speed of light). They cannot be blasted apart, even though they are two particles.

The two sub-particles of electrons make a whole different structure for matter than quarks and leptons. The sub-particles can also fuse with each other – making new particles. Fusing sub-particles of positrons reverses the order-to-disorder arrow in the second law of thermodynamics – making the power source efficient enough to be self-sustaining and preventing the radioactive wastes from forming. Fusing the sub-particles of electrons comprise the power source.

Key components include a polarized positron source, injector accelerators, inflection magnets, end magnets, and the beam transport.

Governments and utilities would buy electrino fusion power reactors because the process is a clean, inexpensive way to produce electricity. It is 1000 times as efficient as nuclear reactors. It does not require uranium or plutonium for fuel. It can run on anything for fuel such as dirt, sand, sewage, ground garbage, toxic chemicals, radioactive wastes, sea water, etc. without carbon nor radioactive pollutants.

Assume that the collision energy were 940 MeV to avoid unwanted heat (operate at room temperature), and the current in each beam was 1.0 ampere of electrons. The energy investment into the electrino fusion would be 1880 megawatts. The energy released in annihilation photons would be 3760 megawatts. Recoverable net power would be 1880 megawatts or less.

The collision energy of the linear accelerator would be 940 MeV (each particle – 1880 MeV in the center of mass frame). The current in each beam would be 1.0 amperes of electrons. There would be two beams 180 degrees from each other.

The energy released in annihilation photons would be 3760 megawatts. "Annihilation photons" are the 940 MeV X-Rays produced when a negatron annihilates a proton. These X-rays are converted to electricity by order-to-disorder arrow reversed photo-voltaic cells with nearly 100% efficiency.

In summary the 3760 megawatts output of annihilation photons would be converted to electricity. However, in order to keep the electrino fusion reaction going, 1880 megawatts would be taken from the 3760 megawatts to power the linear accelerator. The net energy output would thus be 1880 megawatts-electric.

The size of an electrino fusion reactor would be about 80' x 10' x 10'. The fuel is whatever brass or copper James M. Potter uses in constructing the walls of his linear accelerators. James M. Potter, Ph.D., is President, JP Accelerator Works, Inc., 2245 47th Street, Los Alamos, NM 87544, 505-690-8701 or 888-301-2833 or 505-661-8155, jpotter@jpaw.com, <http://www.jpaw.com>. 155 lbs of

brass would be consumed over 100 years before shutdown for refueling. The linear accelerator would be a standard commercially available model. It would not need to be customized for an electrino fusion reactor.

The smallest electrino fusion reactor that would be possible to build is now about 80' x 10' x 10'. It may eventually be the size of a filing cabinet.

The projected cost of the first 1880-megawatt electrino fusion reactor is approximately \$100 million. This clean source of electricity could be built in two years, and the necessary Refresher built in one year. Electricity could be generated for only about 1.5 percent of current rates (a little over 0.1 cent per kwh). Subsequent clean energy sources can be built for \$37.5 million each.

The 1880 megawatts (net) of electricity generated by an electrino fusion power reactor would be Direct Current (DC). A utility would need thick wires and the biggest busbars and transformers on the planet. Conversion from DC to Alternating Current (AC) would require the world's largest inverters.

The electrino fusion reactor requires the Refresher to be self-sustaining. But the Refresher has several positive medical side effects due to reversing the order-to-disorder arrow that cannot be eliminated – in a controlled area reverse adult aging and wipe out diseases.

Refresher 1 Design Specifications

Size of accelerator	20 meters long by 3 meters wide
Diameter of channels	4 cm (maybe a little more to allow for water cooling channels)
Type of accelerator	Folded linear accelerator with pulsed klystron RF power supplies and S-band cavities (2856 MHz)
RF power supplies	Eight 35 to 50-megawatt pulsed klystrons
duty factor	0.1% (peak current 1000 times average current)
Average power	400 kW (20 kW per meter of accelerator)
klystron efficiency	~50%
total system power	800 kW
cooling water requirement for each 5 m section	5 to 10 gpm

cooling water required by each klystron	~ 5 gpm
cooling towers capacity	800 kW
Cost:	
Linear accelerator	\$12 million
Klystrons	\$ 8 million
Klystron power supplies and cooling towers	\$ 2 million
Magnets and their power supplies	\$ 2 million
System with controls	\$ 8 million
10% contingency	\$ 3.2 million
Builder's cost	\$35.2 million
Other budgeted items	\$14.8 million
Total budgeted	\$50 million
Creation time total	3 years
Design time (beam dynamics, rf power systems, cooling, and computer control)	1 year
Fabrication and subassembly testing	18 months
Installation and commissioning	6 months

(The following chapter is taken from *Formulating the Universe*, Volume II, by Gordon Ziegler, Chapter 7. Copyrighted by Benevolent Enterprises 2004. Used with permission.)

Chapter 7

SECOND LAW OF THERMODYNAMICS

A. Introduction

Everything goes from a state of order to more disorder. Brand new automobiles wear out and rust. Objects break or are damaged. A thermos bottle falls off the counter, and the inner glass bottle is shattered. We do not expect the shattered bottle to fall back up to the counter and become whole again. There is a one-way arrow for the events to transpire. That arrow is the Second Law of Thermodynamics.

Houses grow old and fall into decay. Barns fall down. Fruit spoils, people and animals grow old and die. Viruses mutate. People become ill and die. Crime and disorder in society increase. Homes break up. Aborted fetuses disintegrate. Dead people and things decompose. All of these negative occurrences are the outworking of the second law of thermodynamics – that part of which is an arrow making everything go from order to disorder.

Let us consider what other people have written about the second law of thermodynamics.

"Second law of thermodynamics

"An equilibrium macrostate of a system can be characterized by a quantity S (called entropy) which has the following properties:

"(i) In any infinitesimal quasi-static process in which the system absorbs heat dQ , its entropy changes by an amount

$$dS = \frac{dQ}{T} \quad (7-1)$$

where T is a parameter characteristic of the macrostate of the system and is called its *absolute temperature*.

"(ii) In any process in which a thermally isolated system changes from one macrostate to another, its entropy tends to increase, i.e.,

$$\Delta S \geq 0. \quad (7-2)$$

"The relation (7-1) is important because it allows one to determine entropy *differences* by measurements of absorbed heat and because it serves to characterize the absolute temperature T of a system. The relation (7-2) is significant because it specifies the direction in which nonequilibrium situations tend to proceed."¹

The above expression of the second law of thermodynamics is regarding entropy and heat. Other writers include the order-to-disorder arrow in the second law of thermodynamics.

"It is a matter of common experience that disorder will tend to increase if things are left to themselves. (One has only to stop making repairs around the house to see that!) One can create order out of disorder (for example, one can paint the house), but that requires expenditure of effort or energy and so decreases the amount of ordered energy available.

"A precise statement of this idea is known as the second law of thermodynamics. It states that the entropy of an isolated system always increases, and that when two systems are joined together, the entropy of the combined system is greater than the sum of the entropies of the individual systems. For example, consider a system of gas molecules in a box. The higher the temperature of the gas, the faster the molecules move, and so the more frequently and harder they collide with the walls of the box and the greater the outward pressure they exert on the walls. Suppose that initially the molecules are all confined to the left-hand side of the box by a partition. If the partition is then removed, the molecules will tend to spread out and occupy both halves of the box. At some later time they could, by chance, all be in the right half or back in the left half, but it is overwhelmingly more probable that there will be roughly equal numbers in the two halves. Such a state is less ordered, or more disordered, than the original state in which all the molecules were in one half. One therefore says that the entropy of the gas has gone up. Similarly, suppose one starts with two boxes, one containing oxygen molecules and the other containing nitrogen molecules. If one joins the boxes together and removes the intervening wall, the oxygen and nitrogen molecules will start to mix. At a later time the most probable state would be a fairly uniform mixture of oxygen and nitrogen molecules throughout the two boxes. This state would be less ordered, and hence have more entropy, than the initial state of two separate boxes."²

"The explanation that is usually given as to why we don't see broken cups gathering themselves together off the floor and jumping back onto the table is that it is forbidden by the second law of thermodynamics. This says that in any closed system disorder, or entropy, always increases with

time. In other words, it is a form of Murphy's law: Things always tend to go wrong! An intact cup on the table is a state of high order, but a broken cup on the floor is a disordered state. One can go readily from the cup on the table in the past to the broken cup on the floor in the future, but not the other way round.

"The increase of disorder or entropy with time is one example of what is called an arrow of time, something that distinguishes the past from the future, giving a direction to time."³

B. Electrino Model and 2nd Law

The natural tendency of leptons in beta decay is that the parent lepton combines with one or more gravitons to produce more particles. In all natural reactions, the order energy of the resultant particles is less than or equal to the order energy of the original particles.

1. Negative Energies. Let us consider antimatter more carefully. "In the Dirac theory also, *the permissible energy values for a free particle range from $+mc^2$ to $+4$ and from $-mc^2$ to -4* . The first of these results is of course just what we expect for a free particle – that its total energy can have any value greater than its rest energy. But the second result is quite puzzling, since it implies the existence of states of *negative total energy*."⁴ Anderson in 1932 discovered positrons in cosmic radiation. These were regarded as Dirac's negative energy particles. "The first two solutions of the Dirac equation . . . clearly describe a free electron of energy E and momentum \mathbf{p} . The two negative energy electron solutions . . . are to be associated with the antiparticle, the positron."⁵

However, in the annihilation it is not $(+mc^2) + (-mc^2) = 0$, but $2mc^2$ is the result of annihilation.⁶ There is something strange going on with the minus signs in these equations. The calculations are inconsistent.

Maybe there are two kinds of energy considered. One we can call entropy energy E_s . In the annihilation reaction, $\# +mc^2\# + \# -mc^2\# = 2mc^2$. Entropy energy is the higher value. The other energy is order energy E_o . In order energy the same reaction is $(+mc^2) + (-mc^2) = 0$.

Let us consider entropy energy and order energy for particle decay schemes. There are a few decay schemes where no negative order energy (anti-matter) is introduced in the right hand side of the decay schemes. In those few instances, the final order energy is equal to the initial order energy (when kinetic energy is taken into account). But in most cases, a trace of negative order energy (anti-matter) is introduced into the right side of the decay schemes. There is nothing on the left hand sides of the decay schemes to correspond to this addition of a trace of negative order energy on the right sides of the decay schemes. Therefore, total order energy is less on the right hand sides of the decay schemes than on the left hand sides (if only by a trace). A few decay schemes introduce a lot of antimatter (as K^-) on the right side of the decay scheme. The loss of order energy in the systems is greater in those cases. But in every case, for all natural processes, the order energy final is \leq the order energy initial, or

$$\Delta E_o \leq 0. \quad (7-3)$$

Let us check the order energy for electron electrino fusion reactions. Electrons made energetic by acceleration (as heavy as protons) fuse and form anti-protons. Matter is converted to anti-matter. Entropy energy is conserved, but not so order energy. Order energy is reduced in the extreme from +938 MeV to -938 MeV or more for each electron fused (two electrons are fused in each reaction).

The order-to-disorder arrow for electron electrino fusion points in the usual direction. The system does obey the second law of thermodynamics.

2. Reversing the Order-to-Disorder Arrow. What would happen if we fused the electrino constituents of positrons instead of the electrino constituents of electrons? Entropy energy E_S would again be conserved. Entropy would be increased. However, order energy E_O would go from $-2 \times 938 \text{ MeV}$ to $+2 \times 938 \text{ MeV}$ – from disorder to order. The order-to-disorder arrow would be reversed. This would be a reaction that would be prohibited by the second law of thermodynamics – unless the strong gravitational force that fuses the anti-semions would be stronger than the second law of thermodynamics (which otherwise governs weak interactions). The stronger of the strong gravitational force and the second law of thermodynamics should be determined by experiment. More rides on that one experiment than perhaps on any one other experiment in this generation. If it is found that strong gravity is stronger than the second law of thermodynamics, then order can be restored at first in a small area, and then for the whole earth.

Here we see that the entropy arrow of time and the order-to-disorder arrow of time are separate and distinct, and are not one and the same thing. While all the reactions the author has studied increase entropy, the fusion of positron anti-semions reverses the order-to-disorder arrow, making more order out of the disorder.

Positron constituent electrino fusion might not only take the electrinos from disorder to order. It could make other physical processes in a local area go from disorder to order. The positron fusion not only violates the second law of thermodynamics, it reverses the order-to-disorder arrow of that law in a local area, making other processes in that area reverse. Let us consider that process more to see how it might be regulated.

We guess the desired relationships for reversing the order-to-disorder arrow in the second law of thermodynamics through dimensional analysis. We want to solve for r , the maximum radius in which the reversed law would be effective. There is a way we can obtain a length from combinations of our variables and constants. That way is in the right hand side of Eq. (7-4). The whole expression is the thermodynamic relation we are seeking. The thermodynamic relation is:

$$(\Delta E_o)_t > 0 \text{ where } r < \frac{(\Delta E_o)_1 c}{ik}, \quad (7-4)$$

where E_o is the order energy – the positive or negative energy in the pair production of particles; ΔE_o is the change in the order energy, where $(\Delta E_o)_t$ is the change in the total order energy of the system, and where $(\Delta E_o)_1$ is the change in the order energy for a single source reaction – for a positron fusion reaction it is approximately $2 \times 10^9 \text{ eV/collision} \times 1.6 \times 10^{-19} \text{ joules/eV} = 3.2 \times 10^{-10} \text{ joules/collision}$; c is the speed of light – approximately $3.0 \times 10^8 \text{ m/s}$; we shall solve for the effected radius r ; i is the beam current in each beam in Coulombs per second (we will solve for 10^{-11}); k is the ratio of particle energy to particle charge. This energy per charge is the accelerated energy of the particle (roughly $1 \times 10^9 \text{ ev times } 1.6 \times 10^{-19} \text{ joules/ev} = 1.6 \times 10^{-10} \text{ joules}$) divided by the charge of each positron ($q = 1.6 \times 10^{-19} \text{ coulombs}$), which equals $10^9 \text{ joules per coulomb}$. The collision efficiency eff is not needed in this equation, because the result is not in particles, but is already in collisions.

Incredibly, the lower the current, the bigger is the radius of the affected area. The greater the current, the smaller is the radius of the effected area. With 10^{-11} A beam currents, the effected

radius r solves for 9.6 meters – roughly 10 meters, which describes a small area – less than a tenth of an acre.

To get an idea of the positron beam currents needed to reverse the order-to-disorder arrow of the second law of thermodynamics in what size of affected radius, see Table 7-1 below.

For an area the size of	r	beam current
House	10 m	10 pA
four football fields	100 m	1 pA
community	1 km	100 fA
city	10 km	10 fA
Israel	160 km	0.6 fA
U.S.	2,400 km	0.04 fA
World	13,000 km	0.008 fA
Sun	1.7E11 m	6E-22 A

Table 7-1. Beam currents versus affected radius for reversal of the order-to-disorder arrow of the second law of thermodynamics.

We must make sure that reversing the second law will do only good and not evil before we flip the switch. Inspired evidences will be studied in the next chapter on a wide range of phenomena affected by reversing the order-to-disorder arrow in the second law of thermodynamics.

¹F. Reif, *Statistical Physics*, Berkeley Physics Course--Volume 5 (New York: McGraw-Hill Book Company, 1967), p. 283.

²Stephen Hawking, *A Brief History of Time--From the Big Bang to Black Holes* (New York: Bantam Books, 1988), pp. 102, 103.

³*Ibid.*, pp. 144, 145.

⁴Robert B. Leighton, *Principles of Modern Physics* (New York: McGraw-Hill Book Company, Inc, 1959), p. 665.

⁵Francis Halzen, Alan D. Martin, *Quarks and Leptons* (New York: John Wiley & Sons, 1984), p. 107.

⁶David S. Saxon, *Elementary Quantum Mechanics* (San Francisco: Holden-Day, 1968), p. 386.

(End of Chapter 7)

EXECUTIVE SUMMARY OF BUSINESS PLAN

electrino energy is a new company formed to develop the inventions envisioned by the new model of physics—the electrino fusion model of elementary particles. Our company provides theoretical work and guidance to licensees. Our focus is the reverser of aging, disease, and decay processes (Refresher 1) and whatever else we must do to fund the Refresher 1.

electrino energy was formed October 12, 2005 as an invention development and theorist service specializing in four high-technology inventions – inertia-less craft; artificial gravities; reverser of aging, disease, and decay processes; and electrino fusion reactors generating electricity. All four inventions have potentially extremely high value. But all four inventions currently have three principle difficulties: 1) they are unbelievable by almost all persons – including agency heads, venture capitalists, congressmen and senators; 2) almost all of them cost scores of millions of dollars to develop; and 3) **electrino energy** has no money to develop them. With no capital and no revenue stream or other assets to fall back on, **electrino energy** cannot even get a guaranteed loan.

But **electrino energy** is not resource-less and in a hopeless condition. It has three principal approaches that it can take to resolve this dilemma:

1) Though the aging reverser is the most urgently needed, a miniature inertia-less craft can be constructed for a whole lot less money. It should be possible to construct one for a few hundred dollars borrowed from friends. But that technology could be licensed for hundreds of millions of dollars – enough to finance all the four high-tech inventions.

2) As a back-up to that approach, venture capital angels could be approached to advance the money to finance the reverser of aging, disease, and decay processes. This invention is not only high tech, but medical. The other inventions could be developed at a later time.

3) As a back-up to that approach, the owner could pursue his particle theory, predicting the masses of particles. That may be difficult, but not impossible. This would do what no other physical theory can do. Such a feat would be publishable, arousing interest among scientists for creating a facility to test the model – opening the way for government funding of the high-tech inventions.

A master decision tree flow chart linking and employing these three alternatives for funding the development of the inventions is in Section 7.0 Financial Plan.

According to alternative 1), projected sales and profits for the first four years of operation are summarized below:

Year	Sales(\$)	Profits(\$)	Profit/Sales(%)
1	200,000,000	0	0
2	0	0	0
3	0	0	0
4	10,000,000,000	9,000,000,000	90.0

According to alternative 2), there are no actual projected sales and profits for the first three years of operation. Year four is the same as above. According to alternative 3), there are no projected sales or profits for the first five years.

Currently, there are no competitors for any of these inventions. Once public incredulity is overcome by demonstration, the devices should have huge market potential.

The size of the electricity generating market is essentially enormous. It would be up to 50 percent of electric generation world-wide eventually. That's probably over a trillion dollars.

A self-powered high-speed locomotive powered by an electrino fusion power reactor would need to be at least 85 feet long.

Environmental Heat Engines

Las Vegas inventor Robert Stewart developed his "Stewart Cycle" engine for transportation vehicles, electricity generators, and large-scale water lifters. His efficient and pollution-free engine uses ambient heat to expand a working fluid such as Freon or ammonia and move pistons through sealed chambers. His patent is for Vapor Actuated Power Generating Device, No. 4,033,136.

A possibly more up-to-date version is Ralph J. Lagow's Method of Generating Power from a Vapor, Patent No. 4,693,087. Ken Rauen's Rauen cycle and Superclassical cycle engines also expand working fluids with environmental heat to provide useful net mechanical power.

Mr. Stewart claimed that his fuel-less engine could lift Colorado River water from below Hoover Dam back up into Lake Mead, thereby doubling Hoover Dam's output of electricity. He also proposed lifting water from the Columbia River into the Colorado River via a canal, generating electricity as the water flowed back downhill.

DISCLAIMER: Inclusion of any invention or technology described in this list of inventions does not in any way imply its suitability for investment of any kind. All investors contemplating any investments in these devices and technologies should first consult with a licensed financial professional. Prospective investors should exhaustively perform their own investigation of pertinent facts and allegations of facts. Investors should also ensure thorough compliance with regulations of the federal Securities and Exchange Commission and appropriate state securities divisions. For more information, see <http://www.zpenergy.com/modules.php?name=News&file=article&sid=1655>.

Thank you for your comment, Brian Swope.

The comment tracking number that has been assigned to your comment is SEDDSupp20016.

Comment Date: December 1, 2011 22:49:57PM

Supplement to the Draft Solar PEIS

Comment ID: SEDDSupp20016

First Name: Brian

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Country: USA

Privacy Preference: Don't withhold name or address from public record

Attachment:

Comment Submitted:

The Mojave Desert should not be given to energy companies to use as they please. This is public property that should be preserved for future generations to enjoy. Wide-open spaces and desert vistas are irreplaceable and will disappear forever because of this short-sighted decision.

Solar facilities should be located on disturbed land and rooftops, not pristine habitat.

Do not give my desert to these corporations!

Thank you for your comment, Gary Vesperman.

The comment tracking number that has been assigned to your comment is SEDDSupp20017.

Comment Date: December 2, 2011 00:39:43AM
Supplement to the Draft Solar PEIS
Comment ID: SEDDSupp20017

First Name: Gary
Middle Initial:
Last Name: Vesperman
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Address 3:
City: Boulder City
State: NV
Zip: 890051018
Country: USA
Privacy Preference: Don't withhold name or address from public record
Attachment: Locomotive_Power_Sources.docx

Comment Submitted:

Attached is my compilation of candidate power sources for high-speed rail locomotives. It is available in my website www.padrak.com/vesperman. Page 10 has this on the Searl effect generator:

Searl Effect Generator

The Searl effect generator (SEG) can be used to charge the batteries in a self-powered electric vehicle. A solid-state device, the heart of an SEG is a series of three concentric magnetic rings with magnetic rollers going around the rings. Both the rollers and rings are comprised of four layers of titanium, iron, nylon, and neodymium.

The magnetic fields impressed on the rollers have both AC and DC components. The AC component is for floating the rollers so they don't touch the rings. The DC component is to prevent them from flying off. The innermost set contains a minimum of 12 rollers for the same reason that a linear motor will not operate with less than 12 phases.

The inner set of rollers travel around at 250 miles per hour, the middle set travels at approximately 600 miles per hour, and the outer set at approximately 1500 miles per hour. Hundreds of millions of volts are generated the energy of which is picked up by brushes positioned all around the outside set of rollers.

An SEG also creates an anti-gravity field. An uncontrolled SEG will rise about 50 feet as the rollers increase speed, emit a light blue halo which indicates energy is being extracted from the ether, and then shoot up into the sky gaining speed, never to be seen again. At least one roof has been holed by an SEG. The friction-less rollers can be prevented from reaching the critical velocity that produces lift by use of a "governor", either mechanical or electronic.

An SEG can be easily controlled by immersing it in an electromagnetic wave field the frequency of which is a harmonic of the SEG's primary frequency. While in resonance, the magnetic poles of the rollers reach a unification state, and they stop moving.

The inventor has built and flown a small "inverse gravity" vehicle. A flying saucer-like SEG-powered aircraft about the size of a bus is currently being built in England by a private group.

The inventor for some years independently powered his house off the power grid with a home-sized electrical generator version of the SEG. A householder could set up a 45 x 45-cm unit and generate an output of 11 kilowatts of free electrical power.

Oddly, a house powered by an SEG has been observed to have greater healing powers than conventionally electric powered houses. The healing effect is claimed to be due to the electrons zapping the occupants, taking away pain and returning blood more quickly to damaged tissue. The SEG would also help combat asthma, bronchitis, hay fever and lung complaints due to the increased supply of oxygen in the body. Conventional methods of electric power do not pump out electrons which results in tired eyes and a tired brain.

The SEG's negative charge also means that dust stays in the carpet instead of floating in the air. This is similar in action to negative ion generators sometimes sold as air fresheners.

Two Russian scientists replicated the Searl effect generator and vindicated all of these somewhat unusual claims. See their paper "Experimental Research of the Magnetic-Gravity Effects", V. V. Roschin and S. M. Godin, Institute for High Temperatures, Russian Academy of Science, Izhorskaya 13/19, Moscow 127412, Russia. See <http://rexresearch.com/roschin/roschin.htm#xpresmgfx>.

At one time, a German power company reportedly considered replacing a nuclear power station with eight fuel-less SEGs costing a total of about \$4.5 million and generating a total of 240 megawatts with no pollution.

(End of excerpt)

For more information on the Searl effect generator, see rexresearch.com/tomion/tomion.htm,
rexresearch.com/roschin/roschin.htm#xpinv,
rexresearch.com/roschin2/roschgod.htm,
rexresearch.com/roschin/roschin.htm#xpinv,
rexresearch.com/roschin/rg1.htm,
rexresearch.com/roschin/roschin.htm#usp,
rexresearch.com/searl/searl.htm,
rexresearch.com/searl/searl2.htm,
rexresearch.com/searl2/searl3.htm,
rexresearch.com/searl3/searl.htm, and
rexresearch.com/searl4/searl4.htm.

This Draft Solar PEIS should thoroughly and honestly compare the cost-effectiveness of a World War II Manhattan Project-styled crash program to quickly develop and commercialize the Searl effect generator with the cost-effectiveness of covering and ruining millions of acres of pristine wildlands with relatively inefficient and expensive solar energy collectors and transmission lines.

Locomotive Power Sources

High-speed trains typically rely on some means of supplying energy to the locomotive from an external source. For example, cumbersome overhead electric lines are tapped to directly power a locomotive's electric drive wheels. Another method of connecting the locomotive to an electricity grid is with a dangerously exposed high-voltage third electrified rail. Linear magnetic propulsion mechanisms have been researched.

It would be much cheaper and easier to build and operate high-speed trains if their locomotives utilize an internal practically fuel-less power source.

The following candidate high-speed locomotive power sources appear worthy of further research. Some may be found to be worthwhile for building and testing prototype self-powered locomotives.

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BlackLight Power's Hydrino Generator

BlackLight Power, Inc., is developing an exotic new source of clean energy from ordinary water. Either an electrolytic cell or gaseous potassium ions in a vacuum compress hydrogen atoms into lower-energy-state hydrogen atoms called "hydrinos". When the hydrinos are formed, energy is released which in magnitude is between chemical and nuclear energy. BlackLight Power, Inc., has ambitious plans for retrofitting fossil-fueled and nuclear power plants.

BlackLight Power, Inc., is developing a 100-kilowatt generator which can power a car 100,000 miles on a tank of water. BlackLight Power, Inc., claimed some years ago that it is developing a 10-kilogram battery which can supply 150 horsepower for 1,000 miles.

BlackLight Power, Inc., has already licensed 8,250 megawatts of clean, safe hydrino generation fueled by water to seven utilities (Hoover Dam's nameplate capacity is 2,080 megawatts) – eliminating \$2 billion/year in fuel costs.

Focus Fusion

See <http://www.focusfusion.org/>. Apparently this method is much less expensive than hot fusion.

Thorium PowerPack

Bob Dratch's thorium powerpack would generate electricity at approximately one-tenth of the cost of current methods of producing electricity. Thorium is sufficiently abundant that the entire planet can be powered for millennia. After ten years of continuous operation, a trace amount of U-233 is produced. U-233 recovery to re-purify the thorium is easily accomplished. Thorium thus lasts a long time when recycled and consequently is a very efficient energy source. After extraction from ore, thorium does not require energy-intensive enrichment as is the case with uranium.

A thorium-powered reactor is inherently safe. It doesn't run the risk of "meltdown" or explosion nor can even a dirty bomb be created. Its nuclear reaction simply stops when its neutron exciter is turned off.

The simplest and smallest "table top-sized " neutron exciter design is something close to the size of a 4-D cell flashlight, and starts at about 500-kilovolt neutron output. In fact this smallest most cost-effective system can run off 4 D cells for its power.

A thorium powerpack's neutron excitor does not use radioactive flux components as conventionally done for portable systems. Instead it relies on Dratch's invention of a novel method of resonant phonon pair cleavage using specifically designed nuclear lattice holo-forms (holographic waveforms) to induce neutron imbalance in a host atom where the host atom then attempts to establish "balance" through the liberation of neutrons. Dratch demonstrated the first model of this novel design back in 1966.

Commercial thorium powerpacks can be developed with 50 or 100 kilowatts of output for home use, and up to 1 megawatt for industrial use. They actually are "power amplifiers" with power outputs of 60 times over input power. Maintenance would be minimal.

IPMS Thorium-227 Electricity Generator

The I.N. Frantsevich Institute for Problems of Materials Science (IPMS), Kiev, Ukraine, from 1951 through 1991 secretly employed 6600 of the most brilliant theoretical physicists in the entire Soviet Union to work for nearly 50 years with complete freedom. They were able to develop whole new sciences, technologies and materials unknown in the West.

Their models of non-linear quantum mechanics, plasma physics, atomic engineering, nuclear physics and related mathematical and theoretical constructs, which made their development possible, are so unique that they challenge the validity of the most fundamental assumptions embodied in the Copenhagen Interpretation model currently held in general acceptance in the West.

For example, Western-developed particle/wave quantum mechanics is described by Einstein's $E = MC^2$. The Soviet nonlinear model of quantum mechanics is described by the formula $E = M_K v$ [Energy = Mass @ rest as a function of a mathematical constant].

Einstein's theory of relativity assumes that the speed of light is constant. However, measurements have shown that the speed of light has slowed down 7 per cent over the past two centuries. (See http://worldnetdaily.com/news/article.asp?ARTICLE_ID=39733.) Einstein's famous equation is therefore not based on the real world of peer-reviewed experimental results. Consequently the more correct Soviet model has enabled numerous technical advances not even dreamed of by Western science.

Among several energy inventions developed by the IPMS are free-standing thorium-227 isotope electric power generating plants. They can be small enough to power a single home and large enough to power whole communities. They also can operate for up to 18 years without ever requiring refueling or maintenance.

Micro-Fusion Reactor Employing Stable High-Density Plasma Electron Spiral Toroids In Neutron Tube

Electron Power Systems, Inc., (EPS) has discovered the explanation for ball lightning and from that has invented and protected with five patents an Electron Spiral Toroid Spheromak micro-fusion reactor. Safe, pollution-free micro-fusion reactor-powered generators could reliably generate electricity with capacities ranging from 10 kilowatts through 1000 megawatts at the cost of 10% of today's electricity. All transportation vehicles could be reliably and safely powered with micro-fusion reactors with substantially lower production, operating and maintenance costs and without poisonous emissions. EPS expects to reduce the mass and cost of aircraft by 70%, and space launch costs by more than 95%.

Each year 15 million cars and trucks are sold in the USA, and 48 million are sold worldwide. EPS expects to eventually replace all of them with silent, reliable, safe, emissions-free micro-fusion reactor powered electric vehicles with substantially lower production, operating, and maintenance costs.

In addition, EPS has designed a 10kW generator that will operate on clean, non-polluting fuel, and can operate locally. This innovation will potentially improve the lives of most of humanity by making available low cost electricity that anyone can produce in their own homes. It will help literally billions of people. The paper design shows that the EPS generator will be the approximate

size and cost of a 10 kW generator available today in any hardware store, with the advantage that it will not use fossil fuels, but will use clean energy instead.

An article in the Institute of Electrical and Electronic Engineers, Inc., Spectrum magazine over ten years ago stated that world demand for electricity increases approximately 500 megawatts every day. To put this in perspective, the equivalent of another Hoover Dam would have to be built every four days to keep up with world electricity increase demands. The EPS innovation will make local generation possible without the need for more power plants or more power lines.

Major contributors to air and water pollution are the fossil-fueled engines of aircraft, farm harvesters and tractors, ships, boats, snowmobiles, trains, military vehicles, and all-terrain vehicles. Their engines could be replaced with cheaper electric motors and batteries charged by safe, non-polluting onboard micro-fusion reactor powered generators.

Electron Power Systems, Inc., (EPS) is an early stage company working to develop the Electron Spiral Toroid Spheromak micro-fusion reactor. From EPS will come new applications, including a practical micro-fusion electricity generator, a low-cost space launch vehicle, a high-kinetic energy anti-missile beam, and practical zero-emission cars, trucks, buses, farm equipment, construction equipment, military vehicles, and jet aircraft.

EPS is moving to commercialize these concepts. EPS has assembled a team of engineers, and plasma physicists, all as contractors. EPS is working on proof of concept demonstrations for the applications.

EPS plans to build a laboratory demonstration unit in two to three years with present funding levels, and then the first commercial prototype. Recent breakthroughs in the EPS lab give confidence this will happen within this timeframe. More funding will make this happen sooner.

EPS is seeking \$2 million as a first round of investment to complete the development of a demonstration unit in eighteen months. A second investment of \$8 million will be needed to complete a prototype unit in eighteen months after the demonstration unit.

Up until now EPS has had no sales and operates with funding from angel investors, each of whom is retired and has accumulated a substantial personal fortune, allowing these types of investments of high risk, high reward. EPS also operates with funding from the founder.

EPS operates on a low budget, spends only what it has, and has incurred no debt or obligations. In this manner it is able to operate indefinitely, while continuing to make progress each year. Additional small amounts of funding will speed developments.

EPS has made a new discovery in physics with the potential to locally produce low-cost, clean energy for homes and buildings, independent of power plants. EPS owns the new technology and plans to initially produce a safe, clean, 10-kilowatt electricity generator that needs no nuclear fuels nor fossil fuels and will produce no green house gases. A home owner would need a one-liter sized container of environmentally benign hydrogen/boron fuel per year at a 20:1 fuel cost savings compared to commercially produced electricity or fossil fuels.

EPS's new discovery would allow anyone worldwide to buy a small home generator, about the size but less than the cost of a Sears 10-kilowatt portable generator. It would power their home plus

several nearby homes even where there are no power grids or power plants. This will be a step towards providing low-cost, local electricity to help eliminate poverty worldwide.

EPS plans to build 10-kilowatt generators by applying its newly discovered technology to improve work done by others to create energy. The basic work was shown successfully in the 1980s at the University of Miami. But that technology had limitations at that time. EPS's new technology will overcome those limitations.

From a modest start with producing 10-kilowatt micro-fusion reactor powered generators, EPS expects to branch out to other applications of its technology as well as producing larger and larger generators.

Mankind's practically insatiable demand for energy implies a simply humongous market potential for EPS which would encompass all of the world's producers of oil, coal, uranium and electricity plus all manufacturers of transportation vehicles including cars, trucks, buses, farm equipment, ships, boats, construction equipment, trains, satellites, aircraft, snowmobiles, and military vehicles.

Several thousand neutron tubes are in use in the USA today that safely collide hydrogen ions to produce neutrons, which in turn are used for medical testing, industrial process control, and homeland security. An ion source produces hydrogen ions (deuterium), which are accelerated to 110 kilovolts, then directed to hit a hydrogen target (also deuterium), which produces neutrons, and also heat as a waste product. Neutron tubes today produce neutrons and a low level of heat energy. The low density of the hydrogen ions limits the amount of energy produced.

In the 1970's, Dr. Wells at the University of Miami collided two plasma toroids to produce low-level fusion energy in the TRISOPS system. The amount of energy produced was limited by the short duration time of the plasma toroids used, as well as their low density and their low level of energy.

Electron Power Systems, Inc., (www.electronpowersystems.com) has discovered a plasma electron spiral toroid that remains stable without magnetic confinement, by using background gas pressure for confinement instead. These new plasma toroids are observed to remain stable for thousands of times longer than classical plasma toroids, which opens the way for new clean energy applications.

EPS's new stable plasma electron spiral toroids overcomes each of the neutron tubes limitations, and will potentially result in fusion with no magnetic containment required – thus producing a practical micro-fusion reactor. EPS's challenge is to adapt the new stable plasma toroid to the TRISOPS method.

The micro-fusion reactor adapts the Electron Spiral Toroid (EST) Spheromak to the neutron tube design. The EST Spheromak is patented jointly with MIT scientists who also have published papers confirming the EST Spheromak physics and data. The EST Spheromak will overcome the neutron tube limitations by increasing ion density by 2500 times. A metal containment can be used for efficient heat energy collection and conversion.

The EST Spheromak micro-fusion reactor will be less than three feet in length, the same as for present neutron tubes, and small enough to fit in an electric car. Elimination of the need for magnetic containment allows this power supply to be small and compact. A micro-fusion reactor will use hydrogen/boron to produce clean energy without neutrons. The energy in one pound of

hydrogen/boron fuel equals the energy of 250,000 pounds of gasoline. Hydrogen and boron are plentiful and will not run out, as oil is projected to do in the 21st century.

The Electron Spiral Toroid Spheromak (ESTS) is a plasma toroid that is self-organized and self-stable with no magnetic fields needed to contain it. Inventor Clint Seward has not seen any published descriptions of any devices nor phenomena similar to the ESTS. The US Patent Office agrees and has issued five patents.

The micro-fusion reactor was recently selected by the New Energy Congress as one of the few technologies now known to have a genuine potential to replace fossil fuels. See the lengthy analysis of the micro-fusion reactor in http://pesn.com/2006/03/08/9600242_Spheromak_Plasma_Toroid/.

"Locomotive Power Sources" for high-speed rail in www.padrak.com/vesperman includes the micro-fusion reactor with BlackLight Power's hydrino generator, focus fusion, Robert Dratch's thorium powerpack, Kiev, Ukraine's I.N. Frantsevich Institute of Problems of Materials Sciences (IPMS) thorium-227 electricity generator, Clem over-unity vegetable oil engine, thin-film electrolytic cells, noble gas plasma engine, Searl effect generator, Magnatron - light-activated cold fusion magnetic motor, Oleg Gritsevich's hydro-magnetic dynamo, IPMS energy storage/battery device, metamatter which is solid crystallized fully-ionized plasma, Gordon Ziegler's electrino fusion power reactor, and environmental heat engines.

Some of these listed new energy inventions appear to have at least one limitation that is not shared with the ESTS micro-fusion reactor.

The Electron Spiral Toroid Spheromak (ESTS) micro-fusion reactor has five patents and is documented in published papers confirming the physics and data. (1), (2), (3), (4)

Clint Seward discovered the ESTS (5) while studying ball lightning. Seward has developed a secret formula to produce the ESTS that is not reported in any other reference to date that he has seen.

Why this is important is that all spheromaks reported to date dissipate in microseconds, while the ESTS has been observed to endure with no confining magnetic field for hundreds of milliseconds, and theoretically will remain stable for many seconds.

1. Seward, C., Chen, C., Ware, K., Ball Lightning Explained as a Stable Plasma Toroid. PPPS-2001 Pulsed Power Plasma Science Conference, June 2001.
2. D. C. Seward, C. Chen, R. Temkin, Energy Storage Device, US Patent 6,140,752, Oct. 31, 2000.
3. C. Chen, R. Pakter, and D.C. Seward, Equilibrium and Stability Properties of Self-Organized Electron Spiral Toroids, Physics of Plasmas. Vol. 8, No. 10. Oct. 2001.
4. W. J. Guss, Chen, C., Equilibrium of Self-Organized Electron Spiral Toroids. Physics of Plasmas. August 2002.
5. Seward, C., Ball Lightning Explanation, Leading to Clean Energy. Acton, MA 01720. Seward Publishing Co., 2011.

EPS plans to initially produce a safe, clean, 10-kilowatt electricity generator that needs no nuclear fuels nor fossil fuels and will produce no green house gases. A home owner would need a one-liter sized container of environmentally benign hydrogen/boron fuel per year at a 20:1 fuel cost savings compared to commercially produced electricity or fossil fuels.

But first EPS needs to obtain \$2 million as a first round of investment to complete the development of a demonstration unit in eighteen months. A second investment of \$8 million will then be needed to complete a prototype unit in eighteen months after the demonstration unit.

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From a modest start producing clean, reliable, safe 10-kilowatt micro-fusion reactor powered generators, EPS plans to methodically produce larger and larger generators. EPS even has a preliminary design with supporting calculations for massive 1000-megawatt baseload generators.

Mankind's demand for energy implies an enormous market for micro-fusion reactors encompassing all of the world's producers of oil, coal, uranium and electricity plus all manufacturers of transportation vehicles including cars, trucks, buses, farm equipment, ships, boats, trains, satellites, aircraft, mining equipment, snowmobiles, construction equipment, and military vehicles.

Countries which export oil will benefit from not having to quickly burn up their finite oil reserves on cheap gasoline and diesel fuel. Instead they will be able to draw down their reserves more slowly by making products of higher value such as plastics, medicines, fertilizers and synthetic textiles.

Some years ago a Forbes article stated that PECO (formerly Philadelphia Electric Company), with an income stream to back it up, was able to sell on Wall Street \$4 billion worth of bonds paying 5.8 per cent. A micro-fusion reactor powered generator manufacturer could simply sell bonds to build and operate generators at a low interest rate. Generator loan payback times may be in the ball park of a half-year to a year, depending on the local electricity market price. As soon as a micro-fusion powered generator is paid for, the revenue from that time on would be almost pure profit. Once a track record is established by successfully installing a few micro-fusion reactor powered generators, Electron Power Systems, Inc., could raise money to build and install more generators by simply selling billions of dollars of bonds instead of stock. So therefore, there wouldn't be any dilution of ownership.

EPS plans to partner with major electricity producers and suppliers. EPS will license them to produce electricity as they do now. EPS plans to partner with automobile manufacturers to license the technology. EPS plans to partner with defense and aerospace contractors to license the technology.

MANAGEMENT

Clint Seward is the discoverer of the Electron Spiral Toroid Spheromak and received the initial patents. He has been working ever since to scale up the results, which he has been able to do recently. He has been a project design engineer and program manager for many years, working initially with the US Air Force B-58 Hustler program, and as a project manager and engineering

manager in several major corporations. His work was defense initially, moving to security and process control, then energy related.

Clint was an Engineering Manager for Mosler, an American Standard Division 1970 thru 1978, and an Engineering Manager and VP of Marketing for Bristol-Babcock 1978-1985 – an ACCO fortune 500 Company. He was General Manager of Iontrack, a Division of a large international company 1985-1989 (now a Division of GE). He has been President of his own company Electron Power Systems, Inc. from 1989 to present.

Education: MSEE; University of Michigan 1965; BS at US Military Academy at West Point 1963.

D C Seward is the VP Engineering of Electron Power Systems, Inc. He has worked on the micro-fusion reactor technology since its inception in 1986. He has the responsibility for organizing the experiments and bringing qualified people in to help with the work. DC has worked as the VP Engineering of EPS on a contract basis from 1998-Present as funding allows. He is employed full time as a Field Sales engineer for Ember Systems, a wireless technology company, 2005-Present. Previously he was a Product Design Engineer, Trimble Navigation: 1994-1998

Education: MSEE Massachusetts Institute of Technology, 1994.

Jim Becker is acting CEO and Marketing VP. Jim has experience as a senior executive in the high tech sector with extensive experience managing rapid growth organizations. He has a broad technology background with proven skills in computer systems, avionics industries, and health care information technology along with direct functional experience in finance, sales, marketing, engineering and corporate management in both domestic and international settings.

Education: Thayer School of Engineering, Dartmouth College; Master of Engineering 1976; Master of Business Administration 1975; Bachelor of Engineering 1970.

PAPERS AND PATENTS for Clint Seward:

Chen, C., Pakter, R., Seward, D. C. "Equilibrium and Stability Properties of Self-Organized Electron Spiral Toroids." Physics of Plasmas. Vol. 8, No. 10. October 2001.

Seward, C., Chen, C., Ware, K. "Ball Lightning Explained as a Stable Plasma Toroid." PPPS-2001 Pulsed Power Plasma Science Conference. June 2001.

Seward, C. "Propulsion Using a Stable Plasma Thruster." STAIF 2001, (Space Technology and Applications International Forum-2001). American Institute of Physics , www.aip.org/catalog/conforder.html. February 15, 2001.

Seward, C.; Chen, C., Temkin, R. ENERGY STORAGE DEVICE , US Patent 6,140,752, October 31, 2000.

Seward, D. C. Electron Spiral Toroid; US Patent 5,773,919; June 30, 1998.

Seward, D. C. Energy Storage System, US Patent No. 5,589,727. December 31, 1996.

Seward, D. C., Chen, C., Temkin, R. (1996b). International Patent Application WO 96/38848, Energy Storage Device, Published December 5, 1996.

Seward, D. C. Fixed Geometry Plasma and Generator, US Patent 5,175,466. Dec. 29, 1992.

ESP's President Clint Seward collaborated with Gary Vesperman in writing a description of Seward's invention in www.padrak.com/vesperman. See "Locomotive Power Sources".

The Products page of www.electronpowersystems.com sells a book "Ball Lightning: Leading to Clean Energy" and a paper "Spheromaks Observed Forming in Atmosphere". Paper's abstract:

Plasma toroids, called spheromaks, are reported here as observed forming in partial atmosphere from high power electric arc events similar in power to lightning ground strokes. The spheromaks are observed to be stable in partial atmosphere with no confining magnetic fields and are observed to last for more than 200 milliseconds in partial atmosphere. This paper describes the observations and presents a model that explains the properties of these spheromaks, which we call Electron Spiral Toroid Spheromaks (ESTS's) due to the spiraling motion of the charged particles. It includes four TV images. The model presented is a hollow toroid with a thin outer shell of electrons that all travel in parallel paths orthogonal to the toroid circumference, in effect spiraling around the toroid. A comparable inner surface of ions acts to neutralize the space charge. The paper provides formulas describing the ESTS. Potential ESTS applications include X-ray production, air defense, and energy production.

The cost to produce a 10-kilowatt EST Spheromak electricity generator would be about \$1100 in production quantities. The EST Spheromak generator would have fewer parts than a comparable Sears generator.

Electron Power Systems, Inc., does not have a working prototype. The company has identified the instrumentation and needs another \$100,000 for laboratory work. With \$2,000,000, the company expects to have in two years a demonstrable prototype. In an additional year for \$8,000,000 a production prototype is expected to be built. Remember, each piece of the project uses technology others have demonstrated.

Clem Over-Unity Vegetable Oil Engine

Richard Clem was a heavy equipment operator who had noticed that a hot asphalt sprayer would continue to run for up to an hour even after the power was turned off! So he built a modified version as a 200-pound engine which ran on vegetable oil at 300 degrees and was started by a 12-volt battery. The heat is internally generated by the engine. During a nine-day test conducted by Bendix Corporation engineers, the engine in its self-running mode consistently generated 350 horsepower into a dynamometer. The engine is constructed from off-the-shelf components except for a hollow shaft and a custom cone with enclosed spiral channels.

If the automobile industry adopts the Clem over-unity engine, motorists could change its eight gallons of vegetable oil only every 150,000 miles and never buy any gasoline. To illustrate the engine's durability, the only working model of the Clem engine has been continually running on his son's farm for several years.

Combining the Clem over-unity engine with the hydrosonic pump could provide distilled ocean water as well as hot water for space heating, kitchens, and bathrooms at *no* energy cost.

The Clem over-unity vegetable-oil engine is not patented. It may be fairly straightforward to set up a small machine shop for manufacturing hollow shafts and cones.

Thin-Film Electrolytic Cells

A number of seasoned technology integrators have developed thin-film energy storage technologies which hold considerable promise. Dr. George Miley, Dr. Robert Hockaday and others have developed thin film technologies with energy densities exceeding 250-400 watt hours per kilogram. Dr. Miley's invention is illustrative. Using a flowing pack-bed type electrolytic cell with 1-molar LiSO_4 in light water, 1mm plastic beads with a very thin [500-1,000 angstrom] film of metal [nickel, palladium, titanium] are employed. A special sputtering technique is used to spray the metals onto the surface of the beads. With 2-3 volts of electrical power and 1.5 milliamperes of current, the single film experiments have shown the material to produce more than 10 times as much output power as input. The input power is no more than 0.01 watts while .5 watt of heat is produced.

It is likely that the physics involved in this reaction involve the release of energy as a by-product of nuclear transmutation. Dr. Miley has written, "The key finding from these studies has been the observation of a large array of "new" elements (i.e., different from the original bead coating), many with significant deviations from natural isotopic compositions, after the run.

Great care has been made to ensure that these elements are distinguished from isotopic impurities by use of a "clean cell" with high purity components and electrolytes, in addition to the pre-and post-run analyses. Even low-energy radiation was detected from the bead days after each experiment. Applications to space power, providing a 1-kilowatt cell with only 500 cubic centimeters of active electrode is predicted." Note that this particular invention, with its large over-unity energy yield, was awarded a NERI grant by the DOE. At the insistent urging of the American Physical Society and representatives from MIT and other universities whose laboratories are currently engaged in high-temperature gas-cooled nuclear reactor research, Secretary Richardson eventually withdrew the grant. The tangle-footed Department of Energy actively discourages the development of new sources of energy, presumably to appease the oil, uranium and coal companies. The U.S. Patent Office has unfairly classified secret nearly 5000 energy patents. Luckless energy inventors then risk 20 years in prison if they work on, sell, or publicize their energy invention – often created at great personal sacrifice.

Searl Effect Generator

The Searl effect generator (SEG) can be used to charge the batteries in a self-powered electric vehicle. A solid-state device, the heart of an SEG is a series of three concentric magnetic rings with magnetic rollers going around the rings. Both the rollers and rings are comprised of four layers of titanium, iron, nylon, and neodymium.

The magnetic fields impressed on the rollers have both AC and DC components. The AC component is for floating the rollers so they don't touch the rings. The DC component is to prevent them from flying off. The innermost set contains a minimum of 12 rollers for the same reason that a linear motor will not operate with less than 12 phases.

The inner set of rollers travel around at 250 miles per hour, the middle set travels at approximately 600 miles per hour, and the outer set at approximately 1500 miles per hour. Hundreds of millions of volts are generated the energy of which is picked up by brushes positioned all around the outside set of rollers.

An SEG also creates an anti-gravity field. An uncontrolled SEG will rise about 50 feet as the rollers increase speed, emit a light blue halo which indicates energy is being extracted from the ether, and then shoot up into the sky gaining speed, never to be seen again. At least one roof has been holed by an SEG. The friction-less rollers can be prevented from reaching the critical velocity that produces lift by use of a “governor”, either mechanical or electronic.

An SEG can be easily controlled by immersing it in an electromagnetic wave field the frequency of which is a harmonic of the SEG’s primary frequency. While in resonance, the magnetic poles of the rollers reach a unification state, and they stop moving.

The inventor has built and flown a small “inverse gravity” vehicle. A flying saucer-like SEG-powered aircraft about the size of a bus is currently being built in England by a private group.

The inventor for some years independently powered his house off the power grid with a home-sized electrical generator version of the SEG. A householder could set up a 45 x 45-cm unit and generate an output of 11 kilowatts of free electrical power.

Oddly, a house powered by an SEG has been observed to have greater healing powers than conventionally electric powered houses. The healing effect is claimed to be due to the electrons zapping the occupants, taking away pain and returning blood more quickly to damaged tissue. The SEG would also help combat asthma, bronchitis, hay fever and lung complaints due to the increased supply of oxygen in the body. Conventional methods of electric power do not pump out electrons which results in tired eyes and a tired brain.

The SEG's negative charge also means that dust stays in the carpet instead of floating in the air. This is similar in action to negative ion generators sometimes sold as air fresheners.

Two Russian scientists replicated the Searl effect generator and vindicated all of these somewhat unusual claims. See their paper “Experimental Research of the Magnetic-Gravity Effects”, V. V. Roschin and S. M. Godin, Institute for High Temperatures, Russian Academy of Science, Izhorskaya 13/19, Moscow 127412, Russia.

At one time, a German power company reportedly considered replacing a nuclear power station with eight fuel-less SEGs costing a total of about \$4.5 million and generating a total of 240 megawatts with no pollution.

Noble Gas Plasma Engine

Joseph Papp was granted US Patent #3,670,494 for his “Noble Gas Plasma Engine”. A mixture of recycled inert gases (helium, neon, argon, krypton, and xenon) is exposed to a high-voltage discharge in a sealed cylinder with a piston. The spark causes the gases to expand violently though no combustion occurs. Mechanical energy is delivered by the piston's displacement. The gases immediately collapse to their original density, and the cycle is repeated. After several thousand hours the gases lose their elasticity and are replaced. The operating cost is 15 cents an hour.

The first prototype was a simple 90-horsepower Volvo engine with upper end modifications. Attaching the Volvo pistons to pistons fitting the sealed cylinders, the engine worked perfectly with an output of three hundred horsepower. The inventor claimed it would cost about twenty five dollars to charge each cylinder every sixty thousand miles.

There were indications that such an engine could provide its own electrical power and being a closed system, require no fuel. It is not by definition an electromagnetic engine, however. It is believed that at the heart of the Papp engine is the development of high-density electrical charge clusters which provide the energy to expand the gases.

Other patents are 5319336, 4151431, 3670494, 4046167 - Mechanical Accumulator, 3680431 - Method and Means for Generating Explosive Forces, and 4,428,193 - Inert Gas Fuel, Fuel Preparation Apparatus and System for Extracting Useful Work from the Fuel.

Magnatron – Light-Activated Cold Fusion Magnetic Motor

During the late 1970's Howard Rory Johnson, a brilliant inventor in Elgin, Illinois, combined light-activated cold fusion with a new type of magnetic motor into a "Magnatron". His prototype Magnatron produced 525 horsepower but only weighed 475 pounds. It could propel a large truck or bus 100,000 miles on about 17 ounces of deuterium and 1.5 ounces of gallium before being recharged. This was years before either Pons and Fleischman or Dr. James Patterson entered the scene with their cold-fusion technology.

Johnson discovered the light-activated cold fusion portion of the Magnatron by accident when as he was developing a new type of electronic circuit using deuterium oxide and gallium, he noticed the two materials were producing energy on their own. He could not figure out what was triggering the energy production for some time until he finally discovered it was light.

The Magnatron's flow of deuterium (an isotope of hydrogen) is controlled by magnetic tunnels. At the point where the deuterium strikes the gallium (a heavy metal electron donor), a beam of light from a diffraction prism forces their fusion. That controlled reaction results in the fusion of two atoms forming a new atom. In the process, electricity is released, and that is what powers the magnetic motor. The Magnatron is sealed, however, so 'light' is provided from photon energy produced from coils tied directly to the motor. It is more or less a pulse-generated system.

A photon is a football-shaped particle of electromagnetic wave energy. Its energy content is a product of its frequency f and Planck's constant h . When an electron in orbit around the nucleus of an atom drops to a lower, less energetic orbit, a photon containing the energy equivalent to the electron's energy drop is emitted. This explains why light and other forms of electromagnetic energy such as gamma rays and radar are sometimes observed as particles and other times as waves. The heated filament of a light bulb is an example of photon production.

There is no way to explain, using contemporary electrical theory, how his relatively small motor could produce such tremendous horsepower. Utilizing his own new electrical-magnetic energy theory, involving a process he called "attract-attract", Johnson exploited the magnetic field. He used the top and bottom rotors in his motor. First, the top rotor attracted, released; then the bottom rotor attracted, released. The action of attraction, alternating between upper and lower magnets, used the windings to complete the attract field.

Robert Nelson's compilation of articles about the Magnatron provides much more technical detail on the Magnatron than the foregoing. (See <http://www.rexresearch.com/magnatron/magnatron.htm>.)

Johnson constructed his prototype Magnatron's 525-horsepower magnetic motor without any of the hardware that is presently used in present state-of-the-art electric motors. Conventional motors use the accepted principle of attract-repel, an energy form that doesn't utilize the magnetic field to its greatest advantage. For comparison, a typical 500-horsepower electric motor has wires exiting it that are the size of a garden hose.

The sealed self-contained Magnatron has no wires. Thus, other than the Magnatron's infrequent refueling with small amounts of deuterium and gallium, the stand-alone Magnatron uses no input power. The Magnatron's entire output power is conveyed by its magnetic motor's rotating shaft.

Fuel for the Magnatron is plentiful: deuterium is derived from water, and gallium is extracted from abundant aluminum bauxite. Commercially available pure gallium is still scarce and expensive. It may well be possible, however, to cheaply transmute another less expensive element into gallium. See Gary Vesperman's list of over two dozen methods of neutralizing radioactive waste in <http://freeenergynews.com/Directory/NuclearRemediation/Vesperman/> which includes possible transmutation methods. Additional methods are briefly described in <http://freeenergynews.com/Directory/NuclearRemediation/>. Dr. Santilli's method plus an explanation of suppression of radioactivity neutralization methods are available at <http://www.nuclearwasterecycling.com/>. Robert A. Nelson's survey "Transmutations of Nuclear Waste" is at <http://www.rexresearch.com/articles/nukewa.htm>.

The Magnatron uses no fossil fuel in its operation, and it emits no pollution. The magnetic motor's RPM is 8,000 with a gear ratio of 2:1. Lubrication for the sealed motor is synthetic motor oil which does not need changing and does not need a filter, because foreign materials such as carbon and varnish are not introduced into the system, as they are in the internal combustion piston engine.

This writer, Gary Vesperman, attended the 3rd International Symposium on New Energy in Denver, CO (April 25-28, 1996). I remember being impressed by Gerald Orłowski's lecture "Magnatron, Fusion Magnetic Motor", during which he provided substantial technical information on the Magnatron.

Orłowski reported that, "Some inside information revealed that OPEC had been keeping track of all competitive technology", and Johnson was #1 on their hit list! Johnson was about to manufacture the motors through a nationwide dealership. Some motors still exist, but the owner wants several million dollars for them."

This writer Gary Vesperman knows of very few inventions of new energy sources which are reasonably large stand-alone energy producers. Besides the Magnatron, they include Oleg Gritskevitch's hydromagnetic dynamo, and Electron Power Systems' micro-fusion reactor, which employs stable high-density plasma electron spiral toroids. Almost all inventions of new energy sources are, or claimed to be, relatively small over-unity power converters that convert input power to greater amounts of output power. Bob Dratch's thorium powerpack is an exception (see above).

At the September 14, 2005 public meeting in Green Valley Ranch casino regarding the proposed Regional Fixed Guideway traversing Las Vegas, Nevada, this writer Gary Vesperman submitted comments suggesting possible power sources for the train, including descriptions of the hydromagnetic dynamo and the micro-fusion reactor (<http://www.rtcsonthernnevada.com/rfg/documents/September2005PublicMeetingMinutes.pdf>, pp. 19-77).

No wonder the Magnatron's inventor, Rory Johnson, was rumored to have been "Number One" on Organization of Petroleum Exporting Countries (OPEC)'s hit list.

The following is an excerpt, slightly edited, from Orlowski's lecture transcript where he tells about his unwitting personal involvement with the U.S. Government's suppression of the Magnatron:

"After I saw the Magnatron motor, my life changed. I was no longer a happy camper working by myself in a wonderful, fully equipped research machine shop for the Greyhound/Armour Corporation in Arizona. While on a business trip, I saw this motor running in the Magnatron, Inc.'s showroom located in Elgin, Illinois.

"During my 15 years of electric motor repair, among the hundreds of motors I repaired, I rewound a 500 HP electric motor. That motor had wires exiting it that were the size of a garden hose. The Johnson motor being shown had NO wires. Surely this motor was unreal, a con-job to get money for dealerships. Yes, there he was, Rory Johnson standing next to his sealed self-contained electric motor.

"Upon returning to the Greyhound Towers and telling them what I had seen, they instructed me to call Mr. Johnson. Greyhound wanted Johnson to put forth a plan to install a motor in one of their buses for testing purposes.

"I called Johnson. He was delighted that a Greyhound employee had seen the motor running, and replied that the testing idea was acceptable. He would set a time frame for just when a bus should be delivered to him.

"Two years went by, with no business proposal from Johnson. Then, his former business partner, Mike Marzicola, called to say Johnson had passed away. He wanted me to work with him to get one of the motors running. I flew to Orange County, CA, saw the motor, took pictures, and put forth a plan to Greyhound. Subject to a contract with Marzicola, one of the old worn motors would be brought to the research shop. I would then very carefully reconnect the generator wires that Johnson had cut off prior to moving from Elgin, IL to California.

"Discussions with Marzicola brought out that the U.S. Government (given the authority by the Congress of 1952) had issued a GRAB order to take Johnson's motors. Rumor has it, the DOE is run by US oil companies and OPEC, and they want no competition, period. Because of this grab order, Johnson had cut the generator wires. He had then put his 'total shop', with motors and all, on several U-Haul trucks and left Illinois in the middle of the night. He went to California to re-establish his business. But before he could get a motor running, he passed away.

"Surely, Greyhound would agree to let me re-start one of Johnson's motors. The wonderful proposal put forth to Greyhound was rejected by mail. Very agitated, I went to the top office at Greyhound demanding an explanation. I was met at the door with the comment, "We know why you are here." Knowing the potential savings to the bus company, surely they could have only one reason for rejecting the proposal. They must have believed I was not qualified to start up the motor.

"Greyhound's top legal advisor stated he was present when the Greyhound board met and discussed my written proposal. He stated the following, "At NO time was the thought put forth that you would not succeed. In fact, we discussed all of the hardware designed and constructed by you, and started the conversation from what happens when Greyhound has a running motor. We contacted a State representative who felt this motor should not be allowed to be used in 4,000+ buses. The loss in tax

dollars for fuel alone would be a very huge sum.” He then asked me to leave, stating he was sorry that he had to tell me the reason the plan was rejected.

“Telling Marzicola of the rejection, I offered to personally put in a few thousand dollars toward the parts to get one motor running. In return, I would be assigned the dealership for the Phoenix metropolitan area. We signed legal papers in exchange for the money agreed on, and went to work. (I still have the signed dealership.)

“The first thing I noticed was that someone had been working on repairing the motors. Three motors already had new commutator assemblies installed. Each assembly consisted of 3 commutator assemblies on one insulated tube with a metal case to secure it to the shaft.

“One motor still had the old worn commutator assembly, as it had not yet been repaired.”

Orlowski goes on to describe his reconstruction efforts and includes interesting technical details about the Magnatron’s structure and theory.

Johnson did not know that OPEC tracks all potential competition to its oil business and that he was reportedly number one on OPEC’s hit list. His first mistake was publicizing, in many magazines, his plans to manufacture and distribute his revolutionary motor.

Erik Masen has spoken with a few people who even signed up for distributorships. Erik Masen had included Johnson and his Magnatron in his energy invention suppression anthology (see http://www.electrifytimes.com/erik_masen_suppression.html).

In 1979, Johnson placed his engine in a Buick Electra and was preparing to drive it around the country to sign up more distributorships when the US Department of Energy and the State of Illinois teamed up to prohibit his company Magnatron, Inc., from producing and selling Magnatrons. They first placed a gag order on all the people in the company by using the Secrecy Act of 1952.

Secondly, the State of Illinois immediately requested the company to provide information about all of their employees, distributors, stockholders, investors, suppliers, etc. They asked questions that blatantly deny anyone’s constitutional rights to privacy. The pressure from the State of Illinois became so overwhelming that Johnson decided to move his entire business to California in the middle of the night.

After a year of hearing nothing but silence from Johnson, Greyhound agents tried to contact him – only to be notified that he had passed away unexpectedly. This is a particularly troubling part of the story, since he had been in his early fifties and in robust health. Later, Greyhound learned that shortly before he died, Johnson had inexplicably moved out of his laboratory in the middle of the night and taken all of his motors and technology to California.

Bob Bass, in his report copied below on low-energy nuclear transmutation, claims that the CIA, the KGB and the Mossad, etc. all have "sprays" which can be sprayed upon someone and cause him or her to die of apparently natural causes. One speculation is that Johnson’s death – apparently due to heart failure – had been artificially induced by such a spray.

In a January 20, 2007 email to Gary Vesperman, Terry Sisson reports:

“Hi Gary,

“I visited Magnatron, Inc., in July 1979. I wish I would have taken a photo. Placards were placed over every inch of the large windows in the front of the building listing all of the questions the State of Illinois requested his company to provide. He wrote, “When has the government ever had the right to ask this of any company.” I peeked in the front window and saw one of his motors mounted on an engine stand. Nobody appeared to be there so I walked around to the rear of the building. I found the rear garage door open and could see the Buick Electra inside. I was about to approach nearer when a man emerged. We talked, but he quickly informed me that due to a US gag order he was unable to talk about anything. I managed to get his phone number and called him from time to time for years following. He was an assistant of Rory’s and he kept the information very close to the vest. He did tell me that it was real and it worked, yet not how it worked.

“About 1984, I began to call all the Johnsons in the phone book in Elgin. I finally got a hold of Rory’s son. He too said that it was real, but I got nowhere. Around 1992, I met Jerry Orlowski, and he told me his experience as the employee of Greyhound who was sent to investigate the technology, since he wound electric motors for several years. Jerry was very upset about the whole incident, particularly Greyhound’s Board of Directors refusal to utilize the technology after he found the technology to be authentic. Jerry even witnessed the government’s seizure of the motors in California. --- Terry Sisson.”

Hydro-Magnetic Dynamo

The hydro-magnetic dynamo is a doughnut-shaped large-scale emission-free electrical generator which does not require external fueling and operates safely, reliably and silently at moderate temperatures. The dynamo is capable of powering larger transportation vehicles such as buses, trucks, ships, locomotives, and airplanes. Doubt remains about making dynamos compact enough to power automobiles.

The circumstantial evidence for the Russian inventor’s performance claims for his hydro-magnetic dynamo is reasonably strong. While three experimental prototypes have been built with Russian and Armenian expertise and equipment, a fourth demonstration prototype needs to be built with more modern Western engineering expertise and equipment to verify dynamo performance claims and to further explore the dynamo’s potential capabilities. Performance claims are as follows:

Hydro-magnetic dynamos are scalable from 100 kilowatts to 1,000 megawatts. One doughnut-shaped, fuel-less 1000-megawatt dynamo is about the size of a two-car garage. For comparison, Hoover Dam’s 17 generators have a total nameplate capacity of 2,080 megawatts. Seven 1000-megawatt dynamos can be vertically stacked to comprise a single 7000-megawatt dynamo.

A dynamo can reliably run continuously for 25 years or more with little or no maintenance, no external fuel source, and no pollution. If a dynamo’s output is 1,000,000 watts, its total input power is approximately 10,000 watts. So the dynamo’s energy efficiency is 10,000%, or 100 to 1.

The source of the dynamo’s massive electrical output is a nuclear reaction which is not generally known to mainstream science. However, it is known that the dynamo produces alpha particles which are helium nuclei made from fused deuterium, an isotope of hydrogen with one proton and one neutron. The electrons missing from the helium nuclei are what seem to provide a copious “sink” of electricity, and which happen to be the secret to the dynamo’s ability to generate an exceptionally large amount of electricity.

It is also known that the dynamo uses high-density charge clusters. High-density charge clusters are the basis of plasma-injected transmutation of elements and also neutralization of radioactive materials.

There were three dynamo prototypes built. The first two small experimental prototypes were built in Vladivostok. The third and last prototype continuously generated electricity, except when turned off to incorporate improvements, from 1992 to January 1997 in Armenia. (It was sadly destroyed during an armed rebellion by local religious fanatics who were unhappy with the Armenian government.) It generated a constant current of 6,800 amperes at 220 volts DC. That multiplies out to nearly 1.5 megawatts. The Armenian prototype dynamo's toroid weighed 900 kilograms and had a diameter of approximately 2 meters.

Cooling water is circulated through copper pipes wrapped around the toroid. The heat is expelled from the cooling water with a heat exchanger.

After a dynamo is assembled in a factory, the water is literally jump-started (by discharging a large bank of capacitors) to moving around the toroid. The dynamo's controls are temporarily set to generating enough of a modest amount of electricity to sustain itself, even while being transported from the factory to its site. For the Armenian prototype dynamo, two 10-farad capacitor banks (from Russian military radar stations) were used to provide the initial water motion (acceleration and excitation of water). Using a total of 20,000 joules, 100,000 volts with 0.05 amperes of current were applied to the Armenian dynamo for 3 - 5 minutes for starting its generation of electricity.

After these Russian radar capacitors were used to jump-start the Armenian prototype dynamo, a bank of buffer batteries sustained continuous operation when water motion and ionizing occurs. This battery bank contained 8 powerful 12-volt, 150-ampere lead batteries. The Armenian dynamo's sustaining input power was 14,400 watts. The nominal maximum output power is nearly 1,500,000 watts. Once, the output current was accidentally increased to 40,000 amperes for almost a minute. Fortunately, the power was reduced to a safe level before the water started to boil. Internal coils (windings) control water velocity and therefore dynamo power.

The dynamo's production cost is estimated at \$500 per kilowatt which is competitive to nuclear power's capital costs of \$5,000 per kilowatt, windmill capital costs of \$4,000 per kilowatt, etc. A well-run nuclear power plant can generate power for 1.5 cents per kilowatt-hour, coal 1.8 cents, natural gas 3.4 cents, and oil 4.1 cents, on the average. The dynamo's operating cost would be approximately .1 cent per kilowatt-hour with no external fuel needed nor pollution.

Dynamos could replace all nuclear power plants, solar installations, wood-burning furnaces, hydro-electric dams, windmills, fossil-fueled power plants, etc. Satellites, locomotives, heavy trucks, buses, airplanes, and ships are obvious transportation applications. It does not seem that dynamos can be made compact enough to power electric cars although it certainly would be worth trying.

A Forbes article states that PECO (formerly Philadelphia Electric Company), with an income stream to back it up, was able to sell on Wall Street \$4 billion worth of bonds paying 5.8 per cent. A dynamo manufacturer could simply sell bonds to build and operate dynamos at a low interest rate. Dynamo loan payback times may be in the ball park of a half-year to a year, depending on the local electricity market price. As soon as a dynamo is paid for, the revenue from that time on would be almost pure profit.

Once a track record is established by successfully installing a few dynamos, the dynamo company could raise money to build more dynamos by simply selling billions of dollars of bonds instead of stock. So therefore, there wouldn't be any dilution of ownership.

A recent IEEE Spectrum article stated that world demand for electricity increases approximately 500 megawatts every day. To put this in perspective, the equivalent of another Hoover Dam would have to be built every four days to keep up with world electricity increase demands. Or, a dynamo manufacturing company would have to build another 500-megawatt dynamo every single day of the year to keep up with world electricity increase demand in addition to replacing all existing generators fueled by hydro, nuclear, and fossil fuels.

The following is a highly condensed summary of the "Description" of the dynamo's Russian patent IPC H 02 K 44/00 "Method of deriving of electrical energy and organization of Gritskevich's MHD-generator for its realization":

The dynamo is a sealed toroid filled with distilled water with heavy water (deuterium oxide) added. Movement of water inside the closed loop and use of unique properties of water as a polar liquid cause a release of electrical energy as an outcome of a rupture of hydrogen connections. Additional electrical energy is drawn from nuclear reactions and micro-cavitational processes. The liquid gets ionized and moving around the toroid at start-up time by a running magnetic field with the help of stimulating electromagnetic windings.

A layer of segnetoelectrical material covers the internal surfaces of the toroid. 32 electrodes made from a hard-alloy material are inserted into the toroid at equal distances apart. These 32 electrodes are connected to a power supply. Additional stimulation windings are also connected to the power supply.

The partially pre-ionized (on the part of the heavy water) water gets ionized further by the high-voltage discharges by the 32 electrodes. With the help of the stimulation windings, a running magnetic field is created which moves the water in one direction inside the toroid. An electromotive force gets created by the electromagnetic induction in a separate set of windings. During the movement of the water stream free electrons get created, and an additional energy gets emitted because of the water's friction (viscosity) against the layer coated on the inside surface of the toroid, because of electrostatic breakdowns of cavitational-vacuum structures, and because of the ongoing nuclear reaction. 100 times as much electrical energy is generated as required for electrical energy input.

Note that the hydro-magnetic dynamo is always producing electricity once it is manufactured and jump-started at the factory. Whenever a locomotive is parked in sub-freezing weather, its hydro-magnetic dynamo's electricity output would be used to heat the dynamo's containment to prevent its water-filled toroid from freezing.

Whenever a locomotive is parked, its hydro-magnetic dynamo's excess electrical output could be sold to the local power grid.

IPMS Energy Storage/Battery Device

During the summer of 1984, airborne intelligence surveillance teams of the United States Air Force, operating out of specially configured and equipped Boeing 707 airframes (called AWAC's) electronically detected (and then shortly thereafter photographed) bursts of coherent light of

enormous power originating in the vicinity of Dushambe, Turkministan. The bursts of light, a brilliant blue-green color, lasted just a few seconds and were shifted almost to the ultraviolet end of the light spectrum. The “laser” beams were directed upwards out of the atmosphere towards American military communications satellites.

At precisely the same time the AWAC’s detected and photographed the laser bursts (they were referred to in that jargon by American military analysts but later proved to be something almost entirely different), several of the satellites essential to America’s global military command and control communications systems became inexplicably inoperable.

The Defense Intelligence Agency, under the direction of the National Security Council and assisted by the National Security Agency, escalated its surveillance of the remote site in the Ural Mountains from which the bursts first originated. For several months, during a concerted campaign of uninterrupted observation by AWAC’s and American spy satellites, no additional bursts were observed or reported. Then, without warning, in the middle of the night nearly seven months later, AWAC’s crews operating just outside the territorial airspace of Afghanistan detected similar laser bursts of lower intensity during a period of intensive localized ground warfare.

The Afghanistan bursts were apparently aimed at targets under attack by Soviet infantry units. The laser bursts continued in a sustained, localized but obviously mobile attack pattern, as frequently as four or five times per hour, until nearly sunset of the next day. Photographic evidence gathered at the time by the AWAC’s crew, and later corroborated by photographs taken at the actual site of the fire fight and forwarded to the U.S. for analysis, showed that the targets of the laser bursts were ammunition and fuel supply depots located in the remote desert. Several of the ammunition and fuel caches had apparently been destroyed during the attack, as demonstrated by the evidence of explosions, fire, smoke and residual infra-red heat patterns detected, photographed and electronically recorded on-board the AWAC’s.

All this information was transmitted (via encrypted communications bursts, routed through the military Global Command Control satellite system) to the National Security Agency (NSA), located at Fort Meade, Maryland. Analysts there recognized that they were looking at evidence of a weapons system which had never been observed before. They did not know what had produced the laser bursts. But they did know that the technology which made such a thing possible was not available to the countries participating in the NATO Convention. They were terrified at the implications of such a development.

Within hours, the information was packaged into classified documents and conveyed to the Joint Chiefs of Staff. The Joint Chiefs examined the information while they were being briefed by the AWAC’s crews which had witnessed and recorded the events. After the briefing, the crews were dismantled, and their various members stationed far away from one another, with orders never to discuss the events they had witnessed. Officially, the laser bursts never had occurred.

Secretary of Defense Frank Carlucci took delivery of the packet at his residence in Falls Church, Virginia, three days later, at a private, secret meeting held in the middle of the night. No one has yet adequately explained why the Joint Chiefs waited three full days to brief the Secretary. Early the next morning, he was driven in a specially prepared bulletproof limousine to the White House. He personally delivered the information to the new President of the United States, Ronald Reagan. The content of the Secretary’s report had an immediate, measurable impact.

It was this series of events which principally precipitated the Strategic Defense Initiative, a program of military defense and reprisal based on America's state-of-the-art satellite-borne laser-optical and particle accelerator technologies. The S.D.I. system was intended to provide the U.S. with a meaningful deterrent to further aggressive use of the technology developed by the Soviet Military.

There was only one problem with this system, aside from the fact that its astronomical costs almost bankrupted the American economy: it did not work. S.D.I. was designed to respond to a kind of technology which was not achievable in the West, and which could not be explained by any of the models, materials, technologies or sciences known in the West.

In 1985, the top-secret military version of the space shuttle, code named Atlantis, embarked on a special orbital mission. One of its mission assignments was to retrieve, examine or photograph the military spy satellites which had been disabled by the laser bursts recorded in 1979-84. The results of this investigation have not been declassified or released in any but the most censored version to the public. What we do know for certain, as a matter of publicly available non-classified information, however, is that each of the disabled satellites appeared to have had at least one, and in some cases as many as four or five precisely measured holes, approximately the size of an American silver dollar, melted completely through them from the outside.

The photographs taken of the satellites show evidence of intense heat, charring and carbonized residue evenly distributed around the perimeter of each hole. The evidence is clear and unmistakable – the satellites were disabled by a coherent beam of some sort, characterized by such intense energy that it was possible to melt consistently measured holes through the exterior and interior components of American military satellites, after having passed through the atmosphere of the planet and into space for as many as 325 miles. Such a thing has scarcely been dreamed of by the American military, much less put into any but the most nominally effective operational form.

After more than ten years of political, economic and technological wrangling, and after the expenditure of more than one hundred twenty billion dollars in largely ineffectual research and development efforts, it is inescapably clear that no amount of money or political pressure, no amount of geo-political posturing or economic sanctions was going to compel the disclosure or replication of the technologies which produced the results photographed over the Carpathian Mountains and the Afghanistan deserts. The Soviets had developed a weapons system which was so revolutionary that it could not be explained, replicated or defended against.

The Reagan Administration's lack of specificity about the nature of the implied threat to which S.D.I. was supposed to respond subjected the Administration, the Defense Department and the R&D proponents of the most prominent American aerospace corporations to an endless barrage of charges by the Press and the Congress. They were characterized as being disingenuous and accused of being unreasonably secretive during successive appropriations battles in the Congress.

The truth of matter is that the Administration and the Pentagon were not being disingenuous at all. They simply could not admit to the American public that they were attempting to develop an effective response to a weapons system which they did not understand and could not replicate.

There are a number of issues intrinsic to this set of circumstances, along with several dozen others which, though less well known or economically dramatic, are no less important from a technological standpoint. It is certain that the implication of these technologies has not been lost on those multi-national corporations whose entire capital structure may be threatened by the new

sciences, technologies and materials which have been developed in secret laboratories, hidden in caverns excavated beneath the Carpathian Mountains, in the former Soviet Union.

Over the past decade the West has enjoyed occasional gratuitous glimpses into the heart of Soviet science. Attempts to disclose or discuss these developments in the press have been ruthlessly suppressed by powerful special interests vested in both the public and private sectors.

The science which underlies the series of events recounted here remains at the outer limits of the most advanced technology of which the West is capable. The questions posed by the military and corporate analysts about this laser beam weapons system are far-reaching in their scope and implications. Some of them are illustrative:

1) New Model of Quantum Mechanics: The sciences and models of quantum mechanics which produced such stunning recent developments in the West as the laser and maser make quite clear how much energy is required to create a beam of coherent light powerful enough to penetrate the atmosphere, retain its coherence in spite of atmospheric diffraction (and other effects described in quantum mechanics as “thermal blooming”), and melt a two-inch hole clear through a satellite made of the most sophisticated alloys ever produced in the West. Except for limited short-distance demonstrations conducted with industrial grade lasers used in cutting operations, there is no known combination of materials or technologies extant in the West to make such a thing possible.

2) New Materials: The materials necessary to create an electrical charge large enough to power a device capable of producing such a beam certainly do exist. In quantum mechanics the term large enough does not make sense, but we can agree for the purposes of this discussion on the effect of it as represented by such commonly accepted constructs as frequency, voltage, current and ionic flow rates [as distinguished by the phenomenon of resistance].

Hydroelectric plants and large, fixed-base nuclear power plants are capable of producing enough energy to theoretically power such a device. But the energy bursts in both the Carpathians and the Afghan desert were generated by sources which moved from one location to another. In order to do that, several additional considerations must be addressed:

a. Portability: The power source would have to be transportable or be capable of storing sufficient energy to repeatedly power such a device. Western technology cannot produce either a portable power production unit or energy storage system capable of the performance requirements everyone agrees must be met to make the weapons system work, either in the laboratory or in the field. System portability was the most puzzling feature of the NSA/DIA report.

When carefully analyzed, the computer-enhanced enlargements of the photographs taken by the spy satellites and AWAC’s crews failed to provide evidence of any tracks which could be attributed to wheeled or tracked vehicles operating in the precise locations and at the same time as the laser bursts which were observed. The implications of this set of circumstances was almost too much to believe – the devices were apparently either hand held or transportable and rechargeable in such a way as to allow them to be transported by one or more foot soldiers, without vehicular support.

b. Enormous Power Requirement: The materials and technologies used to construct a device capable of generating a beam of such enormous power and magnitude would have to be sufficiently advanced to enable the components to be transported without damage over significant distances in unpaved areas of very rough terrain. Such strategies, engineering techniques, construction technologies or materials do not exist in the Western inventory.

c. The continuous repetition of the laser bursts suggests that the devices can be operated repeatedly at short intervals of 12-15 minutes. This means they can be triggered with significantly higher frequency and intensity than anything which can be produced in the West, even for laboratory use. Industrial strength lasers used to cut metals require careful setup, accommodate only limited use in short bursts, require extensive cooling and must be continually recalibrated. These limitations obviously did not apply to the devices being operated in the Afghan desert. Analysts at AMTL agreed that the units would either have to be recharged via an external, independent device or somehow be capable of self-recharging in the field.

Such a thing is almost unthinkable by current Western military standards. Not only can we still not replicate the technology in any meaningful form, but the Soviets had refined the technology to a point which allowed it to be carried on the shoulders of ordinary foot soldiers and recharged in the field without motorized support.

Unbelievable! How was such a thing possible? According to some of the highly qualified scientists who scrutinized the photographs, it is not possible. The “Not Invented Here” syndrome is alive and well in the American engineering community. Some of them still insist that the pictures were either fabricated or demonstrate something completely different than this narrative suggests.

3) Energy Recharge-Batteries: How did such high-intensity laser beam generators get recharged in the middle of the Afghan desert, in the absence of powered support vehicles or fixed-based power plants? There are a number of possible alternatives. They could have been powered by some sort of advanced battery technology. It’s possible, but if the battery technology used in the West is used as a model to support such a thesis, it would take a bank of the most sophisticated batteries ever designed by NASA, arrayed in series and parallel configurations larger than five full-sized Soviet T-60 tiger tanks to power such a device.

This theoretical battery bank, operating at 100% efficiency (which is not practically or theoretically possible; the best batteries manufactured in the West operate at less than 60% discharge efficiency), could conceivably produce enough direct current voltage (in a zero resistance super conductive circuit, which is not possible, either) to perhaps produce one burst of light equal in intensity to 20% of the power required to burn a 2-inch hole through a satellite moving at 20,000 miles per hour at a distance of 325 miles.

Soviet ground forces were generating bursts of this magnitude every 12-15 minutes for more than 10 hours with nothing but ground troops. During eight hours of this exchange, it was totally dark. Something pretty remarkable must have been going on to make such a thing possible.

4) Energy Recharge – Solar Cells: Another alternative would have been to have whatever energy storage devices were being used to power the “laser cannons” recharged by sunlight. The state-of-the-art in photo-voltaic cells produced in the West simply would not support such an undertaking. The very best solar cells ever produced in the West have been produced by the Japanese.

These cells operate at a maximum of 19% efficiency - that is, they convert as much as 19% of the ambient visible sunlight shining on a clear, cloudless day into ion flow, which then becomes low voltage direct electrical current flowing through a circuit. The Japanese panels require months per section to manufacture and literally cost more than their weight in gold to manufacture. They are very heavy and are so sensitive to vibration and calibration that once installed, they cannot be moved at all.

Photo-voltaic cells capable of providing enough electricity to recharge a theoretically infinite energy well would have to operate at efficiencies of 50-80% to recharge batteries of infinite electrical capacity with enough power to trigger such a device. Such cells would have to be very light weight and able to withstand extremes of heat, cold, vibration, dust, wind and other conditions encountered in a hostile battlefield environment. Nothing like that exists in the Western technological arsenal.

5) Dielectric Materials – Transformers and Capacitors: Another consideration must be reconciled before this issue can be theoretically put to rest. In order to produce a burst of coherent light of sufficient intensity to have the effect which was observed and recorded by the surveillance teams, the voltage and amperage required to support such a device would have to be staggeringly high. In order to operate at all, the voltage supplied to the system must be released all at once, not in a continuous stream but in a single coherent burst so intense that any materials known in the West would either evaporate or melt. Not only would the best dielectric materials known to Western Science melt because of the heat produced by such enormous energy bursts, but before a bolt of energy of this magnitude could even be released to such a device, it would have to be accumulated and stored somehow.

A similar set of requirements of a less dramatic type is present in all the electronic devices manufactured and marketed in the West. This includes the entire range of electronic devices such as VCR's, computers, televisions and sound components, telecommunications, information storage, transmission and retrieval systems of every kind. We could not live as we do without them. The components which convert, store and release ion flow into the circuitry of these devices are known as transistors, transformers and capacitors.

This discussion delves into a slightly technical area here, so non-scientific types will need to either become familiar with the fundamentals of electricity to understand what is meant or simply give it a possibility that what is developed in the next section is a true representation of the way such things actually operate. The discussion deals with such commonly used and seldom understood concepts as voltage, current, frequencies and resistance.

(a) Transformers convert voltage at one level of current (amperage) to either higher or lower voltage levels. When the voltage is increased, the amperage or current is proportionately decreased. A low voltage produced at a high current level can be transformed into a much higher voltage at a proportionately lower level of current or "power."

(b) Capacitors: The decrease in amperage which accompanies a transformation of low voltage to higher voltage is often compensated for by a device known as a capacitor. In the most simplistic terms, capacitors "store" electrical energy until the amount of voltage and current reach a certain minimal threshold. When that point is reached, the entire store of energy is released all at once in a single burst.

The tantalum materials used in the West to manufacture such devices conform to certain standard rules which are commonly accepted by electrical engineers. These rules have only recently been stretched by new technologies and materials developed in the West. For the purposes of this discussion, though, it is safe to say that electrical engineers have long relied on these rules because they have always produced the same results when applied in the same way. Here's an example.

It is standard engineering fare which dictates that a transformer capable of accommodating one volt at one ampere of current across a grid of one ohm of resistance will be one cubic meter in

dimension. If followed to its logical conclusion, this standard rule of electrical engineering would require that a transformer capable of supporting a laser burst device of the kind operated by the Soviet ground forces in the Afghan desert would have to be approximately the size of a building built on a base 100 feet to a side, nearly 150 feet high.

Surely such a device could not have been hidden from the AWAC's eye in the sky which can clearly photograph the letters on a license plate from 60,000 feet altitude, nor could it have been moved on the shoulders of ground troops without wheeled vehicular support. The fact that there was absolutely no trace of such a huge, massive transformer device (or any other kind of structure or vehicle which could be construed to serve that purpose) means that something else must have been used instead. Military analysts had absolutely no idea what it could have been.

Such a burst system cannot operate without a capacitor of some sort. A capacitive device capable of storing the amount of energy required to power a single burst from a laser cannon, made of the most advanced dielectric material known in the West, would have to have been equally massive and, further, would have to have been cooled by some sort of strategy which would have been instantly and unmistakably detected by the infrared cameras and spectroscopic scanners used aboard the AWAC's and the spy satellites which investigated the scene.

The practical requirements of such a system are best demonstrated by the massive equipment required to operate and cool the Super Conductor Super Collider linear particle accelerators recently designed by the United States and Japan. No evidence of any such capacitive device was recorded in either the Carpathian Mountains or the Afghanistan desert. How can we explain it?

Without going into any detail about how the technologies were developed, suffice it for now to say that the Soviet ground forces in Afghanistan were equipped with a prototype of a hand-held plasma beam accelerator, the likes of which had only been roughly imagined by American military analysts. The device relied on some innovative strategies. Among these were:

Energy Storage Devices: The power source for the Soviet light cannons was comprised of a back-pack array of specially designed energy storage devices. The closest thing we have in our vocabulary to compare to them is described by the term "battery." In the limited sense that these devices store electrical energy, they are batteries. Any other similarity to the batteries we are accustomed to in the West ends there. The literal translation of the Russian name for them is energy accumulators.

The batteries relied on in the West are based on the chemical properties of components which, when combined in certain configurations and proportions, interact chemically with one another. The result of this chemical interaction is that it creates both heat and a stream of liberated ions – electricity. In dry cell batteries, the process of chemical interaction is one way – once they have been expended, they are simply disposed of. It is estimated that more than 12 billion expended dry cell and lead-acid batteries are dumped into America's landfills every year.

Other batteries are designed and constructed so that the chemical reactions which liberate electrical current are reversible in some degree. These rechargeable cells are characterized by the lead-acid batteries which are used in automobiles and in commercial and industrial applications. Various strategies have been developed to make batteries relying on chemical reactions maximally effective, but the theoretical limits of effectiveness of such devices have surely been reached.

A consortium of aerospace companies working with NASA recently announced the development of an advanced sodium-hydride-based rechargeable cell which is the most efficient battery yet invented in the West. Unfortunately, it operates at an ambient temperature of 2000 degrees centigrade and, if allowed to reach temperatures outside a very narrow safe operating zone, will explode with the force of a small thermo-nuclear device of approximately ten-kiloton yield. It is not safe, but it is the best Western science has come up with.

The energy storage device developed by the I.N. Frantsevich Institute for Problems of Materials Science (IPMS), Kiev, Ukraine, works on a completely different principle. Its construction is the result of a completely unique nonlinear quantum mechanical model which makes it possible to create crystalline lattices of absolutely pure carbon (and other materials) in sheets of infinitely variable dimension which are exactly one molecule thick. The crystal formation techniques and the whole body of new science which allows for their creation in the first place are completely unknown to Western science.

The mono-molecular sheets deposited by this technique are wrapped back and forth on top of each other, more than one million times per millimeter, and are separated from each other by a distance of less than one atomic diameter. At this level of construction, the material becomes subject to the rules of quantum mechanics which are almost entirely probabilistic. That means a whole atom of carbon (or almost anything else except an electron or photon) will not fit in the space which separates the lattice sheets.

When viewed under an electron microscope, the sheets produce a pattern which looks for all the world like an endless field of four-sided pyramids, connected base to base, on a single plane, with the tips of the pyramids protruding endlessly, uniformly upwards. When wrapped back and forth on top of each other, these sheets of pure carbon crystal, made of carbon molecules shaped like trillions of identical tiny pyramids, all arrayed endlessly in identical formation, are positioned so that the tips of the pyramids on the bottom sheet are matched with the tips of the pyramids on the top sheets. What remains between the pyramid tips are open “spaces” or energy wells.

The quantum physics which describes the characteristics of the energy wells created between the layers of crystalline lattice is largely unknown to Western physicists. The Soviet model predicts with a high degree of probability that the quanta of energy referred to in the West as electrons (and, in some cases, photons), the stuff of which electricity is made, will, when introduced to the lattice structure, search, find and fit into the energy wells with military precision.

During the recharging or loading phase, the energy storage devices made of the crystalline lattice material channel one electron at a time into each well created by four carbon pyramids on the bottom layer and four carbon pyramids on the top layer. Because the rules of quantum mechanics which operate in this tiny environment demand it, each electron or quanta of energy has a certain polarity, spin and “color” (and other mathematically defined characteristics) which must be accommodated if it is to find, fit and stay in an energy well. Interestingly enough, when a current is applied across the lattice-work structure, the electrons behave precisely as nonlinear quantum mechanics predicts they will. They flow much like a fluid into the lattice field, then separate into individual energy quanta and spin into the last energy well in each layer, automatically adjusting their individual spin, polarity and color to match their characteristics to fit the requirements of each well, until the lattice is full.

Because no chemical reactions are involved in the process of marching electrons into or out of the energy well fields, there is no resistance in the circuit. In the absence of resistance, the electrons fill

the wells at light speed, never missing a space, automatically adjusting polarity, spin and other characteristics, and creating no heat. The amount of time required to “charge” such a cell is less than 5% of the time required to recharge a conventional chemical battery of similar voltage and current.

The validity of $E = MC^2$ is called into question by the way these devices function. When the battery is fully charged, it actually demonstrates more mass than when the energy storage device is empty or discharged. The laws of quantum mechanics relied on in the West state categorically that this is not possible. It is the answer to the question, “How much does a beam of light weigh?”

According to the Soviet model, this is precisely as it should be. When this phenomenon was first demonstrated to scientists in the West who were testing the energy storage devices at INEEL in Idaho, they were thunderstruck. The quanta of energy, or electrons as we refer to them, which are poured into the crystalline lattice demonstrate characteristics of mass even though they are bundles of pure energy sitting in stasis, literally at rest. The characteristic of mass is verifiable – you can measure it by weighing the energy storage devices before and after they are charged. When they are charged, they demonstrate appreciably more mass than when they are fully discharged.

If this is confusing to you, to suggest that pure energy can be shown to demonstrate verifiable mass while at rest (in stasis), perhaps you can begin to appreciate how fundamentally different the physics of all this is when viewed in the terms of Einstein’s classic equation $E = MC^2$.

The existence of this technology clearly is proof positive that not only does energy demonstrate the characteristics of mass, but it does so in a state of non-motion or stasis, sitting idly in an energy well. A state of stasis is a very far cry from the terminal theoretical velocity required by the constant in Einstein’s equation, equivalent to the square of the speed of light.

The scientific implications of this phenomenon are truly staggering. At very least, the verification of mass as a property of energy quanta at rest suggests that Einstein’s theory of relativity may be altogether incorrect as a means of describing the dynamics underlying the real nature of the material world and its relationship to energy.

The existence of this technology suggests at very least, that energy and mass are equivalent characteristics of all things which are manifest in the material world. It is this fundamental contextual difference which distinguishes the Soviet model of quantum mechanics from the Western model. “The proof of the pudding,” they say, “is in the eating.”

Theoretical physicists may argue endlessly about the validity of the assumptions relied on by the IPMS scientists to develop their unique sciences, technologies and materials. But they cannot argue about the existence of the materials which have arisen from that context. They are as real as they can be. And they are unlike anything ever seen or contemplated in the West.

In the same way energy quanta stored in the energy wells of crystalline lattice materials demonstrate complete mathematical satisfaction with staying there indefinitely, when allowed to flow out in the form of an outgoing wave of electrical discharge, these quanta (electrons or photons, as you prefer) march right back out without resistance at light speed through a closed circuit to another use.

When these energy storage devices are discharged, they demonstrate other attributes which are not known in Western science, and which, because of the very nature of the chemical reactions we are accustomed to, are not theoretically possible according to conventional wisdom. Conventional

chemical batteries, when fully charged, produce electric current at a useable voltage for perhaps 30-40% of the total discharge cycle. After that, either the voltage or amperage (or both) drop to low enough levels that the devices being powered by them cannot recognize or use the electrical current which remains available. At that point, the batteries either have to be recharged or replaced.

The crystal lattice batteries have been demonstrated to produce precisely the same current and voltage levels throughout 98% of their discharge cycle. They produce no heat during discharge, regardless of the rate at which they are discharged. This is absolutely contrary to our experience with batteries, transformers or capacitors. Until the crystalline lattice materials were specifically engineered to register an electronically detectable blip at 95-96% discharge, it was impossible even for the scientists who developed them to distinguish a partially discharged battery from a fully charged one.

There is another characteristic which is intrinsic to energy storage devices which comes into play here. It is a characteristic of materials which is described as energy density. For non-scientific readers, this concept can simply be construed to mean the amount of measurable electrical current which can be produced by any device or material when its mass is converted into electrical energy. The concept is expressed in mathematical formulas as the number of watts and hours of consumable energy which can be converted from each kilogram of material. It is expressed as watt-hours per kilogram.

Here is an example we can all understand. Consider gasoline. When converted into electrical power at 100% efficiency, gasoline has been theoretically shown to have an energy density of between 550 and 600 watt-hours per kilogram of mass. In easy terms, that means that if one kilogram of gasoline were converted into pure electricity at 100% efficiency (with no loss due to heat, resistance, waste, etc.), the reservoir of energy would power a 100-watt light bulb for 5.5 to 6 hours.

Most of the high-end conventional automobile batteries of the lead-acid variety operate at an energy density rate of between 20-25 watt-hours per kilogram. The best NASA sodium-hydride batteries operate at 48-50 watt hours per kilogram. The energy accumulator devices which have been tested at the Idaho National Electronic Laboratories have demonstrated energy densities of between 850 and 1050 watt-hours per kilogram.

What does this mean in practical terms? It means, for one thing, that for the first time in the history of science an energy storage device has been created with an energy density which is greater than gasoline or any other refined fossil fuel. It means that devices which rely on these energy storage technologies can theoretically be designed to store and deliver clean electrical power at higher rates of efficiency than any fossil fuel ever discovered.

The global implications of this technology are irresistible. It means, among other things, that the technology exists, right now, to eliminate the need to build another nuclear power plant or dam another river to produce hydroelectric power. It means we can no longer justify burning another ounce of petroleum, another piece of coal, another cubic centimeter of natural (or unnatural gas) or another tree to produce heat, electricity or power for any purpose, including transportation.

When coupled with the plasma beam devices being tested by the Soviet infantry units in Afghanistan, these energy storage devices operated at such unbelievably high rates of discharge efficiency that they made it possible to repeatedly induce huge electrical discharges in a highly mobile configuration.

The same technologies which were used to produce the energy storage devices have been adapted to create transformers and capacitors with previously unimaginable performance characteristics. Instead of adhering to the conventional western model of “One Volt at One Amp across a resistance of One Ohm equals One Cubic Meter,” the Soviets have produced a capacitor which measures more than 1200 farads at 10,000 amperes in a package the size of a tuna sandwich.

When tested by the Technology Materials Testing Laboratory of the Defense Department at the Pentagon and at the I.N.E.E.L. in Idaho, totally new testing equipment had to be designed, engineered and constructed just to test the devices. The scientists at those laboratories had never tested anything like these materials before.

Instead of having to house transformer and capacitor devices in a series of trailers towed by diesel tractors or huge fixed-base facilities, the operating apparatus which supplied transformed power and high intensity capacitive bursts to the light cannons weighed less than ten pounds and could easily be transported in a backpack by a foot soldier.

One final question remains unanswered. “How did the energy storage devices, once dissipated or discharged, become recharged in the field, especially in the dark of night?”

The back-pack plasma beam device detected by the AWAC’s during limited combat use in the Afghanistan desert was powered by energy storage devices constructed of crystalline lattice materials. After each laser burst, the energy storage devices were recharged every 12-15 minutes (nearly 45 minutes in the dark of night – the residual ambient heat of the desert is a very efficient source of infrared energy) by sunlight, collected and converted to electricity by four-foot square panels of “solar cell” material arrayed on a pole like a flag, each weighing less than ten ounces.

The electrical energy stored in the back-pack energy accumulators was transformed into enormously high voltages and released at almost unbelievably high current levels when the super-capacitors were sufficiently charged. The beam of “light” detected by the AWAC’s crews was a field of plasma, flowing at the speed of light and demonstrating characteristics of mass (and, therefore, kinetic energy). The phenomenon represented by these bolts of lightning are not comprehensible according to the model of quantum mechanics and plasma physics currently being used in the West.

Battery packs utilizing these energy accumulator materials have been designed, produced and tested which provide more than 14 hours of continuously transmitted power on a single charge to conventional hand-held cellular telephone devices. Similar improvements in conventional battery/energy storage capacity have been developed and are being tested for such devices as video camcorders, laptop and portable computers and other similar consumer, commercial, industrial and military applications.

IPMS research in the field of layered crystals has thus led to the creation of capacitors with a very high level of capacitance (measured in farads). This technology is based on a revolutionary production technique which forms polarized surfaces of one molecule thickness, separated by less than one atomic diameter of space, held together by weak Van der Waals energy forces. The special properties created by these layered crystalline structures provide previously unimaginable internal surface areas. Super capacitors are constructed of layered materials numbering more than one million dipole sheets for each millimeter of crystal thickness.

These devices provide a virtually limitless number of charge-discharge cycles at astonishingly rapid charge and discharge rates. The potential impact of such devices on all electronic equipment currently being produced is incalculable, since virtually all electronic devices rely extensively on the West's state-of-the-art tantalum capacitance technologies.

At present, IPMS has on hand (among others) a super-capacitor roughly the size and dimension of a sandwich which develops more than 1,200 farads at 10,000 amperes. It also boasts production of a battery whose active mass energy density exceeds 850 watt-hours per kilogram. For the non-scientist (and all the rest of us as well) this means that a "battery" has been produced which, for the first time in history, produces more power per unit of mass than any fossil fuel ever devised.

Prototype testing of larger-scaled devices designed specifically for providing power to electric vehicles is currently underway. Prototypes are expected to be capable of sustained highway speeds of up to 70 miles per hour with a range of 525 miles on a single charge. The power plant for this application has been recently improved by the inclusion of a proprietary solid-state ceramic electric motor which weighs 7.2 kilograms and produces 100 horsepower on 12-volt direct current. For comparison, an electric vehicle employing a 100-horsepower electric motor performs the same as with a 500-horsepower gasoline engine.

If these performance attainments can be sustained in broad-based applications, electrically powered vehicles could be produced which would meet or exceed virtually all performance characteristics currently available in equipment relying on internal combustion, petroleum-based engines. Gasoline/diesel-powered transportation devices can be replaced by cleaner, more efficient and significantly less expensive alternatives.

The world market for current energy storage applications which will be superseded by these energy storage technologies is estimated to be in excess of \$24 billion per year (1991), exclusive of electric vehicle considerations.

Metamatter

9/25/1997 11:16 AM

From: Robert Bass

To: James Bowery<jabowery@netcom.com>;

CC: Robert W. Bass<rbrtbass@pahrup.com>; Gary Vesperman<vman@skylink.net>;

Subject: for the postulated "Bass page"?

Jim,

I just went to <http://www.generalstore.com/> and see nothing but "under construction, etc." Is this you, or someone else in another state? Do you know how to (reasonably economically) do Mass-eMailings? Say either from a rented Data Base of known Investors, or just blindly to "millions"?

How about posting the following

Potentially Awesome Speculative Investment Opportunity?

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Venture SEED Capital? Low Risk, AWESOME Payback!!!

I seek one or more High-Technology-Oriented "High-Roller" Nerves Investor(s) who would be intrigued by the following proposition (if demonstrably sound and absolutely genuine): Suppose you go to "Super Monte-Carlo" in the sovereign nation of Erewhon, and you come to a table with a Croupier who says:

"I have here a coin the size of a U.S. silver dollar, which is perfectly evenly balanced between Heads and Tails to 10 decimal places [with the edge for Heads in the 11th decimal place]; and a certificate from the US Bureau of Standards certifying it is not "loaded" to favor either Heads or Tails to the best measurements they can make.

"You can flip the coin yourself.

"I have here Certificates of Deposit for \$30 Billion in a centuries-old Swiss Bank of spotless reputation.

"My croupier's fee for allowing you to play is ridiculously modest.

"How much are you willing to wager on the honest flip?

"Now suppose the preceding scenario is repeated, except that several of the most reputable scientists in the world assure you that the coin is 'loaded' so that the chances of Heads are between 95% and 99%. Your own experts assure you that you have at worst One Chance in 20 of losing.

"Finally, the croupier says, you may play for \$150,000."

To recapitulate, the odds are 20-to-1 that you will win \$30 Billion, versus one chance in 20 that your entire \$150,000 wager will be lost.

Would you play?

=====

-----PRIVATE Communication-----

----- (NOT a Publication) -----

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I need Seed Capital of \$150,000 under circumstances exactly analagous to those outlined in the Risk/Reward scenario above. If "Heads" comes up, then my patented [Plasmasphere](#) technology can be escalated to a Metamatter technology, where by METAMATTER I mean a solid, *crystallized* fully-ionized plasma.

An ordinary crystal has nuclei spaced apart distances of about 10^{-8} cm, the [Bohr radius](#), because the [electron cloud](#) makes the atoms behave like little billiard balls of the size indicated.

However, in a plasma, the positively-charge nuclei and the electrons are equal in number, but the electrons are not in orbit around individual nuclei; they are "mixed up" as in a plum-pudding. Most plasma physicists will tell you that in order for hydrogen gas to be fully ionized (i.e., all electrons stripped from all nuclei) the temperature of the gas would have to be above 150,000 degrees Kelvin (i.e., 15 times hotter than the surface of the Sun). But this is demonstrably FALSE (both theoretically and experimentally).

If the gas is dense enough, it can be fully ionized at "low" temperatures, e.g. 5000 Kelvins [so-called "pressure ionization"].

Now suppose that the fully ionized low-temperature gas is condensed into the physical state of a liquid metal. I call this a Liquid Metallic Plasmoid (LMP). The characteristic of an LMP is that, like mercury, it keeps a constant volume; unlike a gas, it does not expand to fill all available space (if in a vacuum). The positive nuclei remain on average equidistant, and the electrons circulate around the dynamic lattice as in a giant crystalline molecule. Cook called it a "Cryscapade"; whereas others might call it a Liquid Crystal.

Fewer than a score people in the world understand that LMPs can exist. One LMP was photographed in half a dozen or so photos on the cover of the [Journal of Applied Physics](#) in 1957 by [later] Nitro-Nobel Medalist, physical chemist, Dr. Melvin Cook. The theory by which Cook explained his accidental discovery has been *independently* rediscovered (in 3 separate countries, USA, UK & France) by researchers seeking to explain the illusive natural phenomenon of Ball Lighting.

The late expert on High-Energy Lasers and Shock Tubes, Dr. Jay Blauer of Rockwell Rocketdyne, who died early of [leukemia](#), helped me to design an experiment that would prove beyond shadow of a doubt that LMPs can be created at will. The basic idea is to use a combination of Shock Tube technology and High-Energy Laser technology, with my patented Plasmasphere technology, in order to achieve in a non-self-destructive, reusable device, what Cook discovered accidentally with high-explosives in a self-destructive experiment.

Once the mere EXISTENCE of producible-at-will LMPs is achieved (for the Risk Capital of \$150K), it will be trivially easy to raise several million more for refinement of the device to move the LMP into a cryogenic [vacuum chamber](#) where (since it is electrically conductive) it can be magnetically levitated and allowed to cool by radiation.

Use of the Brush-Sahlin-Teller [Equation of State](#) (used to design the H-bomb) shows that as the LMP cools, its volume contracts, and it becomes more and more dense. There can be shown to scientists sufficiently expert to understand the evidence, a mass of recent experimental evidence (as well as expert theoretical evidence) that before the LMP gets down to room temperature it will crystallize into a Metastable Solid Crystal, namely a *new form of matter* never seen before on Earth!!!

The density will be intermediate between that of ordinary condensed matter and that of [neutron stars](#), wherein a teaspoonful weighs tons.

I propose to manufacture 3 kinds of Micro-Crystals of Metamatter: MSP, MSD, and MSD. Each addresses in a truly *revolutionary* way a trillion-dollar market, with a multi-billion dollar profit potential. In many ways, Metamatter will have a bigger impact on human civilization than any prior discovery, including both computers and atomic energy! In fact, consider the following:

MSP (Meta-Stable Protium [hydrogen]) will be the IDEAL room-temperature [Superconductor](#), which will revolutionized both the Computer/Electronics industry and the Electric Power industry.

MSD (Meta-Stable [Deuterium](#) [heavy-hydrogen]) will be the ideal 5th [Generation Cold Fusion fuel](#); when triggered by an infra-red photon of 17.7 eV, a micro-pellet will undergo a phonon-mediated and Lattice-Catalyzed ANEUTRONIC chain-fusion reaction to cleanly release the energy of 10

sticks of dynamite, to make steam for mechanical heat and conversion at 67% efficiency into electrical energy. This can make both homes and automobiles independent of the present electrical utility companies, though they will still need to buy the almost dirt-cheap MSD fuel micro-pellets from Metamatter Industries.

MSH (Meta-Stable Helium) will be the IDEAL [rocket propellant](#) for expanding human civilization into the [Solar System](#) (e.g. to colonize Mars); when a micro-crystal of MSH is triggered by the right frequency of laser-light, it will return to the form of gas as if it had been compressed by tens of millions of atmospheres of pressure; it will release 43 times more energy per unit weight than any conceivable chemical combination!

During the mid 1980s, the [Air Force Systems Command](#) sent a group of 7 or 8 Colonels who held Doctorates in the physical or engineering sciences to scour the USA for 9 months, in groups of 2 or 3, and to report back on what futuristic technology would have the greatest potential impact on the [USAF](#) and USA economy by the year 2000 if reduced to actual practice. They listened to 600 industrial and academic presentations and selected MSH as the greatest payoff (for least risk) choice! The USAF Rocket Propulsion Lab was supposed to issue 8 parallel contracts for 8 "crash" projects to see if bulk MSH could be manufactured. I was slated to get one of the 8 contracts, but my approach (through solidifying a helium LMP) was radically different from that of the other 7 selected proposers.

With MSH as fuel, one could take a 50 percent payload to Mars and back in two weeks! (Accelerate there and return at one gee.)

But a Princeton professor of Physics, Will Happer, then Secretary of the JASONS [advisers to DOD/DOE], advanced theoretical arguments which appeared to shoot down the practicality of the other 7 approaches, and the whole project was canceled. But Happer's arguments are totally irrelevant to my approach. Moreover, Happer was later Chief Scientific Advisor to [Admiral Watkins](#) (Secretary of DOE) when the ERAB Report was produced.

Those who understand the recent work of Arata and Zhang in which the aneutronic conversion of deuterium nuclei to helium nuclei inside of a palladium lattice is recorded in Real Time (inside of a sealed apparatus which contains a Mass-Spectrometer and which give ZERO helium when the heavy-water deuterium is replaced by ordinary-water hydrogen) know that Aneutronic [Cold Fusion](#) (CF) is a demonstrable FACT and that Happer and the ERAB Report were WRONG. Therefore it is logical to consider the possibility that Happer was also wrong when, before he shot down CF, he also shot down MSH.

There is ZERO risk in producing an LMP; it is just that 99.999% of all scientists are ignorant of Cook's work.

There is a slight technical risk in crystallizing an LMP at room-temperature; conceivably, it will remain liquid until below the temperature of [liquid nitrogen](#), in which case my proposal will have been a failure. But the payoff is so AWESOME, and the chances of failure so tiny, that the risk seems worth taking.

I can supply drawings of the Proof-of-Principle Process Prototype Plasmasphere demonstration designed by Dr. Blauer and myself. Jay Blauer told me that he could do the experiment in his spare time evenings and weekends "in two weeks" using shock-tube and laser equipment already in his lab at [Rocketdyne](#), provided he had \$10,000 cash for items and materials not on hand.

Several "reputable" labs have explained to me that they would not even consider bidding on doing the Bass-Blauer experiment for less than \$100,000. I have personal contacts at 22 government and private labs (such as JPL, SRI, LANL, etc.) which I would like to visit with my former graduate student Dr. Lou Puls (who, unlike me, is an accomplished experimental plasma physicist) to make joint presentations on the theoretical and experimental aspects of creation of an LMP, preparatory to asking them to bid. After 22 weeks spent in such visits, (and paying Dr. Puls Consulting Fees) I expect to have \$50,000 left to offer the Highest Bidder. I also expect that no one will bid less than \$100,000. But I also expect that out of the 22 presentations, at least several will become so excited that they will offer to Cost Share. In several labs, the working-level scientists interested in LMPs have told me, "If you can get the Management to pay attention, we have in place already a mechanism and a precedent to Cost Share."

Remembering what happened to Fleischmann and Pons it will accomplish naught for me to take the \$150K, rent the equipment, and do it in my own garage. Nobody will believe it, and nobody will pay any attention. However, if we spend 6 months getting suitable technical personnel of nationally reputable laboratories excited about the subject of LMPs, and then some lab with the prestige of, say, JPL or LANL or SRI, announces the production of an LMP, many other labs will immediately undertake to "catch up" and to replicate the result at their own expense. Once 3 or 4 labs have announced successful replication, no one will doubt and then it will be trivially easy to raise the venture capital to go from LMPs to solid, crystallized Metamatter micro-crystals of MSP, MSD, and MSH.

I can supply a large amount of written technical material to anyone who is interested in raising the \$150,000 seed capital required to get Metamatter Industries off the ground (and for me to file the pioneering Patent Applications, and since I am now licensed to practice Intellectual Property Law before the PTO I can do it myself at no extra expense – as did the physicist/patent-attorney who invented the Xerox process).

This will be BETTER than getting in on the ground floor of Xerox or Polaroid or [Microsoft](#)!

Sincerely,

Robert W. Bass, M.A. Oxon, Ph.D.
Dr. Robert W. Bass, Registered Patent Agent 29,130 [ex-Prof Physics]
Inventor: Topolotron, Plasmasphere, issued; QRT Cold Fusion, pending
P.O.Box 1238, Pahrump, NV 89041-1238; phone/FAX (702) 751-0932/0739
Voice-Mail: (702) 387-7213 e-Mail: rbrtbass@pahrump.com

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XXX.YYY
XXX Venture Partners

Dear XXX,
Have you got your _____ Fund off the ground yet? Did you receive the Proposal I sent you last week?

Do you agree that the logic of the Analogy I used for the proposed Low-Risk, AWESOME Payoff, "Proof-of-Principle" (POP) [Experiment](#) is sound? If a rational Investor were convinced (e.g. by the photos published by Nitro-Nobel Medalist, Melvin Cook) that it is possible to put a plasma in the state of liquid metal (Liquid Metallic Plasmoids, or LMPs), and that the ONLY risk is that when cooled to room temperature they will not yet crystallize [but won't crystallize until down below, e.g.. the temperature of liquid nitrogen], which risk will be taken by OPM [[Other People's Money](#)] when the scientific community realizes that LMPs can be created at will, and that there is ZERO risk in performing the proof-of-principle demonstration experiment to convince them of this fact, and that this can be done for as little as \$150,000 (which will also permit Patent Applications ensuring the inside track when LMPs get crystallized), don't you agree that the Reward to Risk Ratio of $\$3 \times 10^{10} / \$1.5 \times 10^5 = 2 \times 10^5$ multiplied by the probability of crystallization at room temperature (which is supported by hundreds of theoretical papers on MSH and at least one recent paper in Physical Review Letters on MSP, as much, much better than 50%), namely an EXPECTED REWARD/RISK RATIO of more than 100,000-to-1 implies that this Proposal is "better" than any proposal made in this field yet, when you note that each of the 3 main products to be manufactured from crystallized LMPs, namely MSP, MSD, and MSH, EACH separately addresses a different Trillion-Dollar Market with a clear Profit Potential of more than \$10 Billion?

Moreover, this is a Proposal in which the Investor who RISKS \$150K will know within a mere 6 or 7 months WHETHER OR NOT Phase One of his speculation has paid off! (And it is highly likely that the Absolute Answer will be known within another 3 months, considering how fast the scientific community reacts to something, e.g. High-Temperature Superconductors, which is both surprising and EASY to replicate!)

Please tell me when a Speculative Investment Possibility better than this one has last crossed your desk? (I'll bet, NEVER!)

Regards,

Bob Bass

Dr. Robert W. Bass, Registered Patent Agent 29,130 [ex-Prof Physics]
Inventor: Topolotron, Plasmasphere, issued; QRT Cold Fusion, pending
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Electrino Fusion Power Reactor

Gordon L. Ziegler has discovered how to make a clean electrino fusion power reactor capable of generating up to a net of 1880 megawatts of DC electricity. The proposed energy source would produce no carbon emissions and no radioactive wastes. (By reversing the order-to-disorder arrow in the second law of thermodynamics, a \$50,000,000 electrino fusion power reactor could be built which would also reverse all aging, disease, and decay processes within a one-mile radius.)

Power output, however, cannot occur in this system without the simultaneous operation of two aspects of the invention. One is an accelerator-collider making a field reversing the order-to-disorder arrow in the second law of thermodynamics in a controlled area. Among other things, that field makes the other aspect of the system (the power source) efficient enough to be self-sustaining and prevents the formation of radioactive wastes.

Electrons are generally regarded to be structure-less spinning point charges. But that contradicts a reasonable postulate that occurred to Gordon L. Ziegler in 1967: "A spherically or cylindrically symmetric smooth charge distribution cannot have detectable spin." Electrons have detectable spins. Therefore they must not have smooth structure-less symmetric charge distributions. They must be lumpy and have internal structure. An application of the Parsimony Principle shows that they must be composed of two half-charges orbiting each other at the speed of light. The reason scientists concluded that the electron was structure-less was that it could not be blasted apart in collisions up to 700 MeV each particle.

But in Ziegler's model, electron sub-particles are bound together by confinement by a speed of light barrier (they are trapped going faster than the speed of light). They cannot be blasted apart, even though they are two particles.

The two sub-particles of electrons make a whole different structure for matter than quarks and leptons. The sub-particles can also fuse with each other – making new particles. Fusing sub-particles of positrons reverses the order-to-disorder arrow in the second law of thermodynamics – making the power source efficient enough to be self-sustaining and preventing the radioactive wastes from forming. Fusing the sub-particles of electrons comprise the power source.

Key components include a polarized positron source, injector accelerators, inflection magnets, end magnets, and the beam transport.

Governments and utilities would buy electrino fusion power reactors because the process is a clean, inexpensive way to produce electricity. It is 1000 times as efficient as nuclear reactors. It does not require uranium or plutonium for fuel. It can run on anything for fuel such as dirt, sand, sewage, ground garbage, toxic chemicals, radioactive wastes, sea water, etc. without carbon nor radioactive pollutants.

Assume that the collision energy were 940 MeV to avoid unwanted heat (operate at room temperature), and the current in each beam was 1.0 ampere of electrons. The energy investment into the electrino fusion would be 1880 megawatts. The energy released in annihilation photons would be 3760 megawatts. Recoverable net power would be 1880 megawatts or less.

The collision energy of the linear accelerator would be 940 MeV (each particle – 1880 MeV in the center of mass frame). The current in each beam would be 1.0 amperes of electrons. There would be two beams 180 degrees from each other.

The energy released in annihilation photons would be 3760 megawatts. "Annihilation photons" are the 940 MeV X-Rays produced when a negatron annihilates a proton. These X-rays are converted to electricity by order-to-disorder arrow reversed photo-voltaic cells with nearly 100% efficiency.

In summary the 3760 megawatts output of annihilation photons would be converted to electricity. However, in order to keep the electrino fusion reaction going, 1880 megawatts would be taken from the 3760 megawatts to power the linear accelerator. The net energy output would thus be 1880 megawatts-electric.

The size of an electrino fusion reactor would be about 80' x 10' x 10'. The fuel is whatever brass or copper James M. Potter uses in constructing the walls of his linear accelerators. James M. Potter, Ph.D., is President, JP Accelerator Works, Inc., 2245 47th Street, Los Alamos, NM 87544, 505-690-8701 or 888-301-2833 or 505-661-8155, jpottter@jpaw.com, <http://www.jpaw.com>. 155 lbs of

brass would be consumed over 100 years before shutdown for refueling. The linear accelerator would be a standard commercially available model. It would not need to be customized for an electrino fusion reactor.

The smallest electrino fusion reactor that would be possible to build is now about 80' x 10' x 10'. It may eventually be the size of a filing cabinet.

The projected cost of the first 1880-megawatt electrino fusion reactor is approximately \$100 million. This clean source of electricity could be built in two years, and the necessary Refresher built in one year. Electricity could be generated for only about 1.5 percent of current rates (a little over 0.1 cent per kwh). Subsequent clean energy sources can be built for \$37.5 million each.

The 1880 megawatts (net) of electricity generated by an electrino fusion power reactor would be Direct Current (DC). A utility would need thick wires and the biggest busbars and transformers on the planet. Conversion from DC to Alternating Current (AC) would require the world's largest inverters.

The electrino fusion reactor requires the Refresher to be self-sustaining. But the Refresher has several positive medical side effects due to reversing the order-to-disorder arrow that cannot be eliminated – in a controlled area reverse adult aging and wipe out diseases.

Refresher 1 Design Specifications

Size of accelerator	20 meters long by 3 meters wide
Diameter of channels	4 cm (maybe a little more to allow for water cooling channels)
Type of accelerator	Folded linear accelerator with pulsed klystron RF power supplies and S-band cavities (2856 MHz)
RF power supplies	Eight 35 to 50-megawatt pulsed klystrons
duty factor	0.1% (peak current 1000 times average current)
Average power	400 kW (20 kW per meter of accelerator)
klystron efficiency	~50%
total system power	800 kW
cooling water requirement for each 5 m section	5 to 10 gpm

cooling water required by each klystron	~ 5 gpm
cooling towers capacity	800 kW
Cost:	
Linear accelerator	\$12 million
Klystrons	\$ 8 million
Klystron power supplies and cooling towers	\$ 2 million
Magnets and their power supplies	\$ 2 million
System with controls	\$ 8 million
10% contingency	\$ 3.2 million
Builder's cost	\$35.2 million
Other budgeted items	\$14.8 million
Total budgeted	\$50 million
Creation time total	3 years
Design time (beam dynamics, rf power systems, cooling, and computer control)	1 year
Fabrication and subassembly testing	18 months
Installation and commissioning	6 months

(The following chapter is taken from *Formulating the Universe*, Volume II, by Gordon Ziegler, Chapter 7. Copyrighted by Benevolent Enterprises 2004. Used with permission.)

Chapter 7

SECOND LAW OF THERMODYNAMICS

A. Introduction

Everything goes from a state of order to more disorder. Brand new automobiles wear out and rust. Objects break or are damaged. A thermos bottle falls off the counter, and the inner glass bottle is shattered. We do not expect the shattered bottle to fall back up to the counter and become whole again. There is a one-way arrow for the events to transpire. That arrow is the Second Law of Thermodynamics.

Houses grow old and fall into decay. Barns fall down. Fruit spoils, people and animals grow old and die. Viruses mutate. People become ill and die. Crime and disorder in society increase. Homes break up. Aborted fetuses disintegrate. Dead people and things decompose. All of these negative occurrences are the outworking of the second law of thermodynamics – that part of which is an arrow making everything go from order to disorder.

Let us consider what other people have written about the second law of thermodynamics.

"Second law of thermodynamics

"An equilibrium macrostate of a system can be characterized by a quantity S (called entropy) which has the following properties:

"(i) In any infinitesimal quasi-static process in which the system absorbs heat dQ , its entropy changes by an amount

$$dS = \frac{dQ}{T} \quad (7-1)$$

where T is a parameter characteristic of the macrostate of the system and is called its *absolute temperature*.

"(ii) In any process in which a thermally isolated system changes from one macrostate to another, its entropy tends to increase, i.e.,

$$\Delta S \geq 0. \quad (7-2)$$

"The relation (7-1) is important because it allows one to determine entropy *differences* by measurements of absorbed heat and because it serves to characterize the absolute temperature T of a system. The relation (7-2) is significant because it specifies the direction in which nonequilibrium situations tend to proceed."¹

The above expression of the second law of thermodynamics is regarding entropy and heat. Other writers include the order-to-disorder arrow in the second law of thermodynamics.

"It is a matter of common experience that disorder will tend to increase if things are left to themselves. (One has only to stop making repairs around the house to see that!) One can create order out of disorder (for example, one can paint the house), but that requires expenditure of effort or energy and so decreases the amount of ordered energy available.

"A precise statement of this idea is known as the second law of thermodynamics. It states that the entropy of an isolated system always increases, and that when two systems are joined together, the entropy of the combined system is greater than the sum of the entropies of the individual systems. For example, consider a system of gas molecules in a box. The higher the temperature of the gas, the faster the molecules move, and so the more frequently and harder they collide with the walls of the box and the greater the outward pressure they exert on the walls. Suppose that initially the molecules are all confined to the left-hand side of the box by a partition. If the partition is then removed, the molecules will tend to spread out and occupy both halves of the box. At some later time they could, by chance, all be in the right half or back in the left half, but it is overwhelmingly more probable that there will be roughly equal numbers in the two halves. Such a state is less ordered, or more disordered, than the original state in which all the molecules were in one half. One therefore says that the entropy of the gas has gone up. Similarly, suppose one starts with two boxes, one containing oxygen molecules and the other containing nitrogen molecules. If one joins the boxes together and removes the intervening wall, the oxygen and nitrogen molecules will start to mix. At a later time the most probable state would be a fairly uniform mixture of oxygen and nitrogen molecules throughout the two boxes. This state would be less ordered, and hence have more entropy, than the initial state of two separate boxes."²

"The explanation that is usually given as to why we don't see broken cups gathering themselves together off the floor and jumping back onto the table is that it is forbidden by the second law of thermodynamics. This says that in any closed system disorder, or entropy, always increases with

time. In other words, it is a form of Murphy's law: Things always tend to go wrong! An intact cup on the table is a state of high order, but a broken cup on the floor is a disordered state. One can go readily from the cup on the table in the past to the broken cup on the floor in the future, but not the other way round.

"The increase of disorder or entropy with time is one example of what is called an arrow of time, something that distinguishes the past from the future, giving a direction to time."³

B. Electrino Model and 2nd Law

The natural tendency of leptons in beta decay is that the parent lepton combines with one or more gravitons to produce more particles. In all natural reactions, the order energy of the resultant particles is less than or equal to the order energy of the original particles.

1. Negative Energies. Let us consider antimatter more carefully. "In the Dirac theory also, *the permissible energy values for a free particle range from $+mc^2$ to $+\infty$ and from $-mc^2$ to $-\infty$* . The first of these results is of course just what we expect for a free particle – that its total energy can have any value greater than its rest energy. But the second result is quite puzzling, since it implies the existence of states of *negative total energy*."⁴ Anderson in 1932 discovered positrons in cosmic radiation. These were regarded as Dirac's negative energy particles. "The first two solutions of the Dirac equation . . . clearly describe a free electron of energy E and momentum \mathbf{p} . The two negative energy electron solutions . . . are to be associated with the antiparticle, the positron."⁵

However, in the annihilation it is not $(+mc^2) + (-mc^2) = 0$, but $2mc^2$ is the result of annihilation.⁶ There is something strange going on with the minus signs in these equations. The calculations are inconsistent.

Maybe there are two kinds of energy considered. One we can call entropy energy E_s . In the annihilation reaction, $+\#mc^2 + -\#mc^2 = 2mc^2$. Entropy energy is the higher value. The other energy is order energy E_o . In order energy the same reaction is $(+mc^2) + (-mc^2) = 0$.

Let us consider entropy energy and order energy for particle decay schemes. There are a few decay schemes where no negative order energy (anti-matter) is introduced in the right hand side of the decay schemes. In those few instances, the final order energy is equal to the initial order energy (when kinetic energy is taken into account). But in most cases, a trace of negative order energy (anti-matter) is introduced into the right side of the decay schemes. There is nothing on the left hand sides of the decay schemes to correspond to this addition of a trace of negative order energy on the right sides of the decay schemes. Therefore, total order energy is less on the right hand sides of the decay schemes than on the left hand sides (if only by a trace). A few decay schemes introduce a lot of antimatter (as K^-) on the right side of the decay scheme. The loss of order energy in the systems is greater in those cases. But in every case, for all natural processes, the order energy final is \leq the order energy initial, or

$$\Delta E_o \leq 0. \quad (7-3)$$

Let us check the order energy for electron electrino fusion reactions. Electrons made energetic by acceleration (as heavy as protons) fuse and form anti-protons. Matter is converted to anti-matter. Entropy energy is conserved, but not so order energy. Order energy is reduced in the extreme from +938 MeV to -938 MeV or more for each electron fused (two electrons are fused in each reaction).

The order-to-disorder arrow for electron electrino fusion points in the usual direction. The system does obey the second law of thermodynamics.

2. Reversing the Order-to-Disorder Arrow. What would happen if we fused the electrino constituents of positrons instead of the electrino constituents of electrons? Entropy energy E_S would again be conserved. Entropy would be increased. However, order energy E_O would go from $-2 \times 938 \text{ MeV}$ to $+2 \times 938 \text{ MeV}$ – from disorder to order. The order-to-disorder arrow would be reversed. This would be a reaction that would be prohibited by the second law of thermodynamics – unless the strong gravitational force that fuses the anti-semions would be stronger than the second law of thermodynamics (which otherwise governs weak interactions). The stronger of the strong gravitational force and the second law of thermodynamics should be determined by experiment. More rides on that one experiment than perhaps on any one other experiment in this generation. If it is found that strong gravity is stronger than the second law of thermodynamics, then order can be restored at first in a small area, and then for the whole earth.

Here we see that the entropy arrow of time and the order-to-disorder arrow of time are separate and distinct, and are not one and the same thing. While all the reactions the author has studied increase entropy, the fusion of positron anti-semions reverses the order-to-disorder arrow, making more order out of the disorder.

Positron constituent electrino fusion might not only take the electrinos from disorder to order. It could make other physical processes in a local area go from disorder to order. The positron fusion not only violates the second law of thermodynamics, it reverses the order-to-disorder arrow of that law in a local area, making other processes in that area reverse. Let us consider that process more to see how it might be regulated.

We guess the desired relationships for reversing the order-to-disorder arrow in the second law of thermodynamics through dimensional analysis. We want to solve for r , the maximum radius in which the reversed law would be effective. There is a way we can obtain a length from combinations of our variables and constants. That way is in the right hand side of Eq. (7-4). The whole expression is the thermodynamic relation we are seeking. The thermodynamic relation is:

$$(\Delta E_o)_t > 0 \text{ where } r < \frac{(\Delta E_o)_1 c}{ik}, \quad (7-4)$$

where E_o is the order energy – the positive or negative energy in the pair production of particles; ΔE_o is the change in the order energy, where $(\Delta E_o)_t$ is the change in the total order energy of the system, and where $(\Delta E_o)_1$ is the change in the order energy for a single source reaction – for a positron fusion reaction it is approximately $2 \times 10^9 \text{ eV/collision} \times 1.6 \times 10^{-19} \text{ joules/eV} = 3.2 \times 10^{-10} \text{ joules/collision}$; c is the speed of light – approximately $3.0 \times 10^8 \text{ m/s}$; we shall solve for the effected radius r ; i is the beam current in each beam in Coulombs per second (we will solve for 10^{-11}); k is the ratio of particle energy to particle charge. This energy per charge is the accelerated energy of the particle (roughly $1 \times 10^9 \text{ ev}$ times $1.6 \times 10^{-19} \text{ joules/ev} = 1.6 \times 10^{-10} \text{ joules}$) divided by the charge of each positron ($q = 1.6 \times 10^{-19} \text{ coulombs}$), which equals $10^9 \text{ joules per coulomb}$. The collision efficiency eff is not needed in this equation, because the result is not in particles, but is already in collisions.

Incredibly, the lower the current, the bigger is the radius of the affected area. The greater the current, the smaller is the radius of the effected area. With 10^{-11} A beam currents, the effected

radius r solves for 9.6 meters – roughly 10 meters, which describes a small area – less than a tenth of an acre.

To get an idea of the positron beam currents needed to reverse the order-to-disorder arrow of the second law of thermodynamics in what size of affected radius, see Table 7-1 below.

For an area the size of	r	beam current
House	10 m	10 pA
four football fields	100 m	1 pA
community	1 km	100 fA
city	10 km	10 fA
Israel	160 km	0.6 fA
U.S.	2,400 km	0.04 fA
World	13,000 km	0.008 fA
Sun	1.7E11 m	6E-22 A

Table 7-1. Beam currents versus affected radius for reversal of the order-to-disorder arrow of the second law of thermodynamics.

We must make sure that reversing the second law will do only good and not evil before we flip the switch. Inspired evidences will be studied in the next chapter on a wide range of phenomena affected by reversing the order-to-disorder arrow in the second law of thermodynamics.

¹F. Reif, *Statistical Physics*, Berkeley Physics Course--Volume 5 (New York: McGraw-Hill Book Company, 1967), p. 283.

²Stephen Hawking, *A Brief History of Time--From the Big Bang to Black Holes* (New York: Bantam Books, 1988), pp. 102, 103.

³*Ibid.*, pp. 144, 145.

⁴Robert B. Leighton, *Principles of Modern Physics* (New York: McGraw-Hill Book Company, Inc, 1959), p. 665.

⁵Francis Halzen, Alan D. Martin, *Quarks and Leptons* (New York: John Wiley & Sons, 1984), p. 107.

⁶David S. Saxon, *Elementary Quantum Mechanics* (San Francisco: Holden-Day, 1968), p. 386.

(End of Chapter 7)

EXECUTIVE SUMMARY OF BUSINESS PLAN

electrino energy is a new company formed to develop the inventions envisioned by the new model of physics—the electrino fusion model of elementary particles. Our company provides theoretical work and guidance to licensees. Our focus is the reverser of aging, disease, and decay processes (Refresher 1) and whatever else we must do to fund the Refresher 1.

electrino energy was formed October 12, 2005 as an invention development and theorist service specializing in four high-technology inventions – inertia-less craft; artificial gravities; reverser of aging, disease, and decay processes; and electrino fusion reactors generating electricity. All four inventions have potentially extremely high value. But all four inventions currently have three principle difficulties: 1) they are unbelievable by almost all persons – including agency heads, venture capitalists, congressmen and senators; 2) almost all of them cost scores of millions of dollars to develop; and 3) **electrino energy** has no money to develop them. With no capital and no revenue stream or other assets to fall back on, **electrino energy** cannot even get a guaranteed loan.

But **electrino energy** is not resource-less and in a hopeless condition. It has three principal approaches that it can take to resolve this dilemma:

1) Though the aging reverser is the most urgently needed, a miniature inertia-less craft can be constructed for a whole lot less money. It should be possible to construct one for a few hundred dollars borrowed from friends. But that technology could be licensed for hundreds of millions of dollars – enough to finance all the four high-tech inventions.

2) As a back-up to that approach, venture capital angels could be approached to advance the money to finance the reverser of aging, disease, and decay processes. This invention is not only high tech, but medical. The other inventions could be developed at a later time.

3) As a back-up to that approach, the owner could pursue his particle theory, predicting the masses of particles. That may be difficult, but not impossible. This would do what no other physical theory can do. Such a feat would be publishable, arousing interest among scientists for creating a facility to test the model – opening the way for government funding of the high-tech inventions.

A master decision tree flow chart linking and employing these three alternatives for funding the development of the inventions is in Section 7.0 Financial Plan.

According to alternative 1), projected sales and profits for the first four years of operation are summarized below:

Year	Sales(\$)	Profits(\$)	Profit/Sales(%)
1	200,000,000	0	0
2	0	0	0
3	0	0	0
4	10,000,000,000	9,000,000,000	90.0

According to alternative 2), there are no actual projected sales and profits for the first three years of operation. Year four is the same as above. According to alternative 3), there are no projected sales or profits for the first five years.

Currently, there are no competitors for any of these inventions. Once public incredulity is overcome by demonstration, the devices should have huge market potential.

The size of the electricity generating market is essentially enormous. It would be up to 50 percent of electric generation world-wide eventually. That's probably over a trillion dollars.

A self-powered high-speed locomotive powered by an electrino fusion power reactor would need to be at least 85 feet long.

Environmental Heat Engines

Las Vegas inventor Robert Stewart developed his "Stewart Cycle" engine for transportation vehicles, electricity generators, and large-scale water lifters. His efficient and pollution-free engine uses ambient heat to expand a working fluid such as Freon or ammonia and move pistons through sealed chambers. His patent is for Vapor Actuated Power Generating Device, No. 4,033,136.

A possibly more up-to-date version is Ralph J. Lagow's Method of Generating Power from a Vapor, Patent No. 4,693,087. Ken Rauen's Rauen cycle and Superclassical cycle engines also expand working fluids with environmental heat to provide useful net mechanical power.

Mr. Stewart claimed that his fuel-less engine could lift Colorado River water from below Hoover Dam back up into Lake Mead, thereby doubling Hoover Dam's output of electricity. He also proposed lifting water from the Columbia River into the Colorado River via a canal, generating electricity as the water flowed back downhill.

DISCLAIMER: Inclusion of any invention or technology described in this list of inventions does not in any way imply its suitability for investment of any kind. All investors contemplating any investments in these devices and technologies should first consult with a licensed financial professional. Prospective investors should exhaustively perform their own investigation of pertinent facts and allegations of facts. Investors should also ensure thorough compliance with regulations of the federal Securities and Exchange Commission and appropriate state securities divisions. For more information, see <http://www.zpenergy.com/modules.php?name=News&file=article&sid=1655>.

Thank you for your comment, Parke Ewing.

The comment tracking number that has been assigned to your comment is SEDDSupp20018.

Comment Date: December 4, 2011 20:57:10PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDSupp20018

First Name: Parke
Middle Initial:
Last Name: Ewing
Organization:
Address: 98 Imperial Hwy. (S-2)
Address 2: PO Box 84
Address 3:
City: Ocotillo
State: CA
Zip: 92259
Country: USA
Privacy Preference: Don't withhold name or address from public record
Attachment:

Comment Submitted:

I do not believe that any of our public lands should be developed by any private company for solar projects when renewable electricity can be generated on existing roof tops and private property. Some of these massive proposed projects could be constructed too close to existing homes thereby depleting property values and forcing honest citizens to evacuate their homes due to possible future health issues. BLM stay out of energy issues.

Thank you for your comment, Parke Ewing.

The comment tracking number that has been assigned to your comment is SEDDSupp20019.

Comment Date: December 4, 2011 21:10:33PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDSupp20019

First Name: Parke
Middle Initial:
Last Name: Ewing
Organization:
Address: 98 Imperial Hwy. (S-2)
Address 2: PO Box 84
Address 3:
City: Ocotillo
State: CA
Zip: 92259
Country: USA
Privacy Preference: Don't withhold name or address from public record
Attachment:

Comment Submitted:

Allowing any government agency to regulate private development on public land will certainly open the door for insider trading and investments, along with payoffs to corrupt government employees that could be in a position to sway voting on future projects. Our government should stay out of the energy business and let private industry purchase private property for their energy projects if they so desire. Existing roof top solar gets my vote.

Thank you for your comment, Mark Abeles-Allison.

The comment tracking number that has been assigned to your comment is SEDDSupp20020.

Comment Date: December 11, 2011 07:19:31AM

Supplement to the Draft Solar PEIS

Comment ID: SEDDSupp20020

First Name: Mark

Middle Initial:

Last Name: Abeles-Allison

Organization: Bayfield County

Address: 117 E Fifth Street

Address 2:

Address 3:

City: Washburn

State: WI

Zip: 54891

Country: USA

Privacy Preference: Don't withhold name or address from public record

Attachment:

Comment Submitted:

I support solar project expansion on government, federal, state and local lands. I also feel strongly that some of these projects should be based in northern climates. Northern climates have the longest summer sunlight when summer AC demand is the highest. Efforts to make less populated northern climates more energy independent with solar electric, will make energy production and distribution in more energy demanding southern climates more efficient.

Thank you for your comment, Richard Ryan.

The comment tracking number that has been assigned to your comment is SEDDSupp20021.

Comment Date: December 13, 2011 00:01:14AM

Supplement to the Draft Solar PEIS

Comment ID: SEDDSupp20021

First Name: Richard

Middle Initial: W

Last Name: Ryan

Organization: IV Desert Museum member & Imperial Valley Hike Clu

Address: 1097 Sandalwood Dr.

Address 2:

Address 3:

City: El Centro

State: CA

Zip: 92243

Country: USA

Privacy Preference: Don't withhold name or address from public record

Attachment:

Comment Submitted:

Imperial Valley CA is now the site of dozens of proposals for the use of public lands (BLM) to build solar and wind farms. Before turning to desert lands in our area, I request the involved federal agencies utilize industrialized areas closer to population centers. Also, federal agencies and private utilities have forgotten about promoting conservation. US consumers are the most wasteful users of energy in the world, but I hear little from the federal government and utilities encouraging conservation. Instead the emphasis is on expanding production without making consumption wiser. The institutions of which I am a member submit that the current formula should be inverted. Make consumption smarter and reduce the need to build alternative energy plants on desert lands. US government thinking is only green wash as long as conservation and avoiding waste is ignored. Regards, Richard W. Ryan

Thank you for your comment, Ricki Brodie.

The comment tracking number that has been assigned to your comment is SEDDSupp20022.

Comment Date: December 13, 2011 22:25:05PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDSupp20022

First Name: Ricki
Middle Initial:
Last Name: Brodie
Organization:
Address: 40591 Pebble Beach Circle
Address 2:
Address 3:
City: Palm Desert
State: CA
Zip: 92211
Country: USA
Privacy Preference: Don't withhold name or address from public record
Attachment:

Comment Submitted:

December 13, 2011

Statement of Ms. Ricki Brodie
40591 Pebble Beach Circle
Palm Desert, CA 92211
760-834-9139 www.wom4444@yahoo.com

Dear Sirs:

We residents of Riverside County are proud of all we have done to make the solar industry welcome here. The solar industry gives us a big edge in terms of Riverside County being seen as a progressive, future-looking county.

The Riverside County Board of Supervisors has approved a comprehensive solar power plant policy requiring large-scale solar developers to pay a \$450 per-acre payment to compensate the county for the use of its property and for committing immense tracts of land exclusively to solar development.

More than 20 projects are currently planned for the County, covering an approximately 118,000 acres in eastern Riverside County. The projects are expected to deeply change the look of the desert, eliminating all other potential uses. A great many acres of land are needed to help a society transitioning from fossil fuels to renewable fuels.

We residents of Riverside County have done as much as possible to enable the solar industry to begin work here as soon as possible. The Board of Supervisors is even giving a 10% reduction in fees for projects begun before December 2014.

But, Riverside County has responsibilities to others beside the solar industry. We also have responsibilities to residents and to those who live in this county because they love the desert. There are side effects to our commitment to solar power. Desert landscape will be scarred forever. Wildlife habitat will be destroyed.

It is apparent to me that Riverside has given its all to the solar industry. The acreage that is going to the industry is extremely generous. However, BLM has left a door open for further land use for solar because of the variance process. Due to wildlife and resource conflicts all areas left in the BLM zones should be deemed unsuitable for development.

Riverside County still deserves and needs unspoiled desert. And the citizens of our county cannot lose anymore of our precious heritage. We have done more than our share to establish solar power in the desert – now our wildlife and desert habitat must be protected!

Thank you for your comment

The comment tracking number that has been assigned to your comment is SEDDSupp20023.

Comment Date: December 19, 2011 15:59:27PM

Supplement to the Draft Solar PEIS

Comment ID: SEDDSupp20023

First Name: [Withheld by requestor]

Middle Initial:

Last Name: [Withheld by requestor]

Organization:

Address:

Address 2:

Address 3:

City:

State:

Zip:

Country:

Privacy Preference: Withhold name and address from public record

Attachment:

Comment Submitted:

It is very premature to consider putting significant energy sources in remote natural areas.

- 1) We have enough parking lots and rooftops in urban/suburban areas to provide PV/solar electricity near the point of use.
- 2) Siting energy sources so far from point-of-use results in dramatic energy losses in transmission; commonly less than one-half the generated power gets to the point of use.
- 3) We should collect data from already permitted sites for some years before approving more natural area coverage.
- 4) Just because we "can" doesn't mean we "should".

Thank you for your comment, Katherine Michalak.

The comment tracking number that has been assigned to your comment is SEDDSupp20024.

Comment Date: January 13, 2012 13:44:47PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDSupp20024

First Name: Katherine
Middle Initial:
Last Name: Michalak
Organization:
Address: PO Box 604
Address 2: 363 E Copper Ave
Address 3:
City: Crestone
State: CO
Zip: 81131
Country: USA
Privacy Preference: Don't withhold name or address from public record
Attachment: Solar SPEIS comment, Katherine Michalak.doc

Comment Submitted:

To Whom It May Concern,

I am a citizen of Saguache County, and I attended the BLM Solar SPEIS public meeting in Alamosa on January 11. After hearing the BLM presentation and public comments, my views are as follows:

It seems clear that the valley will be seeing substantial solar development in the near future, and I support this. However, I feel that how this development is structured economically is of crucial concern. I believe that, if public lands are going to be developed, they should be developed in a way that supports the local economy in a long term way.

The current BLM proposal does not look like it will provide meaningful local economic benefit; only meaningful non-local profit. I would like to know whether the BLM is required to prioritize federal over state economic concerns, or federal political concerns over economic concerns.

If the BLM does have a legal obligation not to prioritize local economies, then I don't see how the SPEIS can be modified in a way that will adequately address the needs of the San Luis Valley.

However, if the BLM does not have such a legal obligation, then I feel that they have a duty to continue altering their proposal until it's structured such that the use of the public lands in question is primarily of economic benefit to the regional public, not to non-local enterprises.

This could mean opening the lands to projects under 20 megawatts and providing incentives that would favor local businesses over remotely-owned large scale projects. It could also mean imposing heavy taxation on industrial projects which would have to be paid to local economies.

Thank you for evaluating public concerns and responding ethically.

Regards,

Katherine Michalak

Katherine Michalak
PO Box 604
Crestone, CO 81131
719-588-0420
kmichalak@myfastmail.com

Solar Energy Draft PEIS
Argonne National laboratory
9700 S Cass Ave, EVS/240
Argonne, IL 60439

January 13, 2012

To Whom It May Concern,

I am a citizen of Saguache County, and I attended the BLM Solar SPEIS public meeting in Alamosa on January 11. After hearing the BLM presentation and public comments, my views are as follows:

It seems clear that the valley will be seeing substantial solar development in the near future, and I support this. However, I feel that *how* this development is structured economically is of crucial concern. I believe that, if public lands are going to be developed, they should be developed in a way that supports the local economy in a long term way.

The current BLM proposal *does not* look like it will provide meaningful local economic benefit; only meaningful non-local profit. I would like to know whether the BLM is required to prioritize federal over state economic concerns, or federal political concerns over economic concerns.

If the BLM does have a legal obligation not to prioritize local economies, then I don't see how the SPEIS can be modified in a way that will adequately address the needs of the San Luis Valley.

However, if the BLM does *not* have such a legal obligation, then I feel that they have a duty to continue altering their proposal until it's structured such that the use of the public lands in question is primarily of economic benefit to the regional public, not to non-local enterprises.

This could mean opening the lands to projects under 20 megawatts and providing incentives that would favor local businesses over remotely-owned large scale projects. It could also mean imposing heavy taxation on industrial projects which would have to be paid to local economies.

Thank you for evaluating public concerns and responding ethically.

Regards,

Katherine Michalak

Thank you for your comment, Philip Incao.

The comment tracking number that has been assigned to your comment is SEDDSupp20025.

Comment Date: January 13, 2012 13:52:56PM

Supplement to the Draft Solar PEIS

Comment ID: SEDDSupp20025

First Name: Philip

Middle Initial:

Last Name: Incao

Organization:

Address: P.O. Box 894

Address 2:

Address 3:

City: Crestone

State: CO

Zip: 81131

Country: USA

Privacy Preference: Don't withhold name or address from public record

Attachment:

Comment Submitted:

Dear BLM Representative:

We, the concerned residents of the San Luis Valley strongly reject the plan to open more than 100,000 acres of public lands in the San Luis Valley (SLV) to massive corporate, industrial solar development. I believe this type of export dependent economic "development" model is inappropriate to the needs of the SLV and to the 21st Century. This type of industrial solar development is likely to absorb limited financial resources, monopolize existing transmission capacity, saturate markets and create a path dependency that leaves little room for local energy-based economic development.

Many of us in the SLV are looking towards a different kind of future, one in which there will be locally owned installations which will create real energy independence that renews our communities from the ground up. Rather than empowering large corporations, this type of development will empower communities and local economy. Locally owned, clean energy is the path to true energy independence and lasting prosperity that benefits real people and communities.

Conservation and distributed generation is a much more sensible approach. Massive distributed solar generation in our vast urban landscapes makes far more sense than bulldozing our valuable public lands. Furthermore solar electrons need to be consumed at the closest point of demand making distributed solar a much more sensible and ecological approach to energy generation.

Sincerely,

Philip Incao, MD

Thank you for your comment, Barbara Tidd.

The comment tracking number that has been assigned to your comment is SEDDSupp20026.

Comment Date: January 13, 2012 21:51:03PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDSupp20026

First Name: Barbara
Middle Initial:
Last Name: Tidd
Organization:
Address: 28988 County Road 65
Address 2:
Address 3:
City: Moffat
State: CO
Zip: 81143
Country: USA
Privacy Preference: Don't withhold name or address from public record
Attachment:

Comment Submitted:

Orient Land Trust (1 mi. from my home) has been off-grid since its inception in 2001 and Valley View Hot Springs, its predecessor, has been off-grid since before the Native Americans arrived there. Orient Land Trust is a major tourist attraction and employer in the Valley and has over 25,000 visitor days per year AND is OFF-GRID using hydroelectric power.

The Town of Del Norte recently celebrated the completion of its 1.9 MW Net-Zero Solar network.

The Mesita/Conejos County canola/biodiesel plant has plans to expand production to serve more of the Valley. The 300 kW Humprey's microhydro generation plant made a big splash last fall when it went into the operation. The City of Alamosa, Alamosa, Del Norte, Costilla and Crestone District Schools, Adams State College, SLV Regional Medical Center and SLV Federal Bank have all gone solar.

Dozens of pioneering SLV farmers have installed solar PV panels to power irrigation pumps and efforts are moving forward with plans to develop up to 2,500 MW of solar generation on crop circle pivot corners without adversely impacting valuable agricultural lands.

Hundreds (perhaps as many as 1,000) homeowners have installed solar PV on their rooftops since the 1970's. These locally owned installations create real energy independence that renews our communities from the ground up.

Some people think the San Luis Valley can have both local and industrial solar development, but the evidence from renewable energy experts suggests otherwise. Industrial solar is more likely to absorb limited financial resources, monopolize existing transmission capacity, saturate markets and create a path of dependency that leaves little room for local energy-based economic development.

Our family home built in 2008 is off-grid because it is 2.5 mi. from the nearest electricity hook-up. We enjoy and feel more secure being energy independent and producing our own electricity. Local, community-owned, distributed solar generation is what I would like to see more of here in the Valley. It would create at least as many if not more jobs than the large industrial scale projects like what are being proposed for BLM land. Distributed solar generation creates jobs for installing solar panels at the point of use –no need for additional transmission lines and electricity produced would stay here in the Valley.

Thank you for your comment, Deborah Michalak.

The comment tracking number that has been assigned to your comment is SEDDSupp20027.

Comment Date: January 13, 2012 22:42:07PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDSupp20027

First Name: Deborah
Middle Initial:
Last Name: Michalak
Organization:
Address: PO Box 604
Address 2: 363 E Copper Ave
Address 3:
City: Crestone
State: CO
Zip: 81131
Country: USA
Privacy Preference: Don't withhold name or address from public record
Attachment:

Comment Submitted:

Hello,

Although I was not able to be at the BLM public meeting on the 11th, my two daughters were there, and they summarized the information in the meeting for me. My daughter Katherine just wrote a thoughtful letter, and instead of paraphrasing her words, I would like to copy sections of her letter below as statements of how I, too, feel about the SPEIS:

I believe that, if public lands are going to be developed, they should be developed in a way that supports the local economy in a long term way.

The current BLM proposal does not look like it will provide meaningful local economic benefit; only meaningful non-local profit. I would like to know whether the BLM is required to prioritize federal over state economic concerns, or federal political concerns over economic concerns.

If the BLM does not have such a legal obligation, then I feel that they have a duty to continue altering their proposal until it's structured such that the use of the public lands in question is primarily of economic benefit to the regional public, not to non-local enterprises.

From what my daughter has told me, it seems like the BLM is making a big effort to take public concerns seriously, and I appreciate this. Please continue to respond to comments by changing your proposal accordingly.

Sincerely,

Deborah Michalak

Thank you for your comment, Jared Fuller.

The comment tracking number that has been assigned to your comment is SEDDSupp20028.

Comment Date: January 16, 2012 18:35:34PM

Supplement to the Draft Solar PEIS

Comment ID: SEDDSupp20028

First Name: Jared

Middle Initial: G

Last Name: Fuller

Organization:

Address: 636 W. 200 S.

Address 2:

Address 3:

City: Provo

State: UT

Zip: 84601

Country: USA

Privacy Preference: Don't withhold name or address from public record

Attachment:

Comment Submitted:

The solar energy zones proposed in the current draft of the PEIS should not be expanded and no new SEZs established in the final version. The vast majority of lands under BLM administration contain various resources that should be conserved. These include biological resources such as vegetation and wildlife in nearly all locations, as well as possible rare plant and animal species. Many areas contain cultural and archaeological resources that should not be disturbed. Visual and recreational resources in many areas are also of value. Because of impacts to these and other resources, the boundaries of the larger SEZs such as the Riverside East, Afton, Dry Lake Valley North, Millers and possibly others should be further contracted.

Thank you for your comment, Joseph Michalak.

The comment tracking number that has been assigned to your comment is SEDDSupp20029.

Comment Date: January 16, 2012 20:00:03PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDSupp20029

First Name: Joseph
Middle Initial:
Last Name: Michalak
Organization:
Address: Post Office Box 32283
Address 2:
Address 3:
City: Santa Fe
State: NM
Zip: 87594
Country: USA
Privacy Preference: Don't withhold name or address from public record
Attachment:

Comment Submitted:

January 16, 2012

Regarding the BLM 6-state solar proposal:

I understand that submitting comments is a form of voting on the supplement and therefore potentially influencing the next step of the project. I live in Santa Fe, New Mexico and have previously lived in Crestone, Colorado; based on my understanding of the economics and environmental resources of these two states, my perspectives are as follows:

Solar development on public lands makes sense, provided the following criteria are met:

Limitations in the final proposal are specific enough that project approvals outside of priority zones only happen as exceptions—including in the long term, not just in the short term. That is, the BLM final has a responsibility to insure that environmental resources will be impacted minimally not just initially, but into the foreseeable future.

Local and regional economies benefit substantially and in an ongoing way from all solar projects

The application process is opened to projects of less than 20 megawatts and incentives given to small projects that demonstrate the capability of providing a higher percentage of sustained economic benefit to local economies per megawatt than competing industrial projects.

Thank you for evaluating my feedback.

With best regards,

Joseph Michalak
505-699-0326

Thank you for your comment, Michael Brown.

The comment tracking number that has been assigned to your comment is SEDDSupp20030.

Comment Date: January 17, 2012 13:40:49PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDSupp20030

First Name: Michael
Middle Initial:
Last Name: Brown
Organization:
Address:
Address 2:
Address 3:
City:
State: CO
Zip: 81201
Country: USA
Privacy Preference: Don't withhold name or address from public record
Attachment:

Comment Submitted:

The emergence of solar is going to rely heavily on natural gas peaking plants. Battery backup systems will struggle to come in under 2 Dollars per MWh. Ultimately, battery storage is going to need to be incorporated into solar power plants. Battery storage as a stand-alone business entity cannot economically absorb the efficiency losses.

There's a real minute-to-minute cost to the grid when it comes to handling lots of solar power on partly cloudy days. Out in the Nevada desert, it adds up to about \$3 to \$8 per megawatt-hour.

Those are the numbers churned out of a Department of Energy-backed project with Las Vegas-area utility NV Energy based on a computer model simulating 10 different scenarios for solar PV systems at both rooftop and utility scales. Turns out that 150 to 1,000 megawatts of intermittent PV penetration requires a lot of fossil fuel-fired backup generators to help smooth it out on cloudy days and that costs utilities money.

Take a snapshot of two days' worth of minute-by-minute simulation of weather patterns and insolation using data from 2007, which is NV Energy's record peak year of power use. The sunny days are a smooth, easy-to-predict rise and fall, allowing supporting natural gas-fired plants ramp up and down slowly and smoothly, saving on wear and tear and burning fuel at top efficiency.

But add scattered, partial clouds to the mix, and the picture grows jagged and unpredictable, with jumps of tens of megawatts for smaller-scale penetration, and hundreds of megawatts in minutes for scenarios of 300 megawatts or more. NV Energy can handle that today, it won't break the grid, in other words, but it will cost the utility extra in fuel burn and cause earlier and more frequent turbine maintenance by forcing them to ramp and cut back so hard and so often. Think of it as driving at a smooth speed on the freeway, versus driving in stop-and-go traffic that suddenly speeds up to 60 MPH all at once.

You can see why utilities haven't tried to build that much solar and wind under their own power, it costs them extra. That's why it's taken government mandates to push them into signing up existing and future wind, solar and other renewable power sources in multi-year contracts, or to implement policies that make it easier and more profitable for their customers to install it on their own.

This isn't exactly news, of course, and it would be surprising if utilities and big solar and wind developers weren't arguing over numbers like these in their PPA contract negotiations on a daily basis. Still, it's interesting to see some real dollar figures emerge.

Still, not every utility service area looks like Las Vegas, which has access to a massively wasteful use of cheap power and from the Hoover Dam. But certainly states with big renewable portfolio mandates will have utilities worried about backing up all their intermittent solar and wind power.

Interestingly, the study didn't look at hydropower to balance PV, even though the country's biggest dams lie in NV Energy's territory. It also didn't look at energy storage, though the \$3 to \$5 per megawatt-hour figure may offer some guidance on what utilities will be willing to pay for storage systems that can reliably balance big PV.

Wind farms have hundreds of megawatts of battery-based storage installed and on the way in Japan, the U.S. and around the world, but it's almost always cheaper to use natural gas-fired peaker plants or pumped hydro.

Overall, NV Energy would need to keep about 1 megawatt of generating capacity online for regulation for every 25 megawatts of PV, the study found, and it would have to be fast, with 1 megawatt-per-minute in ramping capacity for each 75 megawatts of solar.

So with all the whining about 'fracking' and natural gas, we should seriously look at the New Westinghouse Electric Company industry standard AP1000® reactor. Historically, Westinghouse plant designs and technology have forged the cutting edge of worldwide nuclear technology. Today, about 50 percent of the world's 440 nuclear plants are based on Westinghouse technology.

The AP1000 is the safest and most economical nuclear power plant available in the worldwide commercial marketplace, and is the only Generation III+ reactor to receive Design Certification from the U.S. Nuclear Regulatory Commission (NRC).

The AP1000 features proven technology, innovative passive safety systems and offers:

- Unequaled safety
- Economic competitiveness
- Improved and more efficient operations

The AP1000 builds and improves upon the established technology of major components used in current Westinghouse-designed plants with proven, reliable operating experience over the past 50 years. These components include:

- Steam generators
- Digital instrumentation and controls
- Fuel
- Pressurizers
- Reactor vessels

Simplification was a major design objective for the AP1000. The simplified plant design includes overall safety systems, normal operating systems, the control room, construction techniques, and instrumentation and control systems. The result is a plant that is easier and less expensive to build, operate and maintain.

The AP1000 design saves money and time with an accelerated construction time period of approximately 36 months, from the pouring of first concrete to the loading of fuel.

Thank you for your comment, Lee Bice.

The comment tracking number that has been assigned to your comment is SEDDSupp20031.

Comment Date: January 18, 2012 14:46:53PM

Supplement to the Draft Solar PEIS

Comment ID: SEDDSupp20031

First Name: Lee

Middle Initial:

Last Name: Bice

Organization: Clark County Desert Conservation Program

Address: 333 N Rancho Dr., Ste 625

Address 2:

Address 3:

City: Las Vegas

State: NV

Zip: 89106

Country: USA

Privacy Preference: Don't withhold name or address from public record

Attachment: 20120118 Scoping Comments Argonne Natl Lab LB.pdf

Comment Submitted:



desert conservation PROGRAM

January 18, 2012

Supplement to the Draft Solar Programmatic Environmental Impact Statement
Argonne National Laboratory
9700 S. Cass Avenue – EVS/240
Argonne, Illinois 60439
<http://solareis.anl.gov/involve/index.cfm>

Re: Scoping Comments on the Supplement to the Draft Solar Programmatic Environmental Impact Statement

To Whom It May Concern:

Thank you for the opportunity to provide comments on the Supplement to the Draft Solar Programmatic Environmental Impact Statement (DPEIS).

Clark County, Nevada, through the Desert Conservation Program (DCP), administers the Clark County Multiple Species Habitat Conservation Plan (MSHCP) and Section 10(a)(1)(B) incidental take permit (TE034927-0) for compliance with the Federal Endangered Species Act on behalf of the County and the cities of Boulder City, Henderson, Las Vegas, Mesquite and North Las Vegas; and the Nevada Department of Transportation (Permittees). The current permit covers 78 species, including the threatened desert tortoise.

BLM Alternatives Comments:

On page 2-35, lines 34 and 35 and on Figure 2.2-2, please define clearly what the Proposed Desert Tortoise Connectivity Areas are and how they were constructed. Please cite agency personnel or technical documents and provide a list of GIS inputs that were used for this analysis.

On page 2-57 and 2-58 within Table 2.3-2, under Modified Program Alternative column, it states that the following species' habitats overlap by the percentage shown:

Plants:

- White-margined beardtongue – less than 8%
- Desert Tortoise – less than 12%
- Western burrowing owl – less than 8%
- Western willow flycatcher – less than 1%

respect, protect and enjoy our desert!

333 North Rancho, Suite 625, Las Vegas, NV 89106 • Phone (702) 455-5942 • Fax (702) 382-4593

Clark County recommends that for the final PEIS the following potential habitat models should be used for analysis within Clark County:

- Desert Tortoise and Burrowing Owl Models are available from the USGS Western Ecological Research Center, <http://www.werc.usgs.gov/>.
- Rare plant models for Las Vegas buckwheat, Las Vegas bearpoppy, Threecorner milkvetch, Pahrump Valley buckwheat, Sticky buckwheat, Beaver Dam breadroot, White-margined beardtongue, White bearpoppy, and Two-tone beardtongue are available from Fred Edwards, BLM Las Vegas Field Office.
- Southwestern Willow Flycatcher model is available from Elisabeth Ammon, Great Basin Bird Observatory, <http://www.gbbo.org/index.html>.

Appendix C Comments:

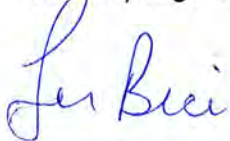
On page C-167, Figure C.4.2-1, change Las Vegas Colony to Las Vegas Paiute Indian Reservation and remove boxes with 8201, 8209, and 8215, these appear to be partial zip codes.

On page C-169, lines 31-33, The USFWS identified the entire Dry Lake SEZ as an area of concern for the desert tortoise recovery. What does that mean? Can USFWS provide a map of concerned areas? In the USFWS 2011 Revised Recovery Plan for the Mojave Population of the Desert Tortoise no mention of areas of concern were found.

On page C-170, Figure C.4.2-2, the Developable area (5,717 acres) boundary includes the Nevada Energy's Harry Allen Generating Station (≈300 acres). The generating station footprint should be removed from the Developable area and identified as "Non-development." The Dry Lake map (with panorama icons) should be updated in the PEIS website under Solar Energy Zones>Dry Lake too.

We appreciate the opportunity to provide comments to the DPEIS. Should you have any questions, please don't hesitate to contact me at 702-455-3554.

With my regards,



Lee Bice
Sr. GIS Analyst

LB/ee

Thank you for your comment, Connie Simkins.

The comment tracking number that has been assigned to your comment is SEDDSupp20032.

Comment Date: January 20, 2012 07:57:28AM
Supplement to the Draft Solar PEIS
Comment ID: SEDDSupp20032

First Name: Connie
Middle Initial:
Last Name: Simkins
Organization: Lincoln County Commission
Address:
Address 2:
Address 3:
City:
State: NV
Zip:
Country: USA
Privacy Preference: Don't withhold name or address from public record
Attachment: Final Solar SPEIS comments 1-17-12.pdf

Comment Submitted:

EIS Section	Page/Line	Comment/Suggested Revision
	General to “Additional Locally Relevant Screening Criteria”	important steps in the process, and the current language in this section is not strong enough to ensure adequate local input. Please refer to the following comments for suggestions on improving this step of the process.
D.3.3	Page D-5 / Line 32	<p>This section currently reads, “State and field offices undertaking efforts to identify or expand SEZs <i>may</i> choose to identify and apply additional screening criteria based on local conditions and institutional knowledge in consultation with other local, State and federal authorities and Tribes.”</p> <p>The “may” should be changed to “shall”. Coordination with the listed stakeholders is absolutely imperative to developing an SEZ that is feasible and supported by the local community.</p> <p>Additional criteria should be added to require the State and/or field office to determine the general level of support or opposition of the SEZ by the local and state government, and part of the screening criteria should be determining if a project in the area could obtain all necessary local and state permits. This needs to be identified early in the process to avoid wasting time, money and resources.</p> <p>A pre-NEPA scoping meeting (similar to the proposed pre-applications meetings in the Variance Process) should also be held in the local community where the new or altered SEZ is to be located, in an effort to gain all possible “institutional knowledge”. This also encourages early community engagement and buy-in as part of the process.</p>
D.3.3	Page D-5 / Line 43-46	This sentence should include “potential interference with existing authorized land uses”. This is a key item to analyze since solar development alters public land use from multiple use management to sole use.
D.4.1	General Comments Regarding “Identification of Disturbed Sites”	Lincoln County supports the identification of disturbed sites for SEZs and solar development in general. This limits the disturbance of fragile desert ecosystems. That being said, areas that have burned and crossed an ecological threshold due to invasion of noxious or invasive weeds should be considered “disturbed sites”.

Thank you for your comment

The comment tracking number that has been assigned to your comment is SEDDSupp20033.

Comment Date: January 20, 2012 20:09:05PM

Supplement to the Draft Solar PEIS

Comment ID: SEDDSupp20033

First Name: [Withheld by requestor]

Middle Initial:

Last Name: [Withheld by requestor]

Organization:

Address: [Withheld by requestor]

Address 2:

Address 3:

City: [Withheld by requestor]

State: [Withheld by requestor]

Zip: [Withheld by requestor]

Country: [Withheld by requestor]

Privacy Preference: Withhold name and address from public record

Attachment:

Comment Submitted:

Vote no on opening BLM land in the San Luis Valley to large-scale corporate development! I am in favor of keeping local control and profits of solar development.

Thank you for your comment, Jared Fuller.

The comment tracking number that has been assigned to your comment is SEDDSupp20034.

Comment Date: January 21, 2012 14:44:39PM

Supplement to the Draft Solar PEIS

Comment ID: SEDDSupp20034

First Name: Jared

Middle Initial: G

Last Name: Fuller

Organization:

Address: [Withheld by requestor]

Address 2:

Address 3:

City: [Withheld by requestor]

State: [Withheld by requestor]

Zip: [Withheld by requestor]

Country: [Withheld by requestor]

Privacy Preference: Withhold address from public record

Attachment:

Comment Submitted:

I strongly support the drafting of rules guiding development of solar energy on public lands which minimize or eliminate impacts to wildlife and ecosystems. In the final version of the PEIS, these rules should be extended to all solar energy applications on public lands, not just those filed after October 28, 2011. The proposal to allow additional projects outside the SEZs (the 'Variance Process') could undermine the conservation intent of the entire solar energy program if development is not limited to places with low environmental value such as previously disturbed locations. Any proposals that may proceed under the Variance Process should meet strict environmental criteria, if allowed to proceed at all.

I also commend the BLM for excluding fragile and ecologically important areas from solar development in response to environmental concerns ('Exclusion Areas'). Please expand the Exclusion Areas to include environmentally sensitive areas important to the survival of wildlife and plant species such as: wildlife habitat management areas, desert tortoise habitat and connectivity areas, areas that contain rare plants, areas with a high concentration of succulents, and the entire Ivanpah Valley in both Nevada and California.

Jared Fuller

Provo, UT

Thank you for your comment, Vikki Bauer.

The comment tracking number that has been assigned to your comment is SEDDSupp20035.

Comment Date: January 22, 2012 13:29:52PM

Supplement to the Draft Solar PEIS

Comment ID: SEDDSupp20035

First Name: Vikki

Middle Initial: m

Last Name: Bauer

Organization: Mono County

Address: Board of Supervisors

Address 2:

Address 3:

City: Bridgeport

State: CA

Zip: 93517

Country: USA

Privacy Preference: Don't withhold name or address from public record

Attachment: PEIS letter.docx

Comment Submitted:

Bureau of Land Management
Attn.: Shannon Stewart
Solar Energy Draft PEIS
Argonne National Laboratory
9700 S. Cass Avenue—EVS/240
Argonne, IL 60439

Dear Ms. Stewart,

I am writing to provide comments on the Supplement to the Draft Solar Energy Programmatic Environmental Impact Statement.

The long-term plan for solar energy development now being considered, the Supplement to the Draft Solar Programmatic Environmental Impact Statement (PEIS), will help shape future energy development and land use across the public lands of the west.

I applaud the BLM in responding to recommendations from the public to focus development in pre-screened, low-conflict zones. Overall, the Supplement is a step in the right direction, and most of the elements should be carried through the final plan. However, I believe the plan should provide additional incentives for building projects in low conflict zones and avoid development on public lands that are important for wildlife, recreation, tourism and other uses by County residents and visitors.

To ensure that solar development on public lands is smart from the start, I support most of the plan as laid out in the revised Preferred Alternative. I recommend that:

- The BLM should ensure that these large solar projects are built primarily in the pre-screened, low-conflict zones;
- The BLM should ensure that counties have a major role in designating future solar energy zones; and
- The BLM should provide a 60 day comment period on the final plan to allow public response to additional information in the final plan.

By focusing on low-conflict zones, the BLM can ensure that solar development avoids the conflicts and controversy that have plagued oil and gas development on public lands throughout the rural west. I urge you to take this common-sense approach that will allow solar development that is faster, cheaper and better for the environment, consumers and our western counties.

Thank you for considering my concerns.

Sincerely,

Vikki Magee Bauer
Mono County Board of Supervisors, District 3
vbauer@mono.ca.gov

Thank you for your comment

The comment tracking number that has been assigned to your comment is SEDDSupp20036.

Comment Date: January 22, 2012 21:34:23PM

Supplement to the Draft Solar PEIS

Comment ID: SEDDSupp20036

First Name: [Withheld by requestor]

Middle Initial: [Withheld by requestor]

Last Name: [Withheld by requestor]

Organization:

Address: [Withheld by requestor]

Address 2:

Address 3:

City: [Withheld by requestor]

State: [Withheld by requestor]

Zip: [Withheld by requestor]

Country: [Withheld by requestor]

Privacy Preference: Withhold name and address from public record

Attachment:

Comment Submitted:

Solar energy exclusion areas in the final PEIS should be expanded to include lands considered for protection under the California Desert Protection Act of 2011. These include proposed national monuments, expansions of national parks and preserves, and wilderness areas. Current or future applications in these areas which may be considered under the 'variance process' should also be excluded. These environmentally sensitive areas have resources determined worthy of protection. In the very least, they should be reserved from development until a legislative decision is made regarding their protection.

Jared Fuller

Provo, UT

Thank you for your comment, Jeff Pauly.

The comment tracking number that has been assigned to your comment is SEDDSupp20037.

Comment Date: January 23, 2012 11:45:48AM
Supplement to the Draft Solar PEIS
Comment ID: SEDDSupp20037

First Name: Jeff
Middle Initial: M
Last Name: Pauly
Organization:
Address: 30 Locust Drive
Address 2:
Address 3:
City: Yerington
State: NV
Zip: 89447
Country: USA
Privacy Preference: Don't withhold name or address from public record
Attachment:

Comment Submitted:

My concern regards the area under consideration near Goldpoint Nv. It appears the agency is disregarding how this area will affect the local residents. It also appears our concerns are disregarded, and your plan will go on no matter what the public says. I am not opposed to solar power, but other areas more remote need to be considered. There is also the issue of water for this project and by your own study this area will not provide enough water to run the system. So again I voice my opposition to this one area under consideration and will continue to let my representatives in congress know, and seek the answers from the BLM that we continue to have unanswered and ignored.

Thank you for your comment, Jeff van Ee.

The comment tracking number that has been assigned to your comment is SEDDSupp20038.

Comment Date: January 23, 2012 11:47:34AM

Supplement to the Draft Solar PEIS

Comment ID: SEDDSupp20038

First Name: Jeff

Middle Initial:

Last Name: van Ee

Organization: Nevada Outdoor Recreation Association

Address: P.O. Box 70631

Address 2:

Address 3:

City: Las Vegas

State: NV

Zip: 891700631

Country: USA

Privacy Preference: Don't withhold name or address from public record

Attachment: solarpeis.pdf

Comment Submitted:

As the director of the Nevada Outdoor Recreation Association (NORA), I am submitting the following comments on the Draft Solar PEIS. I attended the public meeting in Las Vegas, but did not provide comments at that time.

The Draft Solar PEIS is a step in the right direction. I have advocated for a regional screening of public lands in the West for renewable energy projects to avoid unnecessary delays in the siting and construction of badly needed renewable energy power sources and to minimize adverse environmental impacts. Consideration of energy projects on a case-by-case basis can lead to a degradation of the West that will not be fully appreciated until some time has passed, a number of energy projects have been built, and the cumulative impact on the West has been recognized. Industrialization of large, remote areas of the West is occurring, and we must be careful in avoiding unintended consequences. The joint Department of Energy and Bureau of Land Management efforts to develop the draft and supplement are commendable. Efforts to involve a broad cross-section of interested parties is not only important to ensure compliance with the legal provisions of the National Environmental Policy Act, but it is important to ensure that our path towards energy independence and reduction of green-house gases is as straightforward as possible. It is important to get it right.

Unfortunately, there are some serious flaws to the framework that has been established. The scope of the analysis of impacts from large-scale energy development on lands in the West is too limited. The present analysis is confined to large-scale solar development on BLM lands in the Southwest. We know that energy usage and development occurs over even larger areas. State boundaries, marketplaces, and transmission networks are some other boundaries to consider for decision-making analysis. For example, natural gas in Wyoming is presently transported to the Southwest by pipeline, and wind energy projects are being considered in Wyoming for markets in the Southwest. To focus solely on states in the Southwest for evaluation of solar-energy projects in the West is a mistake. To focus solely on large-scale solar energy projects in the Southwest and ignore other large-scale energy projects, such as wind and oil and gas exploration, is also a mistake.

The proactive analysis and prioritization of solar energy zones in the Southwest should be expanded to include other large-scale, landscape changing projects. Whether it is wind, oil and gas, or mining, significant landscape-scale changes are rapidly changing the West and potentially impacting wildlife and humans in ways that may not be understood until it is too late.

This EIS, while it may seem already to be big in scope, is part of a bigger picture. It is part of a national energy policy. From comments that have already been made, it is clear that many people understand this. Many organizations and groups are calling for energy efficiency and locating renewable energy facilities nearer load centers to reduce impacts on rural areas of the West. The NORA encourages this. This EIS needs to encourage this, and it needs to lay the groundwork for how large-scale renewable energy projects in remote areas of the West will affect efforts to meet our energy needs in urban areas through energy efficiency and distributed power systems in the urban areas.

The costs of developing large-scale solar and other renewable energy projects in remote areas of

the West need to be thoroughly assessed. The cost of the transmission lines, roads, water, and other infrastructure, together with the environmental impacts and costs, may lead these type of developments to be less advantageous than believed. Distributed, smaller-scale projects within and near urban load centers might be better than believed despite the perceived troubles in getting smaller-scale projects to add up. From a security and reliability stand-point, small-scale distributed systems are worth pursuing before we encourage a land-rush on rural public lands for large-scale renewable developments. Energy efficiency improvements are likely to be less costly than large-scale solar even when large-scale solar is slated for BLM lands.

Earlier comments have encouraged large-scale solar projects be prioritized towards Brownfields and other disturbed lands. There are other areas that have been excluded from this large-scale assessment of potential solar energy zones in the West. For example, native American reservations may be quite willing and eager to see some of these projects on their lands. When you include all of the areas in the West that may be priority candidates for the siting of large-scale solar and other energy developments, the acreage and potential power generated could be quite significant.

How can this EIS be improved without sacrificing the considerable time and effort that has already been made? I would suggest a tiered approach with references. Show how efforts to develop other energy projects in other areas of the West relate. In the end, market forces and demand requirements will dictate to what extent new, energy projects are developed. Government policies also have a significant effect on our energy choices and our future energy sources. Increased emphasis on energy efficiency, and an increased focus on quantification of the costs and benefits of energy efficiency improvements is probably the best, short-term solution for our energy dilemma. While this topic may seem to be outside the original scope of this EIS effort, I would argue that increased energy efficiency, as well as the direct and indirect costs of other energy sources, will have an impact on the extent that the defined SEZ's are utilized and potential variances from those SEZ's are sought. This programmatic EIS should be placed in context with a national energy policy and other efforts to supply energy to the West and to the Nation. Thus, far it falls short in this regard. The good work that has already occurred should not be disregarded. The good work should serve as a foundation for a bigger look at the bigger problem. How can we meet our energy needs with the least environmental impact, at the lowest cost considering those impacts, in the most efficient manner? How can we avoid future train wrecks?

The partnership in developing this EIS between the Department of Interior and the Department of Energy is a good one with a lot of potential.

Thank you for your comment, Gary Vesperman.

The comment tracking number that has been assigned to your comment is SEDDSupp20039.

Comment Date: January 23, 2012 12:53:56PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDSupp20039

First Name: Gary
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Zip: 890051018
Country: USA
Privacy Preference: Don't withhold name or address from public record
Attachment: Seven clean energy inventions.docx

Comment Submitted:

There is no need to spoil thousands of acres of pristine wild lands with wind turbines nor solar energy collectors. The U.S. Government and the American economy ought to instead develop new energy inventions such as the seven clean energy inventions described in the attached Word document. Numerous other energy inventions are also described or at least leasted in my website www.padrak.com/vesperman.

Seven Clean Energy Inventions

Compiled by Gary Vesperman, 588 Lake Huron Lane, Boulder City, NV 89005-1018 702-435-7947
garyvesperman@yahoo.com www.padrak.com/vesperman

Hydro-Magnetic Dynamo

A doughnut-shaped Hydro-Magnetic Dynamo as big as a two-car garage could safely and reliably generate 1000 megawatts minus its 10-megawatt sustaining input power for 25 years or more with no fuel, no pollution, and minimal maintenance.

From 1992 to 1997 in Armenia the third prototype hydro-magnetic dynamo continuously generated a constant current of 6,800 amperes at 220 volts DC – 1.49 megawatts. Its toroid weighed 900 kilograms and had a diameter of 2 meters.

Water flow through the toroid enables the hydro-magnetic dynamo to function as an over-unity electrostatic transformer. Electromotive force is induced by windings around the toroid.

The hydro-magnetic dynamo's production cost is estimated at \$500 per kilowatt. The hydro-magnetic dynamo's electricity would be priced .1 cent per kilowatt-hour. Capacities can range from 100 kilowatts to 1000 megawatts. Seven 1000-megawatt hydro-magnetic dynamos can be vertically stacked to combine into a single 7000-megawatt fuel-less hydro-magnetic dynamo.

For comparison, Hoover Dam's 17 generators have a total nameplate capacity of 2080 megawatts.

Inventor: Oleg V. Gritskevitch, Vladivostok, Russia
rexresearch.com/gritskevich/gritskevich.htm
padrak.com/vesperman "Locomotive Power Sources"
Russian Patent WO 011505A1

Electrino Fusion Power Reactor

The electrino fusion power reactor is a safe pollution-free generator of 1880 megawatts, net, of DC electricity. A linear accelerator (jpaw.com) collides two beams of electrons at 940 million electron volts. The electrino fusion power reactor's size would be 80' x 10' x 10'. 150 lbs of brass would be consumed over 100 years before shutdown for accelerator rebuilding. Super novae and $\eta'(938)$ decay confirm electrino fusion theory.

The energy released in annihilation photons would be 3760 megawatts. "Annihilation photons" are the 940 MeV X-rays produced when a negatron annihilates a proton. These X-rays are converted to electricity by order-to-disorder arrow-reversed photo-voltaic cells with nearly 100% efficiency. To sustain the electrino fusion reaction, 1880 megawatts would be taken from the 3760 megawatts output to power the folded linear accelerator, its eight 35 to 50-megawatt pulsed klystrons, magnets, power supplies, controls, etc.

The first 1880-megawatt electrino fusion power reactor may cost \$120 million. Subsequent electrino fusion power reactors would cost \$50 million. The price of its electricity would be a little more than .1 cent per KWH. Other applications include anti-matter rockets and annihilation of radioactive waste.

Inventor: Gordon L. Ziegler, Lacey, Washington, USA
benevolententerprises.org box.net/shared/k0g5nkkjfb6okhmyr6um
padrak.com/vesperman "Locomotive Power Sources"

Electron Spiral Toroid Spheromak Micro-Fusion Reactor

The Electron Spiral Toroid Spheromak (ESTS) Micro-Fusion Reactor was derived from an explanation for ball lightning. The ESTS is a plasma toroid that is self-organized and self-stable with no magnetic fields to contain it. All spheromaks reported to date dissipate in microseconds. The ESTS has been observed to endure with no confining magnetic fields for hundreds of milliseconds, and theoretically will remain stable for many seconds. The micro-fusion reactor's fuel comprises of hydrogen and boron.

Safe, pollution-free micro-fusion reactors could reliably generate electricity with capacities ranging from 10 kilowatts through 1000 megawatts at 10% of today's electricity price.

All transportation vehicles could be reliably and safely powered by micro-fusion reactors with substantially lower production, operating and maintenance costs, and without toxic emissions.

The mass and cost of aircraft may be reduced by 70%. Space launch costs may be reduced by more than 95%.

Inventor: Clint Seward, Acton, Massachusetts, USA electronpowersystems.com
US Patents 5,175,466, 5,589,727, 5,773,919, and 6,140,752
padrak.com/vesperman "Locomotive Power Sources"

Moe-Joe Orgone Energy Cell

In spring 2008 a spherical Moe-Joe Orgone Energy Cell, operating as an orgone energy accumulator, was installed in a 1993 Saturn. Orgone energy is transferred from the cell through a tube into the engine via its PCV valve intake. The Saturn's mileage jumped from 30 MPG to 47 MPG with 90% less exhaust pollutants.

The Moe-Joe orgone energy cell comprises of four concentric thin spherical stainless steel shells – 5, 4, 3, and 2 inches in diameter. The ball is filled with specially charged water and then sealed. Holes allow the special water to circulate between the inner shells. The Moe-Joe orgone energy cell does not generate hydrogen nor Brown's gas. Electrodes at the cell's north and south poles are respectively wired to the battery's positive post or engine ground. One end of the orgone energy transfer tube is fitted over a bolt about 30 degrees off the north pole. The charged water itself does NOT enter the engine. It is orgone energy that significantly adds power to the engine.

A car's computer injects more fuel when its oxygen sensor senses the fuel mixture becoming too lean. Special electronics are required to fool the computer. Standalone non-computerized diesel and gasoline generators would consume much less fuel.

Inventors: Joe, Australia, and Moshe Daniel Block, Lachine, Quebec, Canada moe-joe-cell.com
padrak.com/vesperman "Torsion Field Physics and Torsion Field Communications" and
"Advanced Technologies for Foreign Resort Project"
James DeMeo's "Orgone Energy Accumulator Handbook"

Thorium Powerpack

Thorium is abundant enough to power the entire planet for millennia. The Thorium Powerpack is inherently safe with no risk of "meltdown" nor radioactivity contamination. Its nuclear reaction simply stops when its neutron exciter is turned off.

A thorium powerpack's neutron excitor relies on resonant phonon pair cleavage using specifically designed nuclear lattice holo-forms (holographic waveforms) to induce neutron imbalance in a host atom where the host atom then attempts to establish "balance" through the liberation of neutrons.

Maintenance-free thorium powerpacks can generate 50 or 100 kilowatts for home use, and up to 1 megawatts for other uses at 10% of current electricity prices . They actually are "power amplifiers" with power outputs of 60 times over input power.

Inventor: Robert J. Dratch, Black Hawk, Colorado, USA bob-dratch.org
padrak.com/vesperman "Locomotive Power Sources"

Capacitive step-down Transformer

The Capacitive step-down Transformer is a simpler, cheaper, lighter, smaller, nearly 100% efficient alternative to inductive transformers. Capacitive step-down Transformers do not have inductive, noise, heat and sound losses of inductive transformers.

Capacitive step-down Transformers can be used anywhere that is stepping down high voltages, low amperes into lower voltages, higher amperes – industry, commercial, residential and appliances. Not using Capacitive step-down Transformers has resulted in lower efficiency of transmission and distribution with enormous waste of electricity.

Capacitive Power Supplies are inherently capacitive amperage limiting. So therefore short circuits do not damage them. A brownout or blackout in one area of the grid will not take down any generators that are protected with CPS technology. There is no need for electronic controls or a grid infrastructure upgrade – the amperage control is automatic and instantaneous. If a solar flare blows out many inductive transformers, Capacitive step-down Transformers can be fast, effective replacements.

Capacitive step-down Transformers can also be reconfigured quickly and easily onsite to handle more or less wattage or to change voltage and amperage ratios. All applications that use step-down transformers can be converted.

Inventor: George Wiseman, Oroville, Washington, USA
Author of "Capacitive Battery Charger" eagle-research.com

Environmental Heat Engines for Emergency Nuclear Fuel Cooling

Problem: Every century or two the sun aims towards the earth a huge coronal mass ejection causing an electromagnetic storm intense enough to blow out numerous inductive transformers. Power grids could go down for months. But nuclear reactor cooling pumps can only rely on diesel generators for at most a few days. Blackout-crippled refineries would not be able to supply diesel fuel for several months. Without cooling pumps, nuclear reactors and spent fuel storage pools would overheat – releasing catastrophic radiation ala Chernobyl and Fukushima.

Solution: Efficient and pollution-free environmental heat engines absorb ambient heat to expand a working fluid such as Freon or ammonia which pushes pistons through sealed chambers. An environmental heat engine can utilize a nuclear reactor's own natural low-grade heat to drive an auxiliary generator. The reactor's cooling pumps can be powered with the generator's electricity until the local power grid is eventually restored.

Robert Stewart's "Stewart Cycle" engine, Vapor Actuated Power Generating Device, Patent No. 4,033,136; Ralph J. Lagow's Method of Generating Power from a Vapor, Patent No. 4,693,087; Ken Rauen's Rauen cycle and Superclassical cycle engines; and George Wiseman's Wise cycle.

Inventors: Robert Stewart, Ralph J. Lagow, Ken Rauen, and
George Wiseman, Oroville, Washington, USA eagle-research.com

Thank you for your comment, Tomas Lopez.

The comment tracking number that has been assigned to your comment is SEDDSupp20040.

Comment Date: January 23, 2012 16:17:33PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDSupp20040

First Name: Tomas
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Country: USA
Privacy Preference: Don't withhold name or address from public record
Attachment:

Comment Submitted:

I have read and followed the survey for the East Mogotes. In the beginning, I understood that US Department of Interior and US Department of Energy would liked to have collaborated among BLM, Tribal, and private entities. My families owns one section of private property adjacent to one section of land grazing permit in the East Mogotes. For three generations my family depended on this use to support their families.

I have tried to contact electric companies regarding the possibilities of using the property for solar use and I have not received one response. My family would have liked to have supported their families for generations to come by leasing our property. It seems the less affluent you are the opportunity to achieve economic success is unlilely. The concept of mass solar as described in the report could bring energy beyound my comprehension and would bring to Conejos County employment and revenues by way of taxes is unimaginable.

Wiil the departments hold to what was committed to the beginning of their exploration?

Thank you for your comment, Marc Syrene.

The comment tracking number that has been assigned to your comment is SEDDSupp20041.

Comment Date: January 23, 2012 16:25:59PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDSupp20041

First Name: Marc
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State: CO
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Country: USA
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Attachment:

Comment Submitted:

Hello, I would like to comment on the over 100,000 acres of public land in the San Louis Valley Colorado that is being considered for industrial solar developement. I am very opposed to this. For one I don't know how it does not violate the multi use laws that govern these lands. Once a solar farm goes up it is fenced off and no access to the public and no other use will it have indefinitely. The corporation who developes it stands to benefit greatly while the public and the environment loses greatly. Don't get me wrong, I am for renewable energy and have hydronic solar heat and passive solar heat on my home. I just don't think you have to rob Peter to pay Paul when it comes to a renewable and sustainable future. I am for point of use instalations and brown field instalations, which there are plenty of. If you want to subsidize renewable energy then do it in the form of feed in tariffs. please do not use up these ever more rare large contiguous pieces of land that are so precious to the ecology. We just can't keep gobbling up every thing. There is a much better way. Please preserve these public land for the public and ecology and find a way to do this in a better way. We only get one chance to do this right. Feed in tariffs allow communities and private individuals to be a part of and benefit from a renewable energy future and as has been proven accomplish it faster and without the need for new power lines. Please vote for the people and environment and not these big companies. I have a friend who's job it is to dig up endangered turtles in the Mohave and try and relocate them out of the way of these huge solar farms. This is mind boggling this day and age. We know better.

Thanks for recieving my input- Marc.

Thank you for your comment

The comment tracking number that has been assigned to your comment is SEDDSupp20042.

Comment Date: January 23, 2012 16:49:07PM

Supplement to the Draft Solar PEIS

Comment ID: SEDDSupp20042

First Name: [Withheld by requestor]

Middle Initial:

Last Name: [Withheld by requestor]

Organization:

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Address 2:

Address 3:

City: [Withheld by requestor]

State: [Withheld by requestor]

Zip: [Withheld by requestor]

Country: [Withheld by requestor]

Privacy Preference: Withhold name and address from public record

Attachment:

Comment Submitted:

Thank you for the opportunity to comment. I believe that there should be an alternative that considers the impacts of distributed solar vs. mega solar plants. Distributed solar being the production of energy where it is used, such as rooftops, parking lots, brownfields.

This would impact the current grid system. How? What would it take to improve the current grid to accommodate distributed solar? We should NOT be using public lands for clean, renewable energy until we have looked at and evaluated all other alternatives - including distributed solar.

We should NOT be giving financial preference to companies which use up our public lands without first looking at ALL the alternatives.

Thank you for your comment, Susan Pintus.

The comment tracking number that has been assigned to your comment is SEDDSupp20043.

Comment Date: January 23, 2012 19:15:09PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDSupp20043

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Attachment:

Comment Submitted:

Dear Ms. Resseguie:

It has come to our attention that most of the Vinagre Wash Special Management Area that is proposed in Senator Dianne Feinstein's California Desert Protection Act of 2011 (S. 138) is zoned as a "variance area," or "lands available for solar energy right-of-way applications" under the Modified Program Alternative in the SPEIS.

We urge you to remove the proposed SMA from the variance area because:

- It is composed of extremely rugged, rolling terrain that is inappropriate for solar development;
- The portions that are relatively flat are in large washes that experience violent flash floods;
- The US Navy uses the SMA to train some of its most elite personnel, including the SEALs, and from what we understand the area must remain undeveloped for it to meet the Navy's training needs;
- It is a popular area for family recreation, including backcountry four-wheeling opportunities that are not available elsewhere in the region;
- It is adjacent to the Indian Pass Wilderness and lands that are proposed as potential wilderness in S. 138;
- The area contains many important Native American cultural sites; and
- The area is known for its great ecological diversity and importance, especially the riparian woodlands that grow along Milpitas Wash.

Thank you for considering our comments.

Thank you for your comment, Bonnie Poulos.

The comment tracking number that has been assigned to your comment is SEDDSupp20044.

Comment Date: January 23, 2012 23:12:52PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDSupp20044

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Attachment:

Comment Submitted:

New energy sources are not an excuse to put development on wild lands. The transmission lines should take the path that causes the least amount of damage to the land and uses existing corridors as much as is physically possible. Fiscal considerations are only one of the variables that must be considered, and if it is more expensive to use existing corridors, then we need to find other partners who can find a way to route them along already developed areas.

Thank you for your comment, Matthew Slowik.

The comment tracking number that has been assigned to your comment is SEDDSupp20045.

Comment Date: January 24, 2012 10:39:15AM
Supplement to the Draft Solar PEIS
Comment ID: SEDDSupp20045

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Attachment: SB County Comment Ltr on Supplement Draft PEIS_01-17-2012.docx

Comment Submitted:

LAND USE SERVICES DEPARTMENT



COUNTY OF SAN BERNARDINO

PLANNING DIVISION

385 North Arrowhead Avenue • San Bernardino, CA 92415-0182
(909) 387-4237 Fax (909) 387-3223
<http://www.sbcounty.gov/landuseservices>

Christine Kelly
Director

January 17, 2011

Solar Energy Supplement (Solar Energy Draft PEIS)
Argonne National laboratory
9700 S. Cass Avenue- EVS/240
Argonne, Illinois 60439

RE: **San Bernardino County Review and Comments on the Supplement to the Draft Programmatic Environmental Impact Statement (PEIS) for Solar Energy Development in Six Southwestern States [DES 11-49: DOE/EIS-0403D-S]: Doc: 1610 (300)**

Attn U.S. Department of the Interior, and U.S. Department of Energy:

Thank you for providing us a copy of the above-stated document. San Bernardino County has reviewed the Supplement to the Draft PEIS and is providing the following comments:

SUMMARY OF THE SUPPLEMENT TO THE DRAFT PEIS

- The County recognizes that a primary objective of the Solar Energy Program is to increase certainty regarding solar development of BLM-administered lands by identifying and prioritizing specific locations best suited for utility-scale solar energy development on public lands. And, in so doing, BLM's intent is to comply with the Energy Policy Act of 2005. To this end, the BLM proposes a "**preferred alternative**" to emphasize the concept of Solar Energy Zones (SEZs), and also allows for solar energy development projects outside of SEZs [through a "**variance**"]. Further, there is a process/protocol included to identify new SEZs (based on a minimum 5-year review). Additionally, the Department of Interior (DOI) is encouraging development of renewable energy on appropriate "non-federal land".
- The BLM defined the scope (magnitude) of solar energy development as the "**Reasonably Foreseeable Development Scenario**" (RFDS) for purpose of evaluation in the PEIS. Table 1.6-1 (page 1-8) of the Supplemental PEIS identifies the corresponding developed acreage estimates for the Reasonably Foreseeable Development Scenario. For California, it is estimated that **138,789 acres** of BLM land, and **46,260 acres** of non-BLM land would be required to accomplish the RFDS. The estimated total is 185,049 (BLM and non-BLM land).
- Table 2.3-1 (page 2-43) identifies the potentially developable BLM-administered land in California for each of the three project alternatives evaluated in the Supplemental PEIS. These are summarized as follows:

No-Action Alternative	10,815,285 BLM Acres
Modified Program Alternative (BLM-Preferred Alternative)	1,354,559 BLM Acres
Modified SEZ Alternative	153,627 BLM Acres

- The proposed “**variance areas**” (and associated variance process) would only apply to utility-scale solar development (i.e., projects capable of generating 20 MW or greater of electricity). Approved variances would allow utility-scale solar development outside of SEZ areas. The BLM will consider variance applications on a case-by-case basis; and, these are discretionary decisions. The main difference between the “**Modified Program Alternative**” and the “**Modified SEZ Alternative**” is the amount of land available for utility-scale solar development due to the “variance process”. The “Modified SEZ Alternative” does not include the “variance process”. As indicated in Table 2.3-2 (captions) the difference is as follows:

Total Plan Area (i.e. all six States):

- Modified SEZ Alternative
 - Approximately 285,000 BLM-acres are available in priority areas
- Modified Program Alternative
 - Approximately 285,000 BLM-acres are available in priority areas
 - Approximately 20 million acres subject to variance process

This (variance process) is also the primary reason for the identified difference in the amount of available land in California slated for utility-scale solar development (Table 2.3-1):

California (only)

- Modified SEZ Alternative
 - Approximately 153,637 BLM-acres
- Modified Program Alternative
 - Approximately 1,354,559 BLM-acres

[NOTE: The other aspects of the Program such as SEZ-specific design features, exclusion areas, authorization policies, and adaptive management, are the same for these two alternative program proposals].

ANALYSIS OF POTENTIAL ENVIRONMENTAL IMPACTS OF ALTERNATIVES- INADEQUATE

Although the PEIS admits the analysis is almost purely qualitative, it appears that Table 2.3-2 (in its entirety), oversimplifies the analysis. The “Summary-Level Assessment of Potential Environmental Impacts by Alternative” (Table 2.3-2), and the “Analysis of the Impacts of the Modified Solar Energy Development Program (Section 2.3.1, pages 2-62 through 2-69) provide an inadequate assessment of potential environmental impacts of the “Modified Program Alternative”.

The analysis repeatedly claims that the “Modified Program Alternative” somehow, qualitatively “**minimizes**” potential environmental impacts when compared with the “Modified SEZ Alternative”; and, “**minimizes**” potential environmental impacts, in general. This disposition primarily hinges on two claims:

- First, that the “Modified SEZ Alternative” could increase the magnitude of potential impacts as the impacts would be concentrated into a smaller area.

- Second, that potential environmental impacts will be “**minimized**” as a result of the “variance” component of the “Modified Program Alternative”.

The claim that the “Modified SEZ Alternative” would have increased magnitude of potential environmental impacts as the impacts would be concentrated into a smaller area (as compared to the Modified Program Alternative) fails to recognize that: 1) the Modified SEZ Alternative includes the process to add new SEZs, 2) that the authorization policies, adaptive management, specific design features, and exclusion areas are common to both alternatives, 3) that identification of additional available solar development areas is occurring through the California DRECP Planning effort, and 4) that SEZ areas have been identified based on an inherent (known) existing “low resource conflict”.

Thus, for the reasons stated above, the Supplemental PEIS qualitatively, wrongly, implies that the “Modified SEZ Alternative” (as compared to the Modified Program Alternative) will have greater (and/or an increased “magnitude” of) potential impacts as the impacts would be “concentrated into a smaller area”. Further, the SEZ feature/component is similar to both alternatives, and thus the “potential impacts” that could occur (within the SEZ areas) are thus, not any lesser or greater (in magnitude, or degree) for either alternative regardless of other non-SEZ features/aspects of each alternative.

Potential environmental impacts may be “less” (or “more”) for one alternative relative to another alternative, however, there is no justification, in the Supplemental PEIS that potential environmental impacts will be “**minimized**” as a result of the “variance” component of the Modified Program Alternative; nor, “**minimized**” by the Modified Program Alternative, in general. In fact, the opposite is likely the case. The “variance” component is the distinguishing feature among the alternatives. The Modified Program Alternative (w/variance component) includes 1.2 million more BLM-acres subject to potential environmental impacts (as compared to the Modified SEZ Alternative). Also, it is undefined as to how much of this additional 1.2 million BLM-acres is in San Bernardino County. Clearly, potential impacts to 1,354,559 BLM-acres (Modified Program Alternative) are greater than potential impacts to 153,627 BLM-acres (Modified SEZ Alternative). Further, it is undefined as to what impacts will occur to private lands in San Bernardino County.

UNRESOLVED SAN BERNARDINO COUNTY CONCERNS

Because of the unknown/undefined potential environmental impacts to San Bernardino County, we have the following, ongoing concerns (particularly regarding the Modified Program Alternative (i.e., BLM-Preferred Alternative). The following comments are restated from our April 11, 2011 comment letter on the Draft Programmatic EIS:

1. Mitigation Lands

[First], the “Solar Energy Development Program Alternative” [now, the “Modified Program Alternative”] is the BLMs/DOEs stated preferred alternative. This alternative includes 21.5 million acres of BLM administered lands; 1.76 million acres of these lands in California (as shown in Table ES 2-1). Under this alternative, it is highly likely there would not be enough land in the affected California-Counties to be able to mitigate this amount of renewable energy project development. For this reason alone, the statement made on page ES-29, lines 21-23, regarding the “Solar Energy Development Program Alternative” (i.e. “BLM’s Preferred Alternative”), that, “Simultaneously, it (i.e. this alternative) would provide a

comprehensive approach for ensuring that potential adverse impacts would be **minimized** to the greatest extent possible," is unfounded.

This point is extremely important, and in fact critical to San Bernardino County. The fundamental issue is that the wildlife agencies, specifically the U.S. Fish and Wildlife Service (FWS) and the California Department of Fish and Game (CDFG), have been requiring mitigation for desert tortoise to include the acquisition of private land and subsequent donation ("compensation") of the land to either BLM or CDFG. The mitigation ratio is often as high as three (3) acres of private land per acre (1) of development. This has the effect of increasing the federal estate in the County, and taking land off the tax rolls. The federal Payment in Lieu of Taxes (PILT) program does not provide funding to offset this loss of revenue. Most critically, and germane to the mitigation issue, is that a) private lands are diminishing in the County and will likely not exist in sufficient quantity to meet mitigation requirements, b) as land leaves the tax rolls, the ability of the County to maintain its infrastructure and supply services diminishes at the very time the solar developments will increase use of those very services, and c) San Bernardino County, like all Counties in California, is unable under state law to collect property tax (which might offset at least part of the loss and cost) on the capital investments made for solar developments as a result of State law exempting such development. The County has advocated that mitigation be changed to a development/mitigation fee in which the funds can be directed to direct projects which could foster appropriate land management, improvement and research, and such has been authorized under SB-34, a recent state law. However, to date, the wildlife agencies have been unwilling to accept such mitigation except in addition to land compensation. We believe that the Solar PEIS could and should become a further advocate for bringing the mitigation issue to the fore, and proposing that mitigation be in the form of investments for improvement, recovery actions and research on listed and candidate species, and that land acquisition and increasing the federal estate be removed as a mitigation measure.

[Second], the "Modified SEZ Alternative" would authorize solar energy development only in the identified SEZs. In addition to those listed, the BLM could decide later to increase or decrease the total SEZ area. The amount of BLM lands constituting the Modified SEZ Alternative in California is 153,637 acres. This amount of acreage is enough to support the estimated land needs of the "reasonably foreseeable (future) development scenario."

The amount of BLM lands constituting the "Modified Program Alternative" in California is 1,354,559. For this alternative, mitigation requirements in California could possibly exceed two or three million acres. Under this alternative, it is also highly likely there would not be enough land in the affected California-Counties to be able to mitigate this amount of renewable energy project development, unless our suggestion, above, were adopted.

If such mitigation lands, in their entirety, were to be private lands, then (for either of the two alternatives) there will not be enough mitigation lands in San Bernardino County; and for the reasonably foreseeable development scenario, it is highly probable that mitigation lands may be used up and not available for future development projects. The scale would render vast portions of private land unavailable for future use and would severely limit the ability of future development to adequately mitigate its impacts. *[NOTE: An example of such potential cumulative impact is the Ivanpah SEGS Project. The mitigation set aside for this 4,073 acre project is 8000 acres (at a 3:1 ratio). In San Bernardino County, 8,000 acres represents 5 % of the 140,000 acres of potential desert tortoise habitat held in private lands within the County.]*

[Third] given that the PEIS will apply to projects that will have direct and indirect impacts upon private lands, and given that nothing in the PEIS document specifies which type of lands (public or private) will

be mitigation lands; therefore, San Bernardino County recommends the following kinds of mitigation be included for consideration on any specific project:

- The land and wildlife management agencies determine an appropriate mitigation fee based on criteria associated with habitat replacement or other quantitative criteria. Such funds paid by the developer to a trust (such as currently exists under the auspices of the Desert Managers Group (DMG) and its MOU with the National Fish and Wildlife Foundation (NFWF), who would dispense the funds to appropriate mitigation projects and measures. Issuance of the Revised Recovery Plan for desert tortoise is imminent, and Recovery Action Plans (RAPs) will be developed for each recovery unit. Implementation will require funding, and such funding will be limited from appropriations, thus mitigation funds will be an appropriate and welcome source with which to proceed with carrying out the RAPs. We envision such funding would be used for projects such as fencing, habitat restoration, invasive weed control, hazard reduction where hazards contribute to tortoise death, research, monitoring, increased enforcement, and population augmentation with programs such as head starting.

The developer could acquire private rights that exist on public land. Since many BLM-administered lands have use entitlements associated with them (particularly through right-of-way authorizations, etc.), then in terms of fairness to land owners (private property owners) and renters, lessees, permittees, or holders of valid existing rights (public property) alike, both public and private lands should be analyzed, evaluated, and considered for identification as potential mitigation lands. This strategy would result in greater equity among all parties in that mitigation responsibility would be shared among public and private landowners, renters, permittees, or lessees.

[Fourth], it is recognized, as stated on page 2-26, lines 15-16, of the PEIS that comments previously provided suggest, “. . . that the scope of the PEIS include evaluation of development on other federal lands . . . state lands, and private lands.” The comment above is not repeating this suggestion. Rather, the comment above is stating that federal lands (with use entitlements) need to be considered or utilized as mitigation lands in a similar manner as private lands. BLM, through the process of revising the Land Use Plans (Resource Management Plans) should identify those public lands that could be identified or offered as mitigation lands (separate, and aside from, ‘exclusion areas’). Further, follow-on site-specific environmental analysis of solar energy projects needs to include, consider, and utilize federal land as mitigation in a similar manner as private lands.

[Fifth], the County supports mitigation requirements that address the loss of historic and recognized land uses including dispersed recreation (OHV use or hunting), livestock grazing, and general public access to public lands. San Bernardino County recommends that projects which remove areas of relatively flat, accessible land historically providing for grazing allotments, access routes to back country, and open OHV play should be mitigated by the dedication of other areas of public land to such activities or possibly the acquisition of lands that can be so dedicated.

In summary, San Bernardino County recommends that the BLM/DOE identify and evaluate an additional alternative in the PEIS if the Final PEIS continues to endorse the use of private land acquisition and donation to the public estate. The additional alternative would be a “Solar Energy Zone (SEZ) Program at a scale commensurate with the Reasonable Foreseeable Development.” This would provide an evaluation at a scale that balances the need to provide for renewable energy projects and at the same time could define a “realistic” extent of mitigation lands. Further, such alternative could factor in both public and private lands as potential mitigation lands. This would also need to provide for replacement of grazing allotments, access routes, open OHV play areas, etc. by dedication of other areas of “public land” to such activities. This type of alternative could ensure that mitigation lands are available in the

future, for other development proposals (i.e., projects other than renewable energy projects). The County's preferred alternative would be to shift mitigation to the charging of a development/mitigation fee which would provide for a suite of mitigation measures and could assure that such funding be spent on the highest priority projects with the highest expected benefit to the species for which mitigation is being sought.

2. Water

The Solar PEIS states (page 5-37, lines 22-24), "The six-state study area is largely composed of arid landscapes; thus water use by solar energy technologies is a significant consideration for water resources impacts and also requires the analysis of water and land management practices." Although identified as significant, the "water analysis" is lacking in the PEIS.

The PEIS states on page 5-39, lines 12-13, "In most areas, groundwater would likely be withdrawn from local aquifers to meet the project's water needs," and on page 5-37, lines 24-27, "acquiring reliable, long-term water supplies to support utility-scale solar facilities would entail either the acquisition of unallocated water supplies (depending on availability) or the conversion of existing water rights from current uses." Although it is presumed most water will come from groundwater basins, no evaluation of impacts to groundwater basins is included in the PEIS. Without clarity of impacts upon water resources, how can appropriate, applicable, realistic, meaningful mitigation measures be identified?

Unfortunately, the PEIS only provides "General Estimates of Water Requirements for Various Solar Power Plant Configurations" (page 5-45, Table 5.9-1). There is no link of these stated water estimates to actual water demand or to actual water availability (supply).

Also, the PEIS (page 5-46, lines 24-34) gives a series of "Potentially Applicable Mitigation Measures." These "measures" (which are basically "hopes" and "desires") are stated on pages 5-47 through 5-55. All of these "measures" describe what "should" occur or what is "hoped or desired" to occur, but have no substance as to what "can" or "will" occur regarding mitigation of significant impacts to water. "Measures" such as

- "Project developers should quantify water use requirements for project construction, operation, and decommissioning" (page 5-50, lines 7-8), and
- "The use of water should not contribute to the significant long-term decline of groundwater levels or surface water flows and volumes. Any project-related water use should not contribute to withdrawals that exceed the sustainable yield of the surface water or groundwater source." (page 5-54, lines 39-42)

are stated as wishes, hopes, and desires; not as compulsory requirements. Per the PEIS, these "measures" are identified as only "potentially applicable." This means that significant impacts to water resources will likely not be mitigated.

Further, under San Bernardino County Ordinance 3872, adopted in October 2002, groundwater withdrawals in unadjudicated basins that will harm the Groundwater Safe Yield are not permitted. Groundwater Safe Yield is defined in Section 33.06553 (i) as: "The maximum quantity of water that can be annually withdrawn from a groundwater aquifer (i) without resulting in overdraft (ii) without adversely affecting aquifer health and (iii) without adversely affecting the health of associated lakes, streams, springs and seeps or their biological resources." The County of San Bernardino and the U.S. Bureau of

Land Management entered a Memorandum of Understanding in 2003 for implementation of Ordinance 3872 on public lands in the Mojave Desert.

In summary, as the entire Southwest has been in a severe drought this past decade and deliveries of imported water become increasingly unreliable, the PEIS must examine in detail the impact on water, including groundwater aquifers. The impacts upon water resources from solar energy projects will be significant, individually, and cumulatively. The PEIS must consider and evaluate the cumulative impacts on water supply throughout the desert in light of ongoing urban growth, reduced supplies, and the need to maintain the health of desert ecosystems. The water issue must be examined in total, and evaluation of all supplies and demands of water projected for the study areas must be performed. Only upon completion of such evaluation can appropriate, applicable, realistic, and meaningful mitigation measures be identified. "Mitigation" must be compulsory, rather than a "wish list" of actions. Given the scarcity of water, and existing appropriations, San Bernardino County recommends that the Final Solar PEIS must include an alternative or advocacy for the use of "dry" technology for development.

3. Endangered Species (and Special Status Species)

According to NEPA, the federal agencies are not required to implement mitigation measures. As a result, the Programmatic Environmental Impact Statement (Chapter 5) only includes "Potential Mitigation Measures." Thus this Chapter identifies "Potential Mitigation Measures" that "should be" implemented, but also may not be implemented. Further, pages 5-62 (Table 5.10-1), 5-96 (Table 5.10-2), 5-110 (Table 5.10-3), and 5-123 (Table 5.10-4) state that for the overall project evaluated in this PEIS, the ability to mitigate impacts to habitat, plants and wildlife, aquatic resources, and special status species (including threatened, endangered, sensitive, and rare species) is "relatively difficult," and, "depends on the size of area development," and "depends on site-specific conditions." Thus, the PEIS is inconclusive as to the ultimate impact upon endangered (and special status) habitat, plant, and wildlife species. The ultimate impact upon endangered (and special status) habitat, plants, and wildlife species can only be determined at the project-specific evaluation level. Since the ability to mitigate impacts can only be determined upon identifying the size of area to be developed, and at the project-specific evaluation level, then the PEIS cannot conclude impacts to endangered (and special status) habitat, plants, and wildlife will be "mitigated," nor make any conclusions about "impacts" to endangered (and special status) habitat, plants and wildlife.

The mitigation measure on page 5-131, lines 39-42, states, "If any federally listed threatened and endangered species are found during any phase of the project, the USFWS should be consulted as required by Section 7 of the ESA, and an appropriate course of action should be determined to avoid or mitigate impacts," and the measure on page 5-134, lines 3-4 and 36-38, states, "The plan should include but not necessarily be limited to the following element, where applicable: . . . Measures to mitigate and monitor impacts on special status species developed in coordination with the appropriate federal and state agencies (e.g., BLM, USFWS, and state resource management agencies)." Relative to these particular mitigation measures, San Bernardino County opposes the acquisition of habitat at a multiplied (e.g., 3:1) mitigation ratio for desert renewable energy projects because the scale of the proposed projects (as defined by the PEIS) would render vast portions of private land unavailable for future use and could severely limit the ability of future development to adequately mitigate its impacts. Instead, San Bernardino County supports the implementation of an "in-lieu" fee program that will provide much needed funding for conservation, habitat restoration, implementing species recovery strategies, and predation control, but not be used to purchase vast tracts of mitigation lands or impose additional restrictions on public or private land.

4. Infrastructure Impacts- Development-Operations-Funding

The PEIS only addresses “Transportation” from a narrowly defined perspective, that is: Traffic Hazards and Circulation/Capacity. The PEIS does not address “Transportation” from the “Development-Operations-Funding” perspective. Thus, the PEIS general mitigation measures on pages 5-257, lines 12-46, and page 5-258, lines 1-3 (of the Draft PEIS), related to “Transportation” only focus on “Traffic Management Plans” and traffic hazards reduction.

Thus, the PEIS does not provide any information relative to how the proposed program (as defined in the PEIS) will impact “Transportation” from the development, operations and funding standpoints. No current mechanism exists to address the impacts these projects will have on public safety facilities and transportation infrastructure in San Bernardino County. Large scale development existing in desert areas is already underfunded for public safety facilities because of significant federal ownership. Also, the proposed program (as defined in the PEIS) will only exacerbate impacts on the County’s limited financial resources. According to the County’s policy statement relative to these types of projects, the County is open to “a variety of approaches to address this issue, including targeted Development Impact Fees and/or direct mitigation in the form of developer constructed facilities, and is requesting that the state and federal energy and resource agencies (California Fish and Game, U.S. Fish and Wildlife Service, California Energy Commission, BLM, etc.) implement policies and procedures requiring developers of utility-scale renewable energy projects to enter into mitigation agreements, pay appropriate fees, or develop other mechanisms to mitigate impacts on local agencies.” The County recommends including this language in the PEIS as mitigation.

Also, no current mechanism exists to address the impacts these project will have on the ongoing costs of providing adequate public safety and transportation services, as well as the loss of recreation and tourism revenue. Again, according to the County’s policy statement, the County is open to “a variety of approaches to address this issue, including Possessory Interest Tax, Federal Lease Revenue Sharing, Community Facilities District Formation, and others.” The County recommends including this language in the PEIS as mitigation. Preliminarily, it appears that the ongoing operation and maintenance costs will be addressed by a Possessory Interest Tax, which should approximate property tax revenue given the expected long term of a federal land lease.

5. Mining

The potential impacts (of either proposed Alternative) upon mining in San Bernardino County are unclear/unknown.

SUMMARY

San Bernardino County has goals similar to a number of local county and city jurisdictions regarding renewable energy, including:

- 1) Encourage economic growth and job creation;
- 2) Conserve our unique natural resources;
- 3) Find the best balance to achieve both of the above;
- 4) Encourage sustainable renewable energy projects;
- 5) Require projects to pay their own way so our taxpayers don’t subsidize them; and

- 6) Support practical mitigation strategies that do not consume excessive amounts of land.

We also have concerns similar to a number of local jurisdictions, including:

- 1) Large-scale project will result in lost economic opportunities. Tourism, mining, grazing, film industry, and recreational opportunities will be lost.
- 2) The current California Department of Fish and Game paradigm requires multiplying project lands by a ratio not found in any regulations or even a written policy. Some projects are hit with additive mitigation for different species. The Modified Program Alternative (1,354,559 BLM acres in California) would involve a quantity of mitigation acreage that likely would not be sustained in San Bernardino County. These lands also represent lost economic opportunity and thus increase the project impacts.
- 3) There is no clear path for local governments to have economic impacts addressed and mitigated. Costs to local infrastructure and public services are not fully addressed by federal agencies or the California Energy Commission.

Local governments support renewable energy, and we look forward to the positive economic impact the development of these projects can bring to our local economy. This proliferation of energy projects in the Mojave Desert require careful evaluation and consideration of the appropriate mitigation measures that are needed to protect the environment, future development, and the economy of our region. Because many of these projects will be built on federally-owned land or are under the jurisdiction of the California Energy Commission, local governments do not have control over them. Yet the projects result in impacts on local government infrastructure and services with no clear mitigation mechanism. As stated above, the Solar Preliminary Environmental Impact Statement does not adequately address these impact issues.

If you have any questions, regarding this letter, please direct them to Matt Slowik at mslowik@lusc.sbcounty.gov or call him at (909) 387-4237.

Sincerely,

CHRISTINE KELLY, DIRECTOR
Land Use Services Department

Cc: Brad Mitzelfelt, First District Supervisor
Gerry Newcombe, Deputy Executive Officer
Bart Brizzee, Deputy County Counsel
Bobby Lewis, Planning Director
Terri Rahhal, Planning Manager

Thank you for your comment, Annie Walker.

The comment tracking number that has been assigned to your comment is SEDDSupp20046.

Comment Date: January 24, 2012 11:51:13AM
Supplement to the Draft Solar PEIS
Comment ID: SEDDSupp20046

First Name: Annie
Middle Initial:
Last Name: Walker
Organization:
Address: [Withheld by requestor]
Address 2:
Address 3:
City: [Withheld by requestor]
State: [Withheld by requestor]
Zip: [Withheld by requestor]
Country: [Withheld by requestor]
Privacy Preference: Withhold address from public record
Attachment:

Comment Submitted:

Dear BLM,

I am a user of public lands, and find them vital to my existence. For some weeks I have been following the controversy over utility sized solar and wind power installations.

Firstly, privately owned utilities do not belong on public land which has been set aside for wildlife and to preserve the last remnant of relatively unspoiled lands in California FOR THE PUBLIC. Allowing developers of utility solar and wind to destroy pristine desert lands for their own benefit is reprehensible.

None of the alternatives in the EIS are acceptable to me. After studying the Supplement to the Programmatic EIS, I see that the preferred alternative has a loophole which says that if a developer with a 'well site' project cannot find a location in an official Solar Energy Zone, then the DOI has created a variance such that they can develop outside the SEZ, basically making available for destruction the whole 22 million acres of public land out there.

When all roofs in California and Nevada have their own solar panel, then is the time to develop on previously degraded lands.

There are plenty of degraded exurban lands, abandoned fields, old mine dumps, and superfund sites.

The desert is not a vast and worthless land just waiting for development. Public lands anywhere are our last link to nature.

Thank you for your attention to this letter.

Thank you for your comment, Steven McCarroll.

The comment tracking number that has been assigned to your comment is SEDDSupp20047.

Comment Date: January 24, 2012 13:45:30PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDSupp20047

First Name: Steven
Middle Initial: J
Last Name: McCarroll
Organization: Conejos County Commissioners
Address: P. O. Box 157
Address 2:
Address 3:
City: Conejos
State: CO
Zip: 81129
Country: USA
Privacy Preference: Don't withhold name or address from public record
Attachment: PEIS comments.pdf

Comment Submitted:



Board of County Commissioners

J. Steven McCarroll
Chairman

John Sandoval
Vice Chairman

Mitchell Jarvies
Vice Chairman

January 23, 2012

Solar Energy PEIS
Argonne National Laboratory
9700 S. Cass Avenue – EVS/240
Argonne, IL 60439

To Whom It May Concern:

The Conejos County Board of Commissioners have been to several presentations on the Draft Programmatic Environmental Impact Statement (PEIS) for Solar Energy Development which includes a vast area of Conejos County Private and Public lands. The Board of Commissioners offers the following comments:

- The County has a concern on the large acreage proposed, which is Los Mogotes East 2,650 acres, the Antonito Southeast 9,712 acres and the close proximities to two of our municipalities.
- Question the economic benefit on utility rates to the citizens of Conejos County. Question the overall economic impact to Conejos County in the long range.
- Conejos County has concerns over impact on revenues from PILT (payment in lieu of taxes) if the large areas were to be taken out of the Pilt formula.
- Conejos County is limited on exiting transmissions. We are concerned about the process and effects of transmission lines and infrastructure on roads, bridges, public and private property, and also property rights.
- Such as large scale proposal would most likely affect the wildlife and other habitat in the area.
- The high use and its availability may add to the struggle that faces the Conejos River to meet the command of the State Compact on the Conejos and Rio Grande Rivers.

Thank you for the opportunity to comment.

Sincerely,
Conejos County Board of Commissioners

Steve McCarroll
Chairman

Thank you for your comment, Steven McCarroll.

The comment tracking number that has been assigned to your comment is SEDDSupp20048.

Comment Date: January 24, 2012 13:54:16PM

Supplement to the Draft Solar PEIS

Comment ID: SEDDSupp20048

First Name: Steven

Middle Initial: M

Last Name: McCarroll

Organization: Conejos County Board of Commissioners

Address: P. O. Box 157

Address 2:

Address 3:

City: Conejos

State: CO

Zip: 81129

Country: USA

Privacy Preference: Don't withhold name or address from public record

Attachment: PEIS comments.pdf

Comment Submitted:



Board of County Commissioners

J. Steven McCarroll
Chairman

John Sandoval
Vice Chairman

Mitchell Jarvies
Vice Chairman

January 23, 2012

Solar Energy PEIS
Argonne National Laboratory
9700 S. Cass Avenue – EVS/240
Argonne, IL 60439

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- Such as large scale proposal would most likely affect the wildlife and other habitat in the area.
- The high use and its availability may add to the struggle that faces the Conejos River to meet the command of the State Compact on the Conejos and Rio Grande Rivers.

Thank you for the opportunity to comment.

Sincerely,
Conejos County Board of Commissioners

Steve McCarroll
Chairman

Thank you for your comment, Eleanor Mueller.

The comment tracking number that has been assigned to your comment is SEDDSupp20049.

Comment Date: January 24, 2012 14:33:35PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDSupp20049

First Name: Eleanor
Middle Initial:
Last Name: Mueller
Organization:
Address: 191 Cascade Overlook
Address 2: The Baca Grande
Address 3: P.O. Box 216
City: Crestone
State: CO
Zip: 81131
Country: USA
Privacy Preference: Don't withhold name or address from public record
Attachment:

Comment Submitted:

It has been said that the San Luis Valley in Colorado is/will become a national sacrifice zone.

As a native of the state, I request that Board of Saguache County Commissioners say no to the Solar Reserve, "Final 1041" because of the endless environmental concerns and that the few TEMPORARY jobs are not worth the cost.

Thank you for your comment, Alfredo Figueroa .

The comment tracking number that has been assigned to your comment is SEDDSupp20050.

Comment Date: January 24, 2012 15:11:10PM

Supplement to the Draft Solar PEIS

Comment ID: SEDDSupp20050

First Name: Alfredo

Middle Initial: A

Last Name: Figueroa

Organization: La Cuna de Aztlan Sacred Sites Protection Circle

Address: 424 North Carlton Ave.

Address 2:

Address 3:

City: Blythe

State: CA

Zip: 92225

Country: USA

Privacy Preference: Don't withhold name or address from public record

Attachment: Solar PEIS Public Comments.pdf

Comment Submitted:

Attached you will find our comments letter.

Thank you,

Alfredo Acosta Figueroa

La Cuna de Aztlan Sacred Sites Protection Circle

Alfredo A. Figueroa
424 N. Carlton Ave
Blythe, Ca 92225



Phone: (760) 922-6422
E-mail: lacunadeaztlan@aol.com

Jane Summerson
Department of Energy
Washington Office
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Shannon Stewart
Bureau of Land Management
Washington Office
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Draft Solar Energy Programmatic EIS
Argonne National Laboratory
9700 S. Cass Avenue-EVS/240
Argonne, IL 60439

Solar PEIS Public Comment

Alfredo Acosta Figueroa
Chemehuevi Tribal Monitor
Elder/Historian of La Cuna de Aztlan Sacred Sites Protection Circle
424 North Carlton Ave.
Blythe, CA 92225
(760) 922-6422
Email: lacunadeaztlan@aol.com

This letter is in reference to the Solar PEIS Public Comments regarding the Supplement to the Draft Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States.

Our non-profit La Cuna de Aztlan Sacred Sites Protection Circle is a Native American organization which mission is to protect and preserve sacred indigenous sites that are located along the Colorado River. Our organization has an MOU with the BLM to be guardians of these sacred sites that begin in Spirit Mountain (North of Laughlin, NV) and are centered in the Palo Verde/Parker Valleys, down to the Gulf of California (South). These sites include the world famous Blythe Giant Intaglios, Kokopilli, Cicimitl, El Tosco, and Bouse Fisherman Geoglyphs as well as over 300 other geoglyphs (Intaglios), thousands of petroglyphs, hundreds of pictographs and mountain images.

The government fast-track stimulus money programs have been a complete failure as demonstrated by the Solyndra Companies disaster. It is ridiculous to continue spending more government money to promote these projects. As we have found out, even birds that fly over these solar panels die because of the thousand degree heat that they create. In addition, natural habitat, wildlife and pristine desert environment will also be greatly affected.

In a recent article regarding the Jenko Solar Project in China, even the Chinese are protesting against the solar panel projects in their country because they have not only contaminated water but also the climate change has ruined their agriculture industry. Apparently not even China is benefitting from these thousands of solar panel projects. The Jenko Solar Project is an excellent example of why we do not need these projects near agricultural land nor the Colorado River.

We do not oppose to solar panels, we feel that they should be placed in areas that have already been disturbed as well as placing them on roof-tops and in urban areas where energy is mostly need (warehouses, supermarkets, apartments complexes, abandoned air bases, and along the current electrical transmission lines). This will exclude the need for transmission lines which has now presented major terrorist threats like the blackout that occurred on September 8, 2011 in Mexico, Yuma, Imperial, San Diego and Riverside Counties.

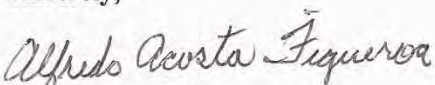
In order to amend the failing fast-track stimulus money solar programs concerning sacred sites, on January 17, 2012, the Colorado River, Eastern Riverside County Tribes and members of our organization met at the Agua Caliente Casino Conference Center in Palm Springs, California with the BLM and the Department of Interior representatives. This meeting was to discuss the sacredness of these areas and the vast destruction that has already taken place within the Blythe and Genesis Solar Power Project sites. Construction within the Genesis Solar Project site was stopped last month because the company came upon hundreds of Indigenous artifacts that were part of the old villages that formed part of the Coco-Maricopa East/West Trail (that traverses through the north end of the Ford Dry Lake). We currently do not have the final conclusion to this meeting by the BLM, but it is pending.

Our organization had submitted our comments concerning the sacredness of the Genesis Solar project and the Cultural Resource Docket # 09-AFC-8 of June 6, 2010 shows that the California Energy Commission own analysis estimates that more than 800 sites within the I-10 Corridor and 17,000 sites within the Southern California Desert Region, will potentially be destroyed.

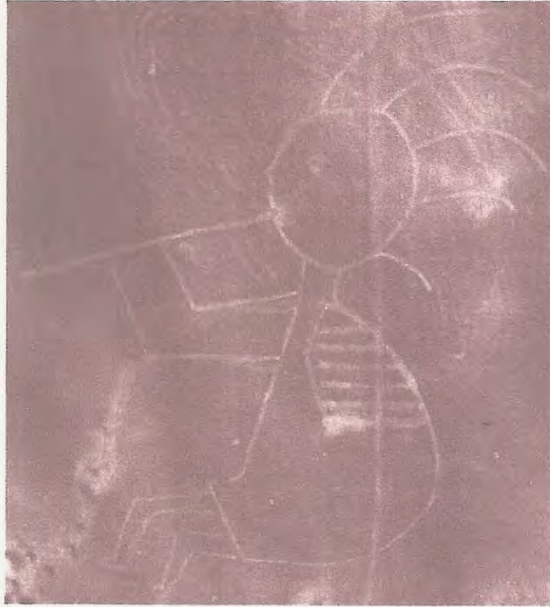
For all these reasons, we are opposing to solar panel projects that are proposed to be place on sacred sites, pristine desert environment, especially in Eastern Riverside & San Bernardino Counties in California and the Mojave, La Paz and Yuma Counties in Arizona.

We are attaching some pictures of the destruction that took place on June 17, 2011 at the groundbreaking ceremony of the Solar Millennium project site (located 10-miles west of Blythe, California). During this event Governor Jerry Brown, Secretary Ken Salazar and Assemblyman Manuel Perez were all present. Also included is a flyer of the current State, Federal, Mexico and United Nations laws that support our demands and why these projects should not be constructed in these sacred areas.

Sincerely,


Alfredo Acosta Figueroa

Please Help us Protect our Sacred Sites



Geoglyph image of the Creator in the form of Kokopilli (200ft long & 50ft wide) located within the Blythe Solar Power project site.



Geoglyph image of Cicimiltl "The Spirit of the Underworld" which takes human spirits to their final resting place. (10x10 yards)

The images of Kokopilli & Cicimiltl as well as numerous other Sacred Sites and trails are all located within the proposed Blythe Solar Project area that has already been approved by the California Energy Commission on September 15, 2010.

Kokopilli deciphered means Koko "Hurt" and Pilli "Our Lord" (in the Nahuatl language) and this is the Creator's image of Quetzalcoatl in the form of a half human and half insect. In this image he is leaving because he is hurt and it represents the end of the third Sun as shown in the Five Suns of the Aztec Sun Stone Calendar. The image of Kokopilli is found all over the southwest United States and Mexico.

Cicimiltl is one of the most important images of the Creator because it tells the story of the 4 places and directions that our spirits go according to how we lived and how we died on Mother Earth (This is all based in the Mexica Codex).

Included below are State, Federal, Mexico and United Nation laws that support our demands and why these projects should not be constructed in these Sacred areas:

- *Native American Sacred Places, March 6, 2003 (S.B. 18)
- *Native American Sacred Lands Act, June 11, 2003 (H.R. 2419)
- *The Sacred Land Protection Act, July 18, 2002 (H.R. 5155)
- *The Native American Sacred Sites Protection Act, February 22, 2002 (S.B. 1828)
- *Accommodations of Sacred Sites and Federal Land, Signed by President Bill Clinton on May 24, 1996 (Executive Order 13007)
- *Native American Graves Protection & Repatriation Act of 1990
- *Archeological Resource Protection Act of 1979
- *American Indian Religious Freedom Act, August 11, 1978
- *The Civil Right Act of 1968
- *Antiquities Act of 1906

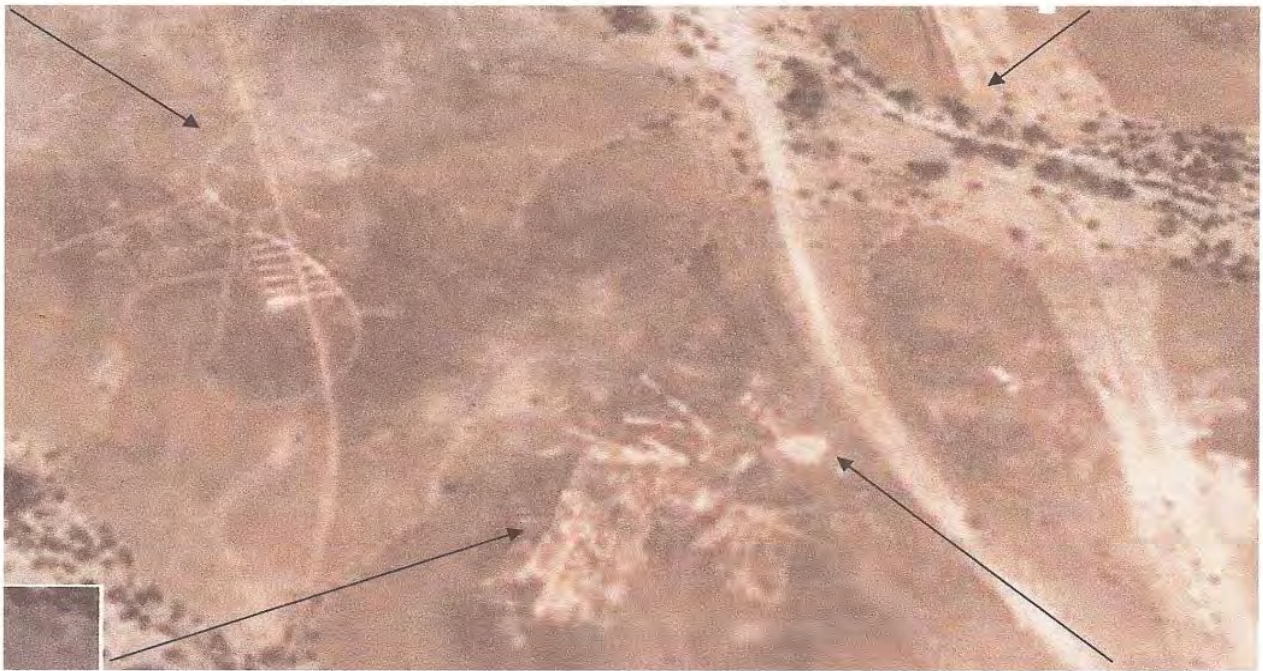
Please help our struggle by contacting Secretary of Interior Ken Salazar, President Barack Obama and your Congressman and Senators

La Cuna de Aztlan Sacred Sites Protection Circle
Patricia Piñon, President & Alfredo Figueroa, Monitor & Historian
(760) 219-2834 or (760) 922-6422
lacunadeaztlan@aol.com

Kokopilli Geoglyph

Before 2010

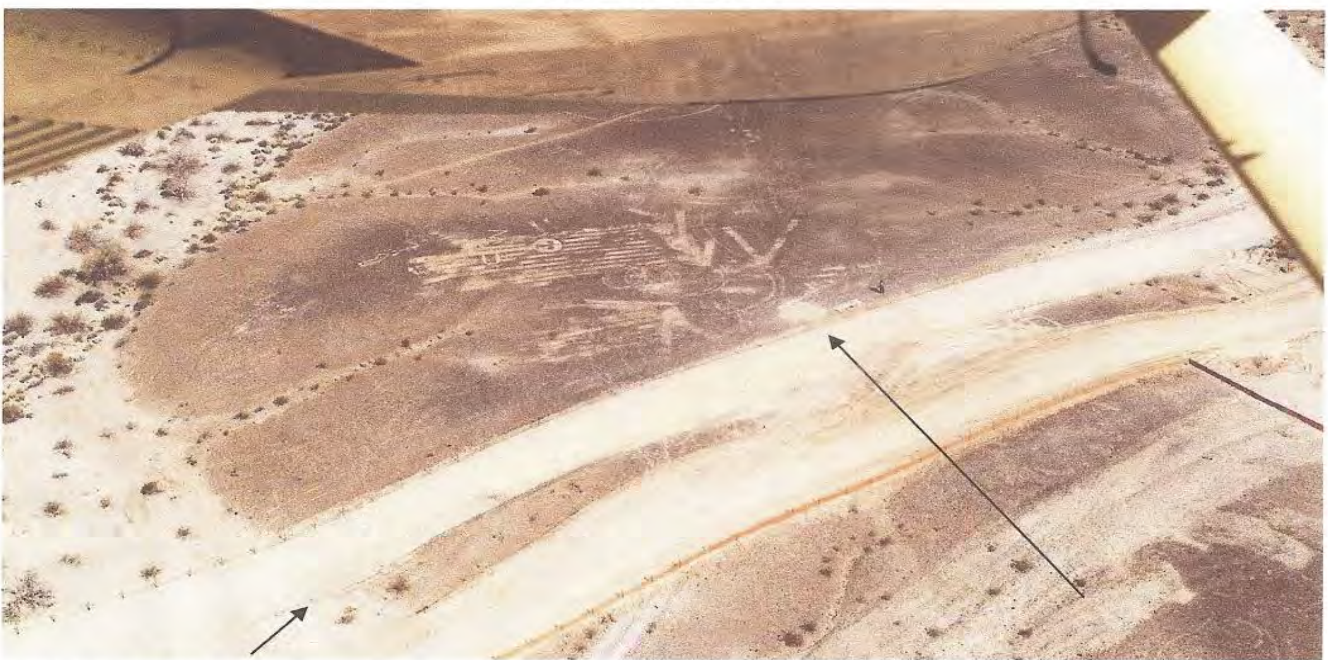
True North Geoglyph



Cicimitl Group

Sun Geoglyph

After 2010



150ft wide x 5-miles long road

Destroyed Sun Geoglyph

These are aerial photographs of the geoglyph images of Kokopilli (Kokopelli) and Cicimitl

Thank you for your comment

The comment tracking number that has been assigned to your comment is SEDDSupp20051.

Comment Date: January 24, 2012 15:37:15PM

Supplement to the Draft Solar PEIS

Comment ID: SEDDSupp20051

First Name: [Withheld by requestor]

Middle Initial: [Withheld by requestor]

Last Name: [Withheld by requestor]

Organization: US Citizen

Address: [Withheld by requestor]

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Address 3:

City: [Withheld by requestor]

State: [Withheld by requestor]

Zip: [Withheld by requestor]

Country: [Withheld by requestor]

Privacy Preference: Withhold name and address from public record

Attachment:

Comment Submitted:

Please adopt preferred BLM zones

Thank you for your comment, Joe Orawczyk.

The comment tracking number that has been assigned to your comment is SEDDSupp20052.

Comment Date: January 24, 2012 16:07:31PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDSupp20052

First Name: Joe
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Last Name: Orawczyk
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State: CA
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Country: USA
Privacy Preference: Don't withhold name or address from public record
Attachment:

Comment Submitted:

I want rooftop PV to become as ubiquitous as the microwave oven and I support the concept of the backyard mini-wind-turbine for the following reasons:

- ? local renewable power generation uses less water and land resources than remote solar does;
- ? rooftop solar and backyard wind turbines suffer less loss of energy from point of source to consumer than remote solar and wind power generator do;
- ? distributed renewable power generation will create more jobs than concentrated remote projects can, which will increase state and federal tax revenues as well as improve the relations between the voters and politicians in office;
- ? distributed renewable power generation reduces the risk of terrorist attack to our nation as the concentrated remote solar and wind make fine target during the heat of summer.

On this last point, consider how easy it would be for a terrorist to fire a .50 caliber round through the GE turbines inside the wind turbines or through the steam generators atop a power tower in a field of heliostats. Or a compression impact car bomb parked adjacent to those heliostats or trough mirrors. What a fine target in the middle of August.

Accordingly, I demand the BLM offer and analyze a distributed generation alternative to remote projects on public lands.

Thank you for your comment, Lorinda Wichman.

The comment tracking number that has been assigned to your comment is SEDDSupp20053.

Comment Date: January 24, 2012 18:14:50PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDSupp20053

First Name: Lorinda
Middle Initial: A
Last Name: Wichman
Organization: Board of County Commissioners, Nye County, Nevada
Address: Pahrump Office
Address 2: 2100 East Walt Williams Drive
Address 3:
City: Pahrump
State: NV
Zip: 89048
Country: USA
Privacy Preference: Don't withhold name or address from public record
Attachment: County Approved Comments - Supplement.pdf

Comment Submitted:

The original comments have been mailed. We are also submitting them electronically to be sure they are received prior to the deadline for comments.



**Board of County Commissioners
Nye County
Pahrump, Nevada**

Pahrump Office
2100 E. Walt Williams Drive
Pahrump, NV 89048
Phone (775) 751-7075
Fax (775) 751-7093

January 17, 2012

Solar Energy Draft PEIS
Argonne National Laboratory
9700 S. Cass Avenue
EVS/240
Argonne, Illinois 60439

Nye County respectfully submits these comments on the Solar Energy Draft Programmatic Environmental Impact Statement.

Nye County actively facilitates development of its solar resources through (1) an MOU with all four BLM District Offices, (2) by committing County resources (staff and funding) for coordination and communication with developers and local, state, and federal entities, (3) an MOU with its sister counties Inyo (California) and Esmeralda (Nevada), and (4) through the implementation of a Developer Agreement with each renewable energy developer within the County. These activities and our current planning documents for Nye County have incorporated local information and the Federal agencies should have coordinated this document with local plans under Federal Law.

The County is gravely concerned the PEIS and Supplement will undermine and even halt solar energy development in Nye County and the southwestern region at a time when development of solar resources is a priority National and States public policy. At a time of widespread high unemployment and risk to our national security due to dependence upon foreign oil, Nye County asks if the additional regulatory burden imposed by the Solar PEIS and Supplement is wise and appropriate.

We appeal to the Bureau of Land Management to consider our concerns summarized below.

- The Solar Energy Zones (SEZs) in Nevada as identified in the PEIS area based on state by state evaluations rather than regional relationships and do not match competitive resource energy zones identified by State organizations. Consequently, the PEIS SEZs do not take into account federal, state and local plans and initiatives, such as:
 - a. Nevada Governor's New Energy Industry Task Force
 - b. Renewable Energy Transmission Access Advisory Committee (RETAAC);
 - c. Nevada Energy Assistance Corporation (NEAC) Renewable Energy Corridors,
 - d. Valley Electric Association's plans to join the California Independent System Operator (CAISO) effective January, 2013;
 - e. NV Energy Renewable Transmission Initiative (RTI); and

- f. EPA funded Five County (Nye, Esmeralda, Lincoln, and White Pine in Nevada, and Inyo in California) Brownfields Coalition to identify potential renewable energy sites and associated transmission routes on previously disturbed lands.
 - g. Title 7 of the Nye County Code of Ordinances which govern Public Lands within Nye County and our interactions with Federal agencies.
 - h. The Nye County Comprehensive Master Plan of 2011 which identified areas of best solar suitability.
- The original Amargosa Valley SEZ was not a prime location, indicated by subsequent reduction in size and the additional studies called for in the Supplement. Nye County believes a reduction in SEZ size should be offset by identification of an alternative SEZ in the same county. (Note: alternative SEZ sites suggested and preferred by Esmeralda County were not included or addressed in either the Draft Solar PEIS or the Supplement.) If the SEZ Alternative must be adopted by BLM, Nye County has encouraged Nevada to:
 - a. Actively seek the identification of new SEZs through a stakeholder process, much as California and Arizona have done;
 - b. Require new SEZs be identified in conjunction with local counties' planning; and
 - c. Require any currently identified disposal areas be considered equivalent to SEZs since they have already been evaluated for disposal.
- Nevada is 87% federal land and Nye County is 98% federally controlled land. If the SEZ Alternative is adopted, it is imperative for the economic viability of the County that an efficient and effective process of identification of suitable solar sites be implemented by the BLM. Review and revision of BLM Land Use/Resource Management Plans historically has taken from one and a half to seven years. Requiring new or expanded SEZs to go through the RMP process adds an additional layer to the BLM process for new development and may render development unfeasible.
- Existing solar Right of Way applications were grandfathered under the PEIS. However, if projects in those ROWs do not develop, there is no provision in the Alternative for designating those previously studied areas as SEZs or retaining them under the grandfather designation. Requiring lands having been selected through the existing right of way process to go through a variance process in order to be reselected as a SEZ will:
 - a. Unnecessarily delay and therefore, discourage viable solar development;
 - b. Require additional costs on the part of the applicant, making the resource less competitive; and
 - c. Create redundant work for the BLM.
- The additional regulatory requirements imposed by the proposed variance process for lands not in a SEZ or Exclusion Zone will add cost and uncertainty to the development process. Nye County questions who will fund the additional studies and public meetings?
 - a. BLM from its budget?

- b. The State or County requesting a new or revised SEZ or change to an RMP? Local government already must pay for requesting changes to a RMP. Additional costs to local government when they request additional or revised SEZs is equivalent to an unfunded mandate.
 - c. The proponent/developer? Will the additional cost make the development of the project unfeasible? Will this cost be offset by some benefit to the proponent?
 - i. Will the additional studies be included in subsequent NEPA work if the project is approved by BLM?
 - ii. Will additional, more intensive studies be required after BLM approval of the project?
- Nevada law makes the State Engineer the final arbiter of water issues, and the Department of Energy has recognized this. Through changes in the NEPA process under the Alternative, the BLM and other Department of the Interior agencies are inserting themselves in the control of water within the state. This is a violation of state's rights and invites the possibility of lawsuits.
 - Nye County believes the No Action Alternative is preferable to a plan that adds redundant regulatory requirements and increases barriers to solar development rather than solving them. Nye County recognizes that while slow, the current ROW process is working successfully.

A number of Nye County solar developers have begun looking for projects sites on private land due to the uncertainty and costliness of the proposed PEIS SEZ Alternative. For Nye County, this means solar development will go elsewhere at a time when the local community has firmly embraced the potential for job creation of this industry.

Thank you for your consideration.

Sincerely,



For Lorinda A. Wichman,
Chairman

/

**Standard Review Form for
Draft Solar Energy Development PEIS (Issued December 2010)**

Reviewer's Name: Richard Nelson & Erika Balderson **Reviewer's Organization:** Nye County, Nevada

Reviewer's email address: Richard@becnv.com, Erika@becnv.com **Reviewer's Telephone numbers:** 702-304-9830

Primary Disciplinary Area (e.g., ecology, land use planning, regulatory oversight): Regulatory Oversight

Section(s) or Chapter(s) Reviewed: All

EIS Section	Page/Line	Comment/Suggested Revision	Action (for use by ANL)
1.3 BLM's Purpose and Need	1-3/34	Should be changed to read: "... on public lands with some of the highest solar insolation levels in the United States and to ensure ..." The draft Solar PEIS and its Supplement tend to make it appear that solar development can take place anywhere in the six state region. It is important to note the high interest in utility scale solar development is primarily (at least in Nevada) in areas with high levels of solar insolation (7.5 to 8 kWh/square meter/day) with less than 3% change in elevation. Most public lands within the six state region do not meet these requirements and should be indicated as such.	
1.1 Overview	1-1/20-22	"Because of its programmatic nature, the Supplement analyzes environmental effects over a broad geographic and time horizon..." is incorrect as the Supplement is analyzing conditions in a snapshot in time using current planning conditions and energy goals, which could change.	
1.3 BLM's Purpose and Need	1-4/17	"Optimizing existing transmission infrastructure and corridors;" Does this mean the Department of Energy designated Section 368 Corridors and the BLM corridors will be aligned? How do BLM and DOE intend to approach potential development of DOE corridors	

			that cross undisturbed lands and could impact currently unimpeded viewsheds?	
1.4 BLM Decisions to be Made	1-5/23-27		If policy components are only provided in the Record of Decision, the public will not have an opportunity to provide input. The Record of Decision should not include new information that the public did not have an opportunity to review.	
1.6 Status of Reasonably Foreseeable Development Scenario	1-8/7		A table referenced in the text should be located in close vicinity to the text, not in another chapter. Recreate Table 2.3-1 in this section if it is going to be referenced.	
1.8.2 Competitive Process	1-15/18-23		Bonus bid competitive process or other competitive procedures – the bid process will add to the cost of development. What process will be implemented if no bids are received?	
2.2.1.2	2-14/7-9		If the plan to implement the adaptive management and monitoring strategy is included in the Final Solar PEIS, there will be no prior comment period. The plan should be subject to public comment before the release of the Final Solar PEIS if it is to follow the spirit and intent of NEPA. Will there be a specific comment period for the plan?	
2.2.1.3	2-14/23-24		The final proposed list of programmatic design features should be made available for public and industry review before being published in the Final Solar PEIS, where comments will not be considered.	
2.2.2.2 Proposed Solar Energy Zones	2-15/20-21		“...where there is good potential for connecting new electricity-generation plants to the transmission distribution system...” Current planning efforts for new and upgrading transmission distribution systems should be taken into account, otherwise ideal SEZ areas will be overlooked for potentially less viable areas, slowing and increasing the cost of development. If current planning efforts for new transmission distribution were taken into account by the BLM, it should be stated.	

2.2.2.2 Proposed Solar Energy Zones	2-18/20- 21	<p>If the BLM is going to “prioritize the collection of additional data and analysis in those SEZs that are most likely to be developed in the near future,” a description of how the SEZs will be prioritized should be prepared, including the process and criteria used for prioritization. If the BLM selection criteria do not match commercial requirements, development will be delayed and additional data collection and analysis will be required. The prioritization criteria should be prepared and a public comment period allowed before the criteria are placed in the Final Solar PEIS.</p>	
2.2.2.2.6	2-30/8-9	<p>“The BLM has initiated efforts to consider identifying new SEZs in these states.” Suggest a regional identification process to be sure possible SEZs located in more than one state are fully considered. These may be overlooked in a state level review.</p>	
2.2.2.2.2	2-19/40- 43	<p>“Projects proposed in SEZs identified and analyzed through state or local land use planning efforts ...” Since the Supplement indicates in other paragraphs (e.g., Page 2-28, line 18) the BLM is already dealing with States, what will be required of local government to have their identified SEZs be recognized by BLM? If local government, Tribes, and/or industry identifies an area for a SEZ, who will be required to conduct and pay for the evaluation of the SEZ?</p>	
2.2.2.2.2 Environmental Review for Projects in SEZs	2-22/29- 31	<p>The statement, “...ROW authorization will require that the project POD include documentation of a completed BLM-approved cultural resources mitigation program...” seems to contradict the statement on page 2-5, line lines 12-13, “The POD must be of sufficient detail to provide the basic information necessary to begin the environmental analysis...” Clarification is needed as to whether environmental studies (which normally include cultural surveys) must be completed before a POD will be approved. Alternatively, the term “basic information” must be sufficiently well defined for parties to efficiently and effectively comply with the POD approval process.</p>	
2.2.2.2.3 Improve and	2-24/ 21	<p>Will regional mitigation plans include multiple states where there are similar environmental conditions, or will regional plans be strictly</p>	

Facilitate Mitigation		within each state? If the plans are restricted to single states, as is indicated by the state-by-state approach taken in the PEIS, the same environmental conditions in neighboring states may be treated differently and could lead to additional legal challenges over the equal treatment of projects by BLM.	
2.2.2.2.3 Incentives for Projects in SEZs	2-25/11-14	Adding new information, such as an evaluation of the transmission needs and impact for anticipated solar development in the Final Solar PEIS will eliminate the ability of industry and the public to properly comment on the information.	
2.2.2.2.3	2-25/19-21	If BLM <u>will</u> offer incentives to developers to build transmission, those incentives should be listed and should be subject to industry and public comment.	
2.2.2.2.3	2-25/23	Will BLM coordinate their transmission planning existing transmission planning processes like those conducted by Western Electricity Coordination Council (WECC) and its subregional planning groups, the California Transmission Planning Group (CTPG), the California Independent System Operator (CAISO) and other planning agencies? If so, this coordination process should be clearly stated and comply with Federal Energy Regulatory Commission (FERC), North American Electric Reliability Corporation (NERC), and other relevant regulatory requirements.	
2.2.2.2.3	2-25/30	Will BLM commit staff to actively establish and support the operation of the cooperative agreements, Memoranda of Understanding and/or Agreement? Without sufficient, active support, implementation and operation of the agreements for their intended purposes is unlikely and the opportunity for their usefulness will be lost. The commitment of sufficient agency resources (initial and ongoing) should be explicitly stated.	
2.2.2.2.3	2-26/17-37	The use of the term "may" does not commit BLM to an action, and the statements imply operators will have to be enticed to use the SEZs. It would also imply the variance process is intended to punish developers for preferring alternative sites that may be more competitive (and therefore feasible) rather than using a SEZ.	

2.2.2.2.3	2-26/32	Will BLM issue specific guidance for bonding requirement restructuring so all BLM offices use the same criteria? The use of the term “may” does not assure this will happen. What circumstances will be required to be met for this to be done?	
2.2.2.2.5	2-28/18-21	“The BLM has already initiated efforts to identify new SEZs in the states ...” Will there be any requirement for regional coordination and development? Regional coordination is particularly important where transmission development/upgrading issues are concerned in connection with renewable energy development and/or where local government planning is involved.	
2.2.2.2.5	2-28/36-39	How will BLM assess the need for new or expanded SEZs a minimum of every five years? Will BLM require changes to BLM processes such as Resource Management Plans and Land Use Plans in order to do this? Paragraphs 2.2.2.2.6 and 2.3.1 indicate possible SEZs must be included in those plans for them to be considered. This process should be clearly stated.	
Figure 2.2-1	2-29	Suggest panels 3 and 4 be reversed. It is preferable to identify and use previously disturbed sites, whenever possible, rather than disturb new areas. Once the previously disturbed sites have been identified, the environmental screening criteria should be applied.	
2.2.2.2.6 Ongoing Efforts to Analyze New SEZs	2-30/24-26	Clarification should be added to define which entity will be required to conduct (pay for) the NEPA analysis for SEZs “identified and analyzed through state or local land use planning efforts...” particularly since Appendix C (page C-1, lines 20-22) states, “Note that additional data and analysis will help facilitate development in SEZs but is not required to identify an area as an SEZ...”	
2.2.2.3.1 Variance Process	2-34/17-19	The statement “sufficient detail (as determined by the BLM)” should be explained in sufficient detail to allow consistent application by BLM districts and field offices, as well as state agencies, and understanding by developers.	
2.2.2.3.1	2-35/1-2	SEZs identified “through a related process such as the California DRECP or Arizona RDEP ” ... “may be given status and processed as though it were in an SEZ.” BLM should clarify if this would also	

		apply to areas identified through Local or Tribal processes.	
2.2.2.3.1	2-35/ 18 - to 2-37/18	Recommend Option 2 be implemented in order to provide a uniform application. However, the requirement to survey an area 3-4 times larger than the proposed project area (page 2-37, lines 6-7) should be removed. If the project area is found to be unsuitable, additional land area should be surveyed to a find suitable area. Needless surveying not only disturbs a larger area than is required, but also adds project costs that reduce the value of the resource and may make it uncompetitive.	
2.2.2.3.1	2-40/3-5	Why would pre-scoping public meetings be considered to be outside the NEPA process? These meetings appear to be scoping meetings since they define the scope of work needed to be done in the NEPA process.	
2.2.2.3.2	2-40/30- 36	Since many of the actions required for variance processing are required under NEPA processing, will BLM allow actions taken under variance processing to be incorporated in subsequent NEPA activities? This should be clearly stated.	
2.2.3	2-41	The Modified SEZ Program Alternative would effectively draw out the process of identifying new SEZs, since "all areas outside of identified SEZs would be identified as exclusion areas for utility-scale solar energy development." The exclusion area designation would make it difficult for BLM to redesignate an area for priority solar development, and would appear to go against Federal Energy Policies to encourage renewable energy development to reduce green house gases and our dependence upon foreign fuels.	
2.3	2-42/33	Minimizing potential negative environmental, social, and economic impacts of renewable energy development is normally considered in the area surrounding the development. Current evaluation does not take into account the positive effects on areas that receive the energy resulting from that development, such as the lowering of emissions from fossil-fueled power plants. As such, the benefits of the development are understated in relation to possible detrimental aspects.	

Table 2.3-2	2-54	<p>Water Resources, Paragraph 1 – The statement “... such projects would be limited primarily to locations with ample groundwater supplies where water rights and the approval of water authorities could be obtained.” appears to imply BLM intends to assume the responsibilities of state water regulating agencies. At least within Nevada, the State Engineer decides water rights questions in ALL areas of the state. If water rights can be obtained from the State Engineer in any area, BLM actions to limit development based upon water would appear to violate the rights of the state contrary to current federal and state agreements. The statement should either be rewritten to comply with current legal requirements, or it should be eliminated.</p>	
Table 2.3-2	2-54	<p>Water Resources, Paragraph 4 – The statement should be rewritten to indicate the design features to reduce many of these impacts are already required in most legal jurisdictions and particularly in Nevada. BLM cannot operate autonomously. BLM is required to include and consider state and local requirements.</p>	
Table 2.3-2	2-56	<p>Wildlife and Aquatic Biota, Paragraph 1, considers the immediate impact of possible solar energy development; however, it does not consider the longer term and potentially more damaging effects of greenhouse gases resulting from continued use of fossil fuel power plants upon the atmosphere and climate. A fair analysis must include positive impacts to the environment relevant to deployment of a clean energy source that reduces the need for traditional fossil fuel generation.</p>	
Table 2.3-2	2-57	<p>Special Status Species, Paragraph 2, states critical habitat, ACECs, and “other areas where the BLM has made a commitment to protect sensitive species would not be excluded.” The paragraph should be rewritten, since current ROW processes already exclude development in those areas and these areas may be further enlarged based upon state and local governmental agency requests and public scoping meeting results.</p>	
Table 2.3-2	2-60	<p>Paleontological Resources, Paragraph 1 – The statement “... impacts</p>	

			would be minimized due to the required variance process.” should be deleted. The current process already considers the impacts, so the variance process will have little impact on this consideration.	
Table 2.3-2	2-61		Cultural Resources and Native American Concerns, Paragraph 1. The statement “... impacts would be minimized due to the required variance process.” should be deleted. The current process already considers the impacts, so the variance process will have little impact on this consideration. Additionally, the statement “...except there would be no explicit exclusions to avoid known sensitive cultural resources.” should be deleted. BLM policy already includes this aspect and the statement implies BLM is not, in fact, currently considering known sensitive cultural resources.	
Table 2.3-2	2-61		Transportation, Paragraph 1 – the comment “... impacts would be minimized due to the required variance process.” should be deleted. These impacts are already addressed in the current process.	
2.3.1 Impacts of the Modified Solar Energy Development Program Alternative	2-62/5-7		Change “... certain categories of land that are known or believed to be unsuitable ...” to read “... certain categories of land that are known to be unsuitable ...” The use of the term “believed to be” is subjective and easily challenged. More importantly, the rapid technological changes taking place make the term “believed to be unsuitable” is questionable even in the short term.	
2.3.1	2- 62/14-25		The statement “... identified as SEZs where the agency would prioritize solar energy and associated transmission infrastructure development.” should be revised to say this will be done in coordination with state and regional transmission planning entities.	
2.3.1	2-62/30-32		Clarification needed. Will BLM require the frequent review/revision of land use plans to meet this requirement? Unless a specific time requirement is provided for the update/revision of land use plans, the modified program alternative will only delay the development or modification of new and existing SEZs.	
2.3.1.1	2-63/34-35		The wording “... solar energy development only where such development may be expected to encounter fewer potential resource conflicts.” should be changed to “solar energy development where	

		potential resource conflicts are offset by potential economic and infrastructure gains.” Siting projects where there are few potential resource conflicts tends to locate them where they are of marginal economic value and incentives must be applied in order to try to develop them. For BLM to effectively and responsibly encourage renewable energy development, it must weigh potential conflicts against potential economic and infrastructure gains without requiring the use (and associated cost) of short and/or long term incentives from BLM and/or other governmental agencies.	
2.3.1.1	2-64/9	Change “... and address the majority of operational ...” to read “... and address the majority of currently identified operational ...”	
2.3.1.1	2-64/17-19	The statement should be deleted or rewritten. It contradicts earlier statements that the identification of new SEZs would require changes be implemented in land use and Resource Management Plans. It also implies a “one size fits all” approach to utility planning and development that has been proven to not work even in centrally controlled economies.	
2.3.1.1	2-64/21-26	Change line 25 to read “... would reduce the cost to the government (if no incentives are required), developers ...”	
2.3.1.2 Minimize Environmental Impacts	2-64/42 - 43	Change to read “... authorization policies continue the currently established requirements for coordination ...” The current statement implies BLM has not done so and has failed to meet current NEPA requirements.	
2.3.1.2	2-65/8-15	Rewrite or delete the statement. It indicates BLM has failed to meet its current NEPA requirements in dealing with renewable energy development. The proposed variance policy appears to differ from the current policy only in requiring more survey work and public meetings prior to initiation of the formal NEPA process –imposing additional cost and time for both BLM and the proponent.	
2.3.1.2	2-65/8	Change to read: “The proposed ROW exclusions would continue to avoid the impacts ...” The current statement implies BLM has failed to do so under the current process.	
2.3.1.2	2-65/17-	The bullet point should be deleted as misleading. It indicates BLM is	

26	2.3.1.2	taking credit for limiting development to areas industry has already identified as areas of greatest interest and potential. It is also continuing the current process practiced by BLM (at least in Nevada) and is not a change.	
2-65/29	2.3.1.2	Change to read "... Solar PEIS, address the currently identified array ..." The use of the term "full array" indicates no other potential impacts will be identified – even if new technology is developed with potentially unforeseen impacts.	
2-65/36-40.	2.3.1.2	Delete the paragraph. The proposed process requires industry and BLM to informally accomplish much of the ROW process prior to beginning the formal process. In doing so, its primary accomplishment appears to be the lengthening of the time and expense required for industry (and BLM) to complete the process.	
2-65/42-44	2.3.1.2	Rewrite or delete the paragraph. It indicates BLM has not provided opportunities to site projects on previously disturbed lands. If that is true, it means BLM has failed to meet its congressionally directed mandate.	
2-66/10-19	2.3.1.2	Change to read "Forthcoming adaptive management and monitoring strategies will formalize existing procedures to ensure ..." and (line 13) "... developers would continue to be required to develop ..." The current paragraph indicates BLM has failed to do any of the enumerated tasks under current BLM policies – which, may be true in some districts, but is definitely not true in all districts.	
2-66/25	2.3.1.2	Change to read: "The program would continue to facilitate solar energy development on BLM-administered lands and would continue to ensure development would be subjected to rigorous environmental review, including a thorough public involvement process." The current statements indicate BLM has failed to do so under the current process.	
2-67	2.3.1.2	Reword or delete footnote 5 and/or properly complete PEIS actions for the identified SEZs. The footnote is an admission that (1) the PEIS was not properly conducted (as would be required for any ROW applicant); is an admission the SEZs may require more NEPA	

			work than is indicated elsewhere in this Supplement and PEIS; and (3) indicates industry may have to expend as much NEPA effort in an SEZ as they would elsewhere.	
2.3.2.2 Minimize Environmental Impacts	2-72/41		Change to read "...would address the full array of known potential impacts ..." The supplement has already indicated not all potential impacts have been fully identified.	
2.3.2.7 Meet Projected Demand for Solar Energy Development	2-75/22- 23		Change to read "...lands available within the SEZs may exceed the amount of land ..." It has already been said that not all land within an SEZ will be developable, based on the presence of ephemeral streams, etc., and is further noted in the paragraph beginning on line 35 of this page.	
Table 2.3-4	2-77		Facilitate near-term utility-scale development on public land, paragraph 2 – Considering the amount of federally controlled, public land compared to private land in western states such as Nevada (87% federal land), a development shift toward nonfederal lands is not a reasonable alternative. Therefore, the restriction limiting solar developers to existing SEZs unfairly restricts development in rural communities (e.g., Nye County).	
Table 2.3-4	2-78		Minimize potential social and economic impacts – prioritization of development in SEZs will have a direct, negative impact in rural areas such as Nye County. The County has a considerable amount of high priority land for solar development that is being removed from consideration under the PEIS and this Supplement. Implementation of the SEZ program will have an immediate, negative affect the number of jobs that could be available within the County from solar energy development and associated transmission development and ancillary services.	
Table 2.3-4	2-78		Provide flexibility to solar industry – for areas like Nye County, the PEIS will limit the flexibility to identify appropriate locations for utility-scale (and other) development. The County has tremendous solar potential that will be greatly limited by the PEIS SEZ program.	
Table 2.3-4	2-78		Optimize existing transmission infrastructure and corridors –	

		implementation of the PEIS SEZ program will greatly limit the opportunity to utilize existing or new transmission development since it will greatly reduce the area available for development. By effectively discouraging the upgrading or expansion of transmission infrastructure, BLM's PEIS policies will limit economic development in affected communities.	
Table 2.3-4	2-79	Meet projected demand for solar energy development as estimated by the RFDS – The PEIS has pointed out not all states will have sufficient land available to enable them to meet their RFDS requirements. Their ability to meet projected demand depends upon constructing/upgrading transmission lines to deliver the needed energy from out of state renewable resources. Generation and delivery from nearby states (e.g., Nevada to California) will be necessary to provide cost effective delivery with minimal line losses. Regional planning, rather than state by state planning, will be required to efficiently meet that need.	
2.4.2 National Historic Preservation Act	2-81/41	National and draft Solar PAs are mentioned with no description of what PA stands for. This should be spelled out in the sentence and in the Acronyms and Abbreviations.	
2.4.2	2-81/45 to 2-82/4	The draft Solar PA was sent to SHPOs, the ACHP, Indian Tribes, and interested parties such as the National Trust for Historic Preservation. Will it be sent to all stakeholders for comment or only to those already enumerated?	
3.2.4 Water Resources and Erosion Control	3-3	Over-appropriation or over-drafting of any groundwater basin is a consideration for everyone. However, state law and state-federal agreements must be acknowledged (e.g., by state law and state-federal agreements, the Nevada State Engineer is responsible for identifying water rights, over-appropriation/drafting of basins, not DOE or BLM). Failure to recognize and acknowledge this would be an abrogation of states' rights and federal agreements.	
3.2.10 Environmental	3-6/41	Add: "Where applicable, work with potentially affected low-income and minority communities to develop job training skills to enable	

Justice		community members to obtain good paying jobs and other positive results from renewable energy development.” Results from an action can be both positive and negative, and comments should reflect this.	
Appendix C	C-2/ Table C.1	A footnote should be added to explain the acreage differences given for the Revised Area To Be Carried Forward and the Revised Developable Area in the table is for Non-development acres within the Developable area, as stated in Figure C.4.1-2.	
C.4.1.1	C-147	If the size of the SEZ is reduced, Nye County should be consulted and consideration given to developing a SEZ in another area of the County as part of this PEIS. The arbitrary reduction of the SEZ due to potential ecological impacts adversely affects economic development within the County and should accordingly be considered.	
C.4.1.1	C-147/23	Only potentially adverse impacts are identified in this section. An unbiased, accurate description of the environmental impact of an action requires ALL impacts be described and discussed – including potential positive impacts or benefits of the action, activity, or development, in accordance with the spirit of NEPA.	
C.4.1.1	C-147/25- C-150/13	Potential impacts should be the basis for requiring further study to determine the probability of an effect, not for making decisions based on an undetermined potential.	
C.4.1.2 Summary of Comments Received	C-150/32- 33	The U.S. Fish and Wildlife Service recommended the SEZ be reconfigured to address potential impacts. Potential impacts should be the basis for further study, not for changing the configuration of the SEZ.	
C.4.1.2	C-150/34- 35	The Nevada Department of Wildlife recommended the portion of the Amargosa Valley SEZ north and east of highway 95 be removed, with no listed reason(s) for doing so. An explanation should be provided as to why the area should be removed.	
C.4.1.3 Changes to the SEZ	C-151/23- 26	Elimination of a floodplain from the SEZ would appear to be reasonable. However, elimination of an area to “mitigate many potential impacts” without documented study to determine the actual level of impact appears to indicate the elimination was based on	

		supposition rather than fact. Further study should be required to determine if those potential impacts warrant revising the SEZ.	
C.4.1.3	C-151/38-41	Nevada law and federal-state agreements identify the Nevada State Engineer as the final decision authority for water rights and water allocation within the state. Restrictions based upon the availability of water or water rights without the State Engineer's agreement would constitute a violation of states' rights. Changes to the SEZ for these reasons should be based upon consultation with the State Engineer to avoid possible legal actions at a later date.	
C.4.1.3	C-151/43-46	"Extensive potential impacts" without study to determine the actual probable level of impact should not be the basis for not accepting applications. Further study should be required before decisions are made, or the full rationale for those decisions should be provided. Decisions made without conducting required studies and/or providing the underlying rationale appear to be biased and/or arbitrary.	
C.4.1.3 Changes to SEZ	C-152/ Figure C.4.1-2	The BLM needs to specify if Non-development acres within an approved SEZ will be included in determining lease payments. It should also be explained as to why the Non-development acres were not designated exclusion zones.	
C.4.1.5 Additional Data Collection Recommended	C-153	It should be clarified who the responsible parties are for the additional data collection. Will the recommended data collection be done by the BLM as an incentive for SEZ development?	
C.4.1.5.2	C-153/18-19	If the original area of the SEZ was reviewed and found to not have wilderness characteristics, what is the rationale for re-evaluating the revised SEZ? A re-evaluation does not appear to be warranted since the SEZ area was reduced and no new land was included in it.	
C.4.1.5.5 Military and Civilian Aviation	C-153/33-44	Nye County strongly supports Nellis AFB and military training/operations. However, determination of which technology is appropriate should be based upon actual studies, not upon supposed potential impacts.	
C.4.1.5.8 Water	C-154/45	Add: "- Work with Nye County and the DOE Nevada National	

Resources		<p>Security Site to utilize information through their ground water monitoring wells and numerical groundwater models in the Amargosa Valley and adjacent basins.</p> <ul style="list-style-type: none"> - Coordinate the development of additional models and monitoring wells with both DOE and Nye County.” <p>Nye County has both a direct interest in and an existing, active scientific program for groundwater monitoring and modeling in the area and can provide valuable input to BLM and USGS-NV studies.</p>	
C.4.1.5.8	C-155/11	<p>Add: “- Coordinate information developed regarding modeling analyses, the use of DVRFS model, and potential impacts to groundwater relevant to Ash Meadows National Wildlife Reserve, Devils Hole, and Amargosa Valley.”</p> <p>Nye County has both a direct interest in, and an existing, active scientific program for groundwater monitoring and modeling in the area and can provide valuable input to BLM and USGS-NV studies.</p>	
C.4.1.5.8	C-155/12	<p>Add: “- Coordinate all activities, groundwater modeling analyses, and monitoring results with the Nevada State Engineer who is the final arbiter of water rights and issues in the state.</p>	
C.4.1.5.9 Ecological Resources	C-155/13	<p>The Right of Way applicant normally accomplishes the additional data-gathering actions described in this section during their NEPA work. If the described studies are accomplished under the PEIS, will the studies be sufficiently detailed that the developer will not have to conduct additional studies? If the developer will be required to do additional studies, it would appear to be more cost effective for both BLM and the developer if the developer did all of the studies in this section.</p>	
C.4.1.5.11	C159/9	<p>The Right of Way applicant normally accomplishes the additional data-gathering actions described in this section during their NEPA work. If the described studies are accomplished under the PEIS, will the studies be sufficiently detailed so the developer will not have to conduct additional studies? If the developer will be required to do additional studies, it would appear to be more cost effective for both BLM and the developer if the developer did all of the studies in this</p>	

C.4.1.5.13	C162/28	section. The Right of Way applicant normally accomplishes the additional data-gathering actions described in this section during their NEPA work. If the described studies are accomplished under the PEIS, will the studies be sufficiently detailed that the developer will not have to conduct additional studies? If the developer will be required to do additional studies, it would appear to be more cost effective for both BLM and the developer if the developer did all of the studies in this section.	
C.4.1.5.14	C-162/38	The Right of Way applicant normally accomplishes the additional data-gathering actions described in this section during their NEPA work. If the described studies are accomplished under the PEIS, will the studies be sufficiently detailed that the developer will not have to conduct additional studies? If the developer will be required to do additional studies, it would appear to be more cost effective for both BLM and the developer if the developer did all of the studies in this section.	
C.7.1.3.1	C-328/26-45	Consideration should also be given to development in rural areas that is restricted by limited transmission capacity and the cost of upgrading transmission lines. Upgraded or new transmission for SEZs will also allow other economic development. Additional development may change the required electrical load in the areas where insufficient available power previously limited opportunities. Currently projected load levels may not be accurate for these reasons and this must be taken into account. In addition, the reduction of solar (and other renewable energy) generation costs and energy intermittency may result in an increased use of renewable energy beyond the current RPS requirements – unless artificial limits are applied. Current Right of Way applications have already shown development will take place only if the market shows development to be economically feasible.	
C.7.1.3.1 Implementation	C-329 /34	Add: “Avoid the use of existing transmission lines of historical significance that might otherwise be eligible for upgrading, and/or	

		those which pass through environmentally sensitive areas where the cost of upgrading would exceed that of new transmission line construction.	
C.7.1.3.2 Transmission Analysis Methodology	C-330/26- 28	An additional consideration for potential spare capacity is capacity limited by contractual availability. The spare capacity is available only if the entity having contracted for that capacity is willing to allow it to be used – the amount of wheeling charges incurred will often determine if it is economically feasible for the generator to use it.	
C.3.7.2.2 Floodplain Determinations	C-340	BLM should specify the agency or entity responsible for completing and funding the additional analysis. For example, will the BLM update flood plain delineations on BLM managed lands, or will FEMA be expected to do so. The floodplain determinations could have a large impact on development timelines and agency funding requirements and ultimately economic feasibility of a project.	
C.7.2.3 Jurisdictional Waters Determinations	C-341/18- 29	Considering the current budgetary situation, what time frame will be required to obtain the jurisdictional decisions, and which agency(s) will be funding this? Will decisions be held up until the determinations are made? What effect will this have on developmental time lines? For development to occur, it is imperative this type of uncertainty be resolved.	
C.7.2.4 Significant Ephemeral Waters Determination	C-341/32- 44	The state of Nevada requires development be done in such a manner that stakeholders downstream of the development see little or no change in groundwater flows. Will that be sufficient to meet the requirements of this paragraph?	
C.7.2.5.1	C-342/16- 19	Will BLM fund the monitoring programs? This should not be an unfunded mandate levied upon state and local governmental agencies.	
C.7.2.6 Modification of Design Features	C-343/1-4	The level of required groundwater analyses should be based on the quantity of water used, not on the technology employed. This approach would apply the same criteria to all forms of development since the various technologies are undergoing changes in the amount	

		of and way resources are used.	
C.7.3 Visual Resource Design Features for Select SEZs	C-344/12-13	Suggest this be reworded to say “No vertical development over 100 ft (30.5 m), including transmission towers and other structures except where safety and/or ground disturbance considerations may dictate otherwise.” Limiting transmission lines to a maximum of 100 feet will necessitate more transmission poles/towers and increase the amount of land disturbance. In some areas, limiting the height of transmission lines may also incur a much greater safety issue for construction and maintenance personnel (e.g., crossing rivers and washes, etc.).	
Appendix D: Proposed Identification Protocol for New Solar Energy Zones	D-1/19-21	In earlier chapters, it was indicated new SEZs would have to be included in Resource Management and Land Use Plans, which are only updated periodically. Does the phrase “... undertaken at the state or field office level as an individual land use planning effort ...” mean a new or expanded SEZ that is not already shown in an existing Regional Management or Land Use Plan will be undertaken if requested by state or local government?	
Appendix D	D-1/24-26	The sentence implies new or expanded SEZs are primarily a governmental policy decision that takes into consideration the existing solar market conditions. When does future planning come into play? It was the sudden change in “existing solar market conditions” that lead to the development of the PEIS. If new or expanded SEZs are not considered and planned for in advance of the need, the BLM may delay development rather than facilitate it.	
D.1 Assess the Need for New SEZs	D-2/24-27	Local governments frequently have more to do with attracting and gaining new economic development in an area than does the state government, which is more concerned with establishing the overall conditions for that development. As such, local government should be included in the assessment of need at least as much as state-based scenarios that may not reflect the current situation due to the rapid pace of changes possible in progressive local areas. The need for maintaining current jobs and developing new ones is critical to local government officials and must be considered by BLM.	

D.2.4 Load Areas to be Served	D-4/6-10	<p>The term “adjacent state” may have more than one meaning when providing energy to another area. For example, the TransWest Express transmission project (partially owned by the Western Area Power Administration) will provide Wyoming wind energy to Las Vegas and California. In that sense, the transmission determines the market, not the generator location. A definition of how the term “adjacent state” is being applied should be added.</p>	
D.3.1 Program Exclusion Criteria	D-5/16	<p>Change “... certain categories of land that are known or believed to be unsuitable ...” to read “... certain categories of land that are known to be unsuitable ...” The use of the term “believed to be” is subjective and easily challenged. More importantly, the rapid technological changes taking place make the term “believed to be unsuitable” questionable even in the short term.</p>	
D.3.3 Additional Locally Relevant Screening Criteria	D-6/6-9	<p>Will public outreach meetings be held to discuss agency desires prior to the development of “agreements not to locate SEZs near specific units, based on an agency’s assessment of potential adverse impacts on those units”? Likewise, discussions with state and local governments should be conducted prior to the decision to eliminate an area from consideration for an SEZ. Considerations of jobs and economic or other development may affect state and local governments in a manner not experienced or considered by a federal agency.</p>	

To add addition boxes, press tab.

Thank you for your comment, Jack Caswell.

The comment tracking number that has been assigned to your comment is SEDDSupp20055.

Comment Date: January 25, 2012 15:55:32PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDSupp20055

First Name: Jack
Middle Initial: W
Last Name: Caswell
Organization: Bureau Veritas
Address: 180 Promenade Circle
Address 2:
Address 3:
City: Sacramento
State: CA
Zip: 95834
Country: USA
Privacy Preference: Don't withhold name or address from public record
Attachment:

Comment Submitted:

Please disregard the Draft Solar PEIS Comment SEDDSupp20054 and refer to the following comment.

It will be paramount that the BLM select a competent Independent Third Party construction inspection/plan review and environmental mitigation monitoring Delegate as early in the Right-of-Way (ROW) Permitting Review Process as possible. This should be accomplished no later than 6 months prior to the project's ground breaking activities. This will allow the Bureau of Land Management's Independent Third Party Delegate, the BLM and Project Owner and it's Development Team to hold pre-construction meetings in order to fully understand the construction impacts and the construction mitigation measures being imposed in the ROW permit to include the timing to satisfy those mitigation measures.

Thank you for your comment, Chuck Huckelberry.

The comment tracking number that has been assigned to your comment is SEDDSupp20056.

Comment Date: January 25, 2012 16:00:24PM

Supplement to the Draft Solar PEIS

Comment ID: SEDDSupp20056

First Name: Chuck

Middle Initial: H

Last Name: Huckelberry

Organization: Pima County

Address: 130 W. Congress, 10th Floor

Address 2:

Address 3:

City: Tucson

State: AZ

Zip: 85701

Country: USA

Privacy Preference: Don't withhold name or address from public record

Attachment: solar-BLM energy supplemental draft programmatic EIS 1_12.pdf

Comment Submitted:



COUNTY ADMINISTRATOR'S OFFICE

PIMA COUNTY GOVERNMENTAL CENTER
130 W. CONGRESS, TUCSON, AZ 85701-1317
(520) 740-8661 FAX (520) 740-8171

C.H. HUCKELBERRY
County Administrator

January 25, 2012

Solar Energy Draft Programmatic EIS
Argonne National Laboratory
9700 South Cass Avenue – EVS/240
Argonne, Illinois 60439

Re: Comments on the Bureau of Land Management (BLM) and US Department of Energy Supplement to the Draft Programmatic Environmental Impact Statement (PEIS) for Solar Energy Development in Six Southwestern States

To Whom It May Concern:

I applaud the Bureau of Land Management's (BLM) and Department of Energy's responsiveness to comments on the Draft PEIS with the new information and modifications that have been incorporated into this Supplement. You have increased the public's ability to assess the ramifications of the proposed Solar Energy Development, both in intent and implementation. Such supplements, in my opinion, are not used frequently enough.

Similarly, we support BLM's renewed focus on the Solar Energy Zones (SEZ), as the County supports this alternative. The SEZ alternative identifies areas of minimal resource conflict and highest potential for solar energy production, while concentrating impacts within a zone, as opposed to the Solar Development Program alternative, where development would create impacts throughout a very dispersed land base.

Enclosed please find the County's comments on specific aspects of the Draft PEIS and the Supplement. I would also like to restate the comments Pima County previously provided on the Draft PEIS (attached) wherein we expressed concerns for certain BLM lands within Pima County (see Attachment 4). As the BLM properties in Pima County have not changed, our concerns remain the same. While the Supplement's Preferred Alternative makes it clear that utility scale projects on these lands will be subject to project-specific National Environmental Policy Act (NEPA) analysis where impacts have not been

To Whom It May Concern

**Re: Comments on the Bureau of Land Management (BLM) and US Department of Energy
Supplement to the Draft Programmatic Environmental Impact Statement (PEIS) for
Solar Energy Development in Six Southwestern States**

January 25, 2012

Page 2

addressed by the Draft PEIS, this commitment does not facilitate compliance with local regulatory requirements which better reflect local issues and preferred solutions to those issues, while the Supplement specifically states that BLM will seek input from and coordination with local government entities and that projects will "be required to comply with NEPA and all other applicable laws, regulations, and policies at the applicant's expense", it does not reach the level of surety that local authorities, such as Pima County, are seeking. I would, therefore, respectfully request that BLM's issuance of the Notice to Proceed, as discussed on Page 2-9, be modified to (1) mandate that the holder be subject to and must comply with all applicable regulatory requirements of the local jurisdiction; and (2) that issuance of the Notice to Proceed could be delayed pending completion of a requirement(s) imposed by another federal, state, and/or local entity.

There is also a subset of BLM lands within Pima County included in the Preferred Alternative that should be excluded from the potential of utility scale solar development. The Draft PEIS identifies these properties as Nos. 15, 16, 25, and 26. Pima County currently holds the grazing leases on all four of these properties; all are inholdings within large areas controlled and managed by Pima County for purposes of open space preservation and natural resources conservation (see Attachment 3). These areas were secured with monies from a 2004 voter-approved \$175 million open space bond fund. Development of these four properties, in particular, would fragment the resources of the surrounding open space lands controlled by Pima County as well as negatively impact the public's investment in local conservation initiatives. We request that the Final PEIS Preferred Alternative exclude these four aforementioned properties.

We are encouraged that the Solar Energy Development program will incorporate the Arizona Restoration Design Energy Project (RDEP) wherein local undertakings such as Pima County's and the City of Tucson's solar energy development efforts can be included. We look forward to the release of the RDEP Draft PEIS.

Sincerely,



C.H. Huckelberry
County Administrator

CHH/dr

To Whom It May Concern

**Re: Comments on the Bureau of Land Management (BLM) and US Department of Energy
Supplement to the Draft Programmatic Environmental Impact Statement (PEIS) for
Solar Energy Development in Six Southwestern States**

January 25, 2012

Page 3

Attachment

c: The Honorable Chairman and Members, Pima County Board of Supervisors
 John Bernal, Deputy County Administrator for Public Works
 Linda Mayro, Director, Sustainability and Conservation Office
 Robin Johnson, Sustainability Manager, Sustainability and Conservation Office
 Sherry Ruther, Environmental Planning Manager, Sustainability and Conservation
 Office
 Betty Stamper, Central Permits Supervisor, Development Services
 Diana Durazo, Special Staff Assistant to the County Administrator



COUNTY ADMINISTRATOR'S OFFICE

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C.H. HUCKELBERRY
County Administrator

May 2, 2011

Solar Energy DRAFT Programmatic EIS
Argonne National Laboratory
9700 South Cass Avenue – EVS/240
Argonne, Illinois 60439

**Re: Scoping Comments on BLM and Department of Energy Solar Energy
Development Draft Programmatic EIS**

To Whom It May Concern:

The Bureau of Land Management's (BLM) efforts in furthering solar energy development and improving current renewable energy policies are important steps forward in our collective objective to develop and use more renewable energy resources. For our part, Pima County has consistently supported renewable energy projects, but not at the expense of unnecessary fragmentation of our fragile desert resources or undesirable impacts to community residents. In our review of the BLM and Department of Energy's Solar Energy Development Draft Programmatic EIS, Pima County is concerned about the proposed siting of solar development within Pima County and the process undertaken so that development of renewable energy resources undergo a comprehensive study of the environment and should not compromise existing natural resources. We believe that by maintaining an inclusive public process during this EIS review and a thoughtful consideration given to comments, a balance can be achieved. After reviewing the above-referenced EIS and programmatic alternatives for utility-scale solar energy development, Pima County offers the following comments.

BLM Proposed Alternatives

The County has two underlying concerns with the EIS as presented. The first relates to the percentage attributed to solar energy development on public lands. We question the appropriateness of the BLM's assumption that public lands will provide 75 percent of the lands available for utility-scale solar development. Unless public lands are mandated to

bear the majority of the burden for solar energy development, the public/private responsibility should be more equitably partitioned. The second general concern is the lack of consideration of the potential infrastructure impacts associated with transmitting and connecting to the power grid from the various possible locations proposed under both alternatives.

As for the proposed action alternatives proposed, the County reviewed and offers comments on both. However, our most specific comments are on the Preferred Alternative as there are no Solar Energy Zones proposed in Pima County.

Solar Energy Zones (SEZs) Alternative

The concept behind Solar Energy Zones is sensible. This alternative is a step in the right direction in that it identifies areas of minimal resource conflict and the highest potential for solar energy production. If located in close proximity to transmission connections, impacts can be geographically limited within the SEZs, greatly minimizing potential adverse impacts, and giving the solar development community more certainty in where to locate without unexpected obstacles or the types of opposition described in the public hearings in Phoenix and Tucson on similar local projects. Key to this process is the inclusion of all jurisdictions, including local governments, at the beginning of the EIS process.

Regarding the estimated 214,000 acres needed under the reasonably foreseeable solar energy development scenario (RFDS) there is concern that the SEZ Alternative will not provide enough land. According to the draft EIS, however, if the need for additional land arises in the future, or new information becomes available, BLM can expand, add, reduce, or remove SEZs through a land-use planning and environmental analysis process to accommodate the need. Additionally, the BLM Arizona Restoration Design Energy Project EIS is currently looking at identifying areas across the state that may be suitable for development of renewable energy and to develop a set of environmental protection measures for these projects. This exercise is focusing on lands that have been previously disturbed or developed across Arizona regardless of whether the land is publicly or privately owned. These disturbed lands can include retired agricultural fields, landfills, old mine sites and brownfields, which provide lands that can be prioritized or fast-tracked for development given their disturbed state, as opposed to developing on pristine (i.e. previously undisturbed) land. The Restoration Design Energy Project EIS needs to inform the Draft Programmatic EIS for the State of Arizona.

Once specific project areas within SEZs are identified and evaluated on the project-scale, vetted through the public process and comprehensively assessed for potential environmental conflicts, the SEZ Alternative is more likely to meet the objectives of the Programmatic EIS than the proposed Preferred Alternative.

BLM's Preferred Alternative - Solar Energy Development Program

This alternative would potentially allow utility-scale solar energy development facilities on BLM lands scattered across approximately 4.5 million acres in Arizona, with 100,000 acres in Pima County, allowing for the possibility of more widespread impacts and less certainty for the solar energy development community and other stakeholders. Considering that the RFDS estimates that the solar generation over the 20-year study period for the six states would be about 24,000 megawatts, with a use of approximately 214,000 acres, the Preferred Alternative, as proposed, goes well beyond a reasonable accounting of lands necessary for solar energy development. The scale alone is so large that it prohibits any meaningful analysis of the potential scope of impacts to the environment and surrounding communities.

The County's assessment of the lands subject to the Solar Energy Development Program Alternative within Pima County applied five evaluation criteria (see Attachment 1). These criteria are the same measures we consistently use to evaluate other development projects proposed in Pima County. The five criteria used are:

1. *Maeveen Marie Behan Conservation Lands System (CLS)* – Since 2001, the CLS has served as the foundational cornerstone to land-use decisions and planning in Pima County. The CLS was the result of an extensive science-based, peer-reviewed process that identifies the relative value of lands throughout the County with regards to key biological values such as biological diversity and locations of sensitive species and other resources. There are multiple categories that describe these resources, with Important Riparian Areas, Biological Core Management Areas and Special Species Management Areas (see Attachment 2) having the highest resource values. In our analysis of the preferred alternative, we excluded all proposed solar energy sites that fell within these three areas and provided cautionary status to sites within other CLS categories, such as Multiple-Use Management Areas.
2. *Floodplain Management* – The Pima County Regional Flood Control District (RFCD) is responsible for ensuring that development activities that cannot be located to avoid the active floodplain are protected from flooding and do not cause adverse impacts to others. Proposed development sites are routinely evaluated for their potential to impact regulated riparian habitats, including Important Riparian Areas, FEMA floodplains, floodways, sheet flooding and local flow corridors.
3. *Historic and Cultural Resources* – Pima County has a strong Cultural Resources Conservation Program, whose primary responsibilities are to ensure that proposed development actions meet or exceed applicable laws, including County-specific policies and requirements. Lands affected by the PEIS within Pima County were evaluated according to their relationship to county-designated Archaeological

Sensitivity Zones, National Register-listed Properties and Districts, and the latest GIS information showing AzSite archaeological site polygons.

4. *Relationship to Existing County Preserves* – The County has a long history of acquiring lands for conservation. Since 1975, voters in Pima County have approved bond funding for the purpose of conservation acquisitions. More recently in 2004, voters approved \$164 million to fund for the acquisition of conservation and open-space lands. Attachment 3 shows all County-owned conservation and open-space lands, County-held State grazing leases and BLM grazing permits associated with the fee title lands held by Pima County. The local BLM office is an active partner with the County on property management. With regards to the preferred alternative, Pima County is strongly opposed to these BLM lands being subject to solar development. These BLM lands, along with associated State and fee-title lands held by Pima County are being managed for species conservation as part of Pima County's forthcoming Endangered Species Act Section 10(a) permit.
5. *Proximity to Existing or Proposed Development* – The location of solar facilities close to existing development poses potential air quality and other public nuisance problems. Clearing large areas of land for construction of a project can lead to significant neighborhood impacts, including fugitive dust problems both at the time of construction and post construction. Therefore, lands affected by the PEIS lying within Pima County were evaluated for their proximity to existing developments.

Attachment 4 depicts the results of the criteria assessment of those lands within Pima County affected by the PEIS on a parcel-by-parcel basis. We recommend BLM exclude from further consideration those parcels shown in red. We further request that any future changes to the Alternatives in the EIS include the five criteria listed above when identifying lands in Pima County.

Conclusion

It is difficult to understand how two alternatives that are intended to provide a viable response to fulfilling the need for solar energy development can conclude such disparate acreages: across the same six western states 22 million acres are identified under the Preferred Alternative (4.5 million acres in Arizona) and 677,000 acres under the Solar Energy Zones Alternative (13,000 acres in Arizona). Perhaps a third action alternative is merited, or an additional clause to the Solar Energy Zone Alternative, whereby flexibility is afforded to BLM to consider land exchanges with local governments that have identified lands appropriate for solar energy development in exchange for sensitive BLM lands.

Pima County is currently developing specific location criteria to better identify and analyze potentially suitable solar sites as part of the Solar America Communities grant with the City of Tucson and the Department of Energy. Some of these sites appear to be sizeable enough to accommodate utility-scale solar facilities. Approximately 2,100 acres were

BLM and Department of Energy, Solar Energy Development Draft Programmatic EIS
Re: **Scoping Comments on BLM and Department of Energy Solar Energy
Development Draft Programmatic EIS**

May 2, 2011

Page 5

identified as potential solar sites for inclusion in Renewable Energy Incentive Districts (REIDs), with the largest parcel being 1,000 acres. We expect to complete this process shortly, with the possibility of identifying more suitable lands, and would be more than willing to make the results and criteria available to the BLM.

I cannot over-emphasize the importance of coordinating with Pima County and other local entities for reviews and input at the beginning of the application review process. There are options and opportunities that can be explored early in the process if local governments and entities are included in advance. We encourage the BLM to incorporate the multiple efforts, such as the Arizona Restoration Design Energy project and the Pima County and City of Tucson solar energy development efforts, into the solar energy development draft programmatic EIS.

Thank you for the opportunity to comment on this important effort.

Sincerely,



C.H. Huckelberry
County Administrator

CHH/dr

Attachments

- c: The Honorable Chairman and Members, Pima County Board of Supervisors
John Bernal, Deputy County Administrator for Public Works
Nanette Slusser, Assistant County Administrator for Public Works Policy
Nicole Fyffe, Executive Assistant to the County Administrator
Carmine DeBonis, Jr., Director, Development Services Department
Ursula Kramer, Director, Environmental Quality
Linda Mayro, Director, Science and Conservation, Cultural Resources
and Sustainability Office
Arlan Colton, Director of Planning Division, Development Services Department
Diana Durazo, Special Staff Assistant, County Administrator's Office
Robin Johnson, Environmental Specialist, Environmental Quality
Betty Stamper, Central Permits Supervisor, Development Services

Attachment 1

Assessment Methodology for BLM Solar PEIS Preferred Alternative Properties Occurring in Pima County

	Not Acceptable for Utility-Scale Development	Maybe Acceptable for Utility-Scale Development Pending Further Project-Specific Evaluations
CLS	Biological Core, IRA, SSMA,	Multiple Use, Agricultural In-Holdings in CLS, Outside CLS
Proximity to County Preserve Lands	Site is within a County Preserve	Site is within ½ mile of County Preserve
Cultural & Archaeological Resources	Located within a High Archaeological Sensitivity Zone	Located within a Medium or Low Archaeological Sensitivity Zone
Proximity to Occupied/Planned Development	Many residents within ½ mile; not suitable for large scale site clearing	Few to no residents within ½ mile; fugitive dust mitigation likely.
Floodplains/Water-courses	Site contains Important Riparian Area, FEMA Floodplain, Floodway or local Flow corridor which impacts a significant portion of the parcel	Site contains Important Riparian Area, FEMA Floodplain, Floodway or local Flow corridor which impacts only minor portion of the property and avoidance is possible, OR site contains sheet flooding, OR Site may contain xeroriparian habitat, but avoidance is possible

Attachment 2

BLM Administered Lands Being Analyzed for Solar Development as Compared to the CLS

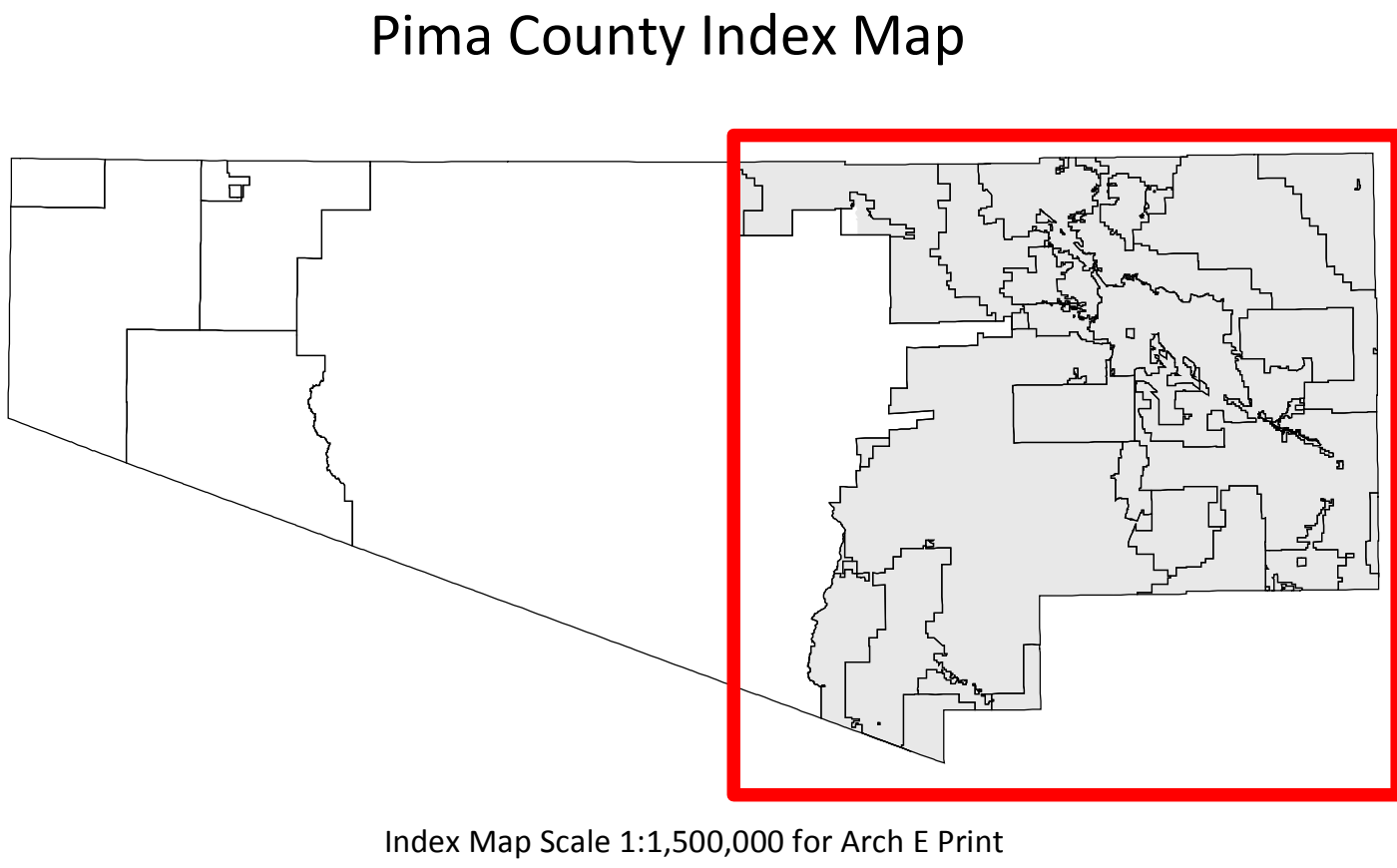
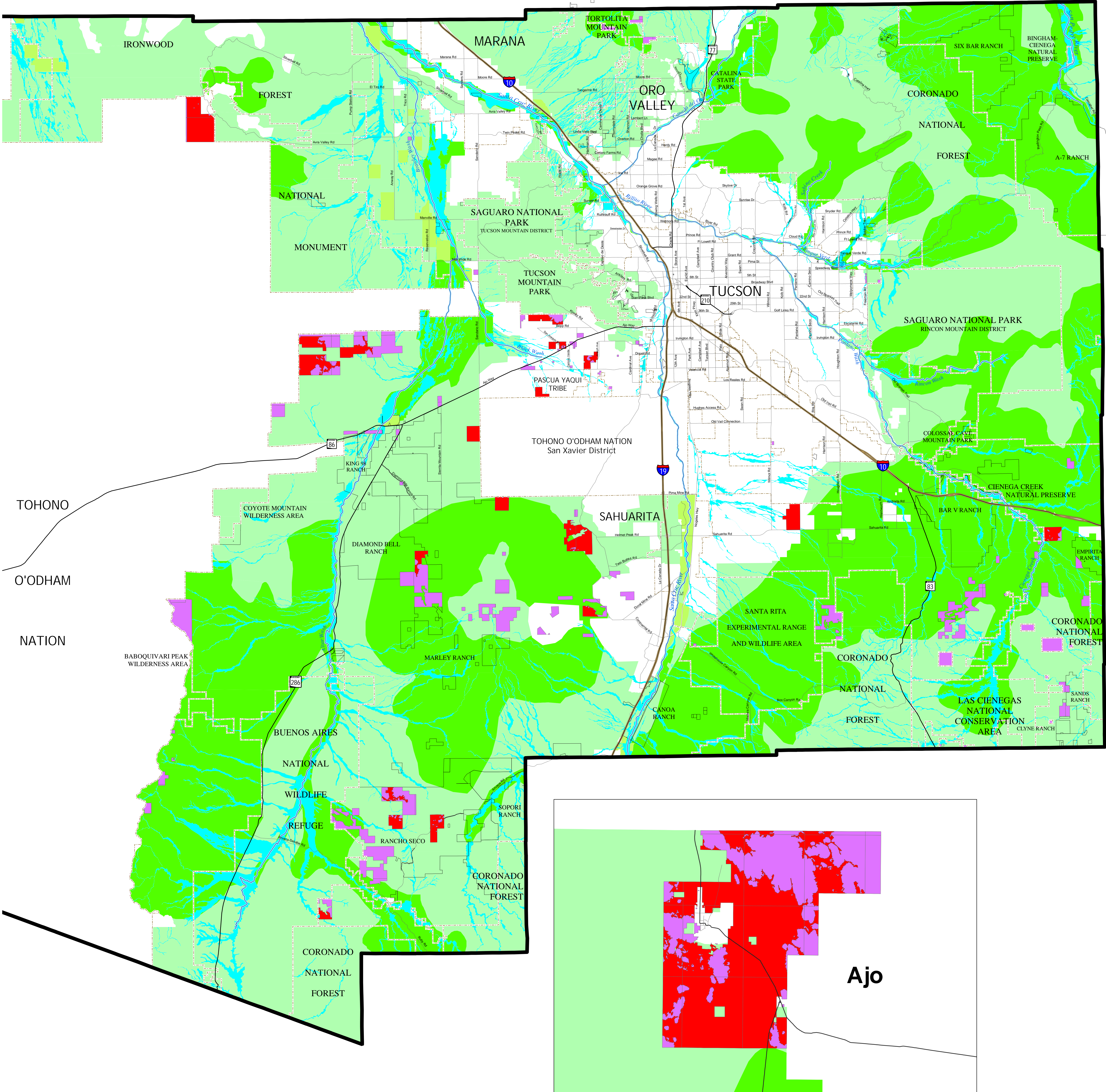
Legend

- BLM Solar Development Alternative
- BLM No Action Alternative

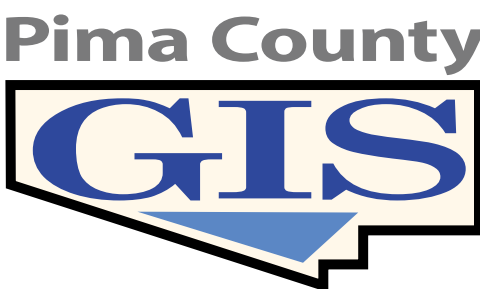
Conservation Lands System

- Agriculture Inholdings Within CLS
- Biological Core Management Areas
- Important Riparian Areas
- Multiple Use Management Areas

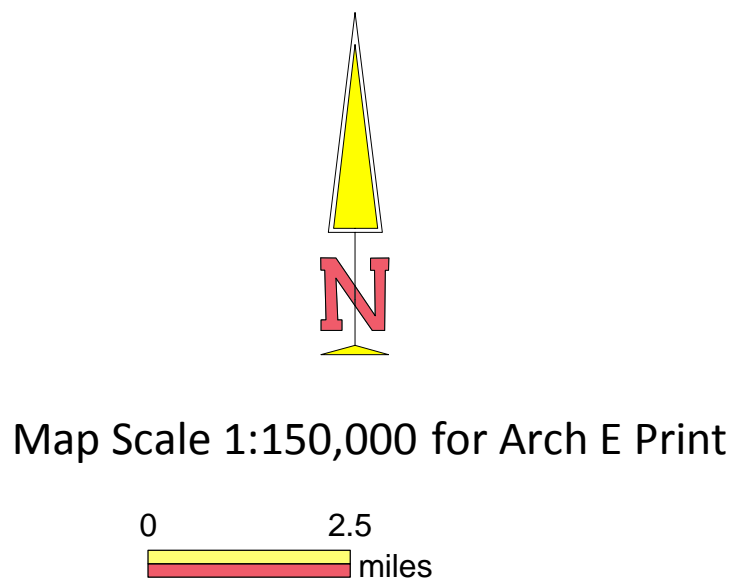
NOTE:
1. There are no Solar Energy Zones (SEZ)
within Pima County
2. The lands available under NO Action also include
the Solar Development Alternative



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Pima County Information Technology Dept.
201 North Stone Avenue - 9th Floor
Tucson, Arizona 85701-1207
(520)740-6670 - FAX:(520)798-3429



APR 19, 2011

Attachment 3

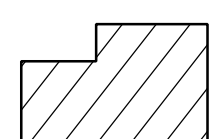
Pima County Conservation Acquisitions as of April 2011

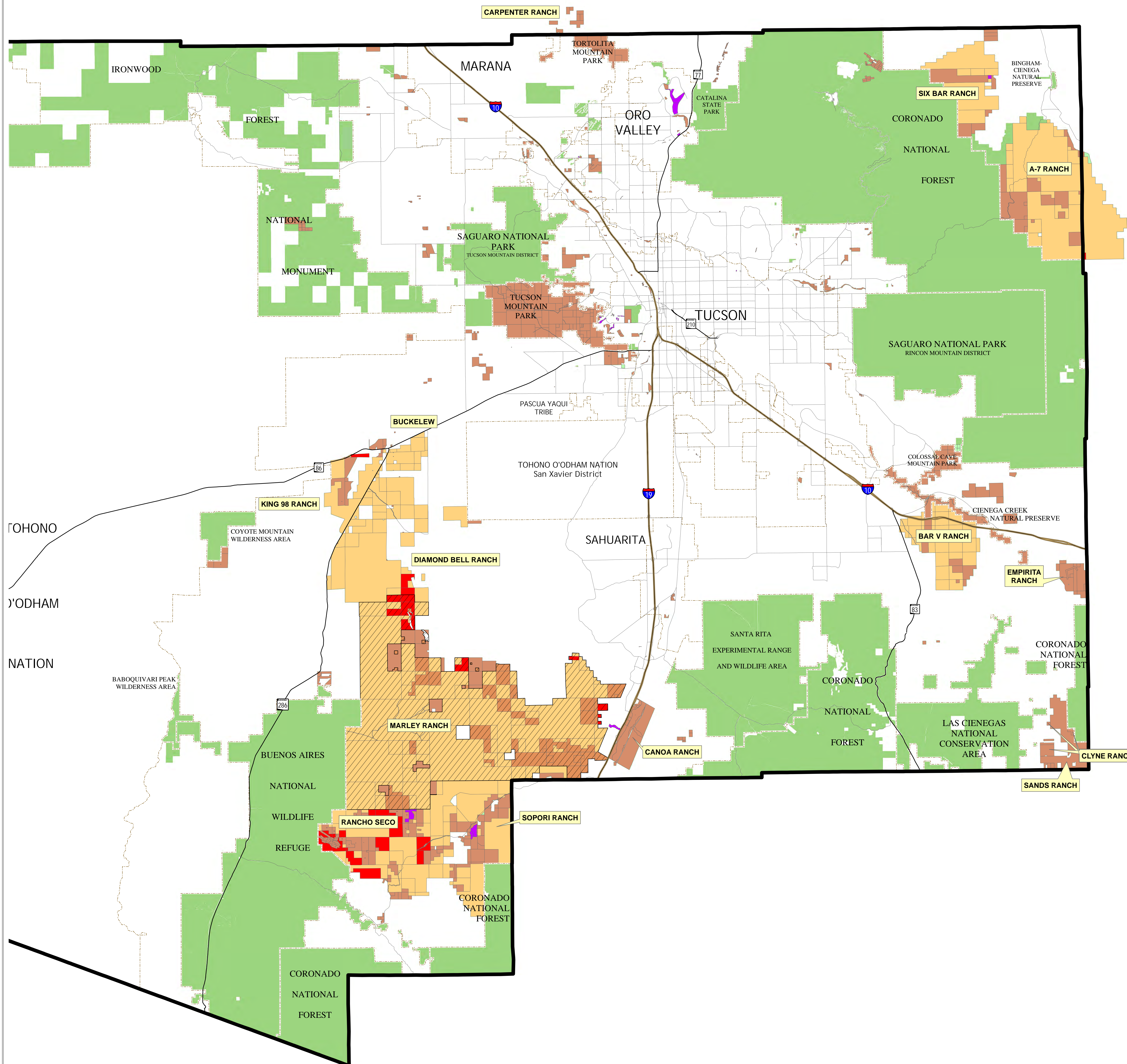
 County Owned in Fee Simple - 91,750 Ac.

County Managed Grazing Leases
130,430 Ac.

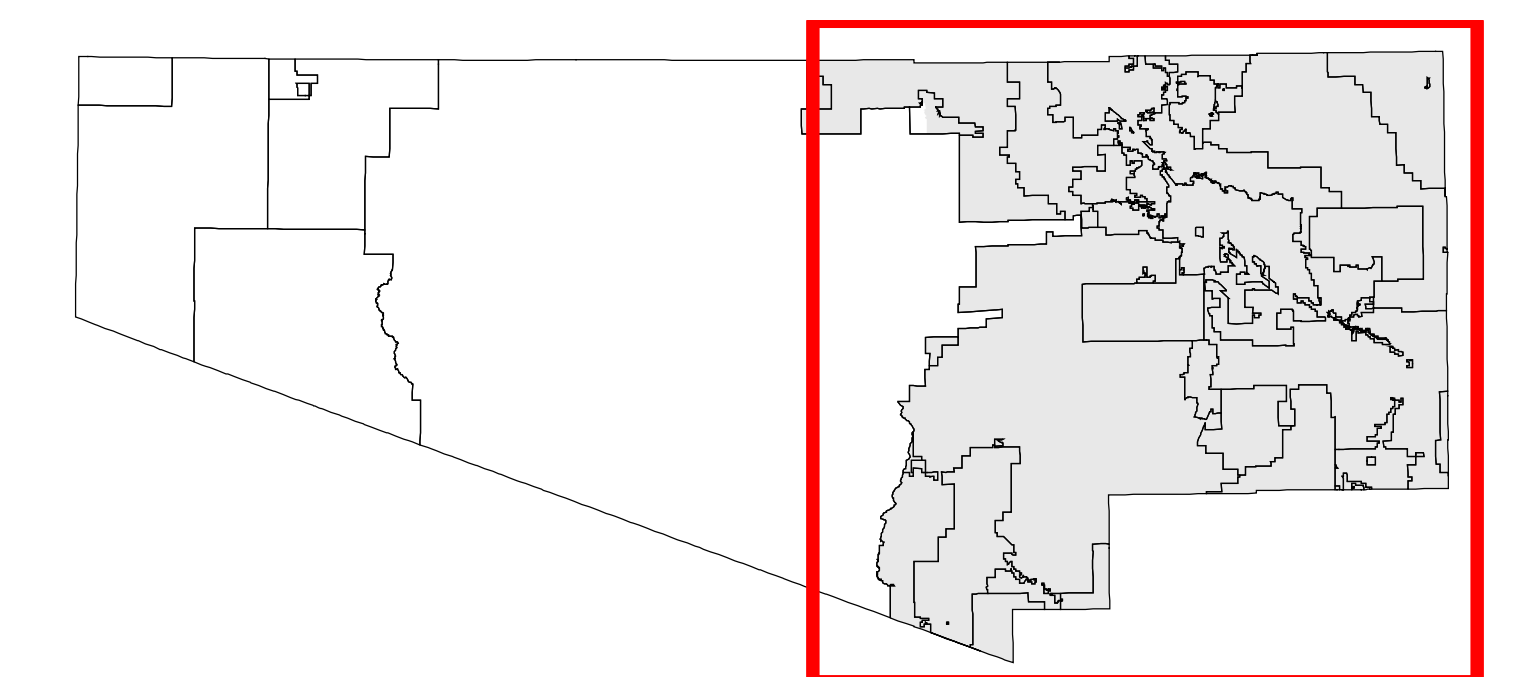
 BLM Grazing Permits - 6,900 Ac.

 State Grazing Leases - 123,530 Ac.

 Marley Acquisition - 105,790 Ac.
(Options Purchased for Phases 2 & 3)



Pima County Index Map

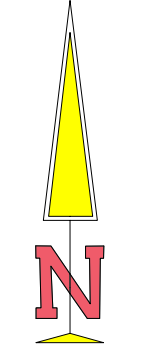
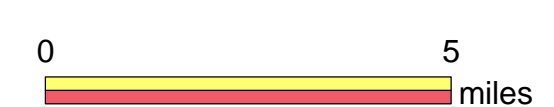


Index Map Scale 1:1,500,000 for Arch E Print

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Map Scale 1:150,000 for Arch E Print


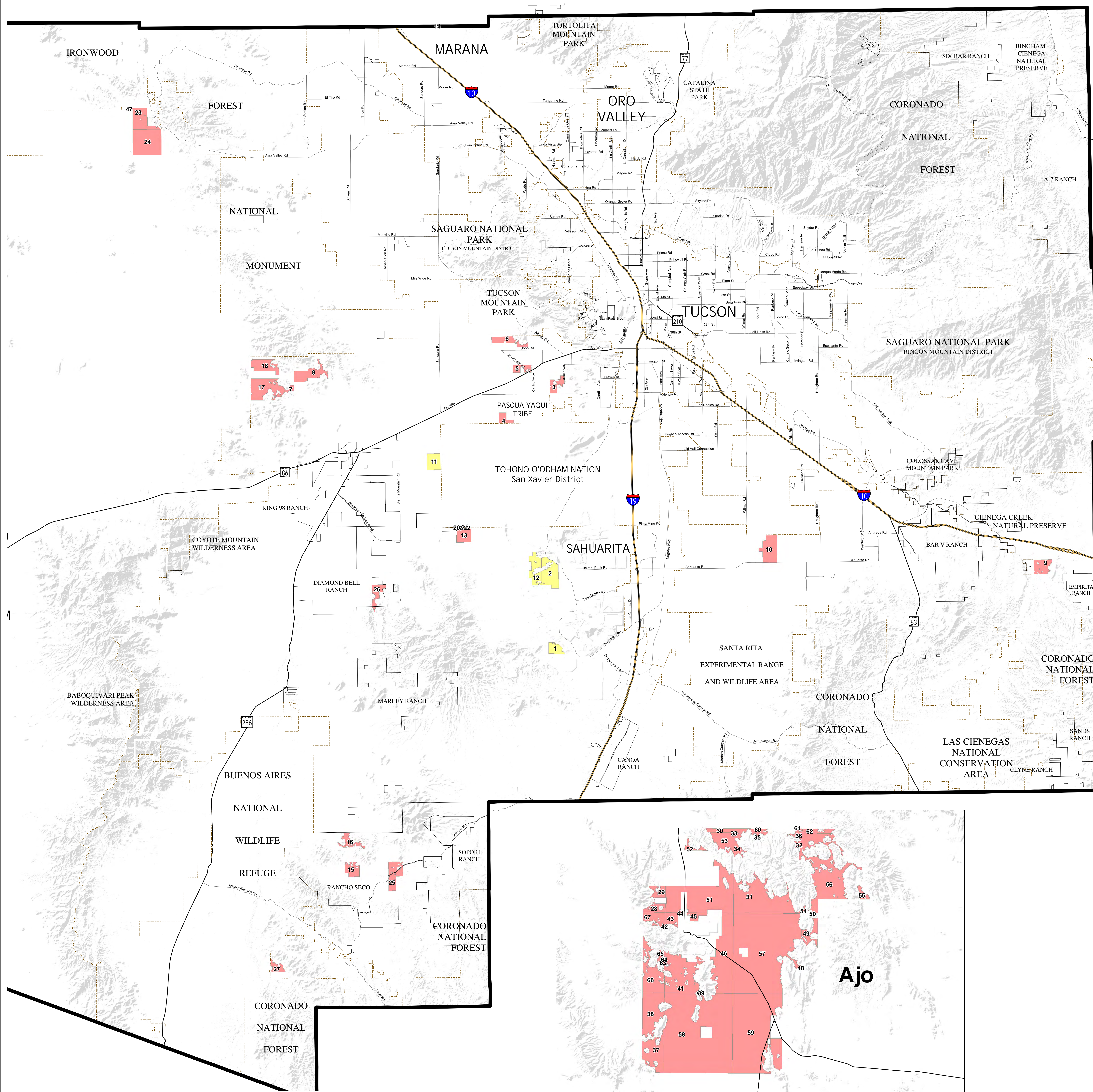


APR 13, 2011

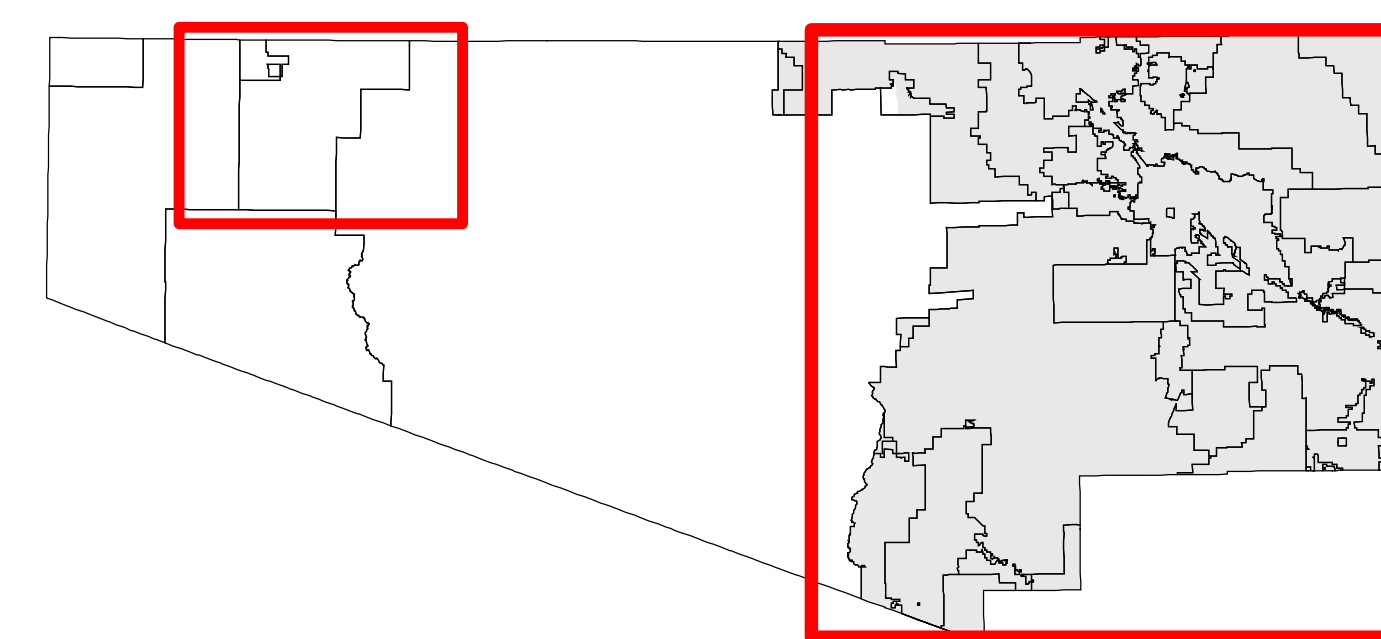
Attachment 4

BLM Solar Development Alternative Acceptability Determination

- Interstate Highway
 - State Highway
 - Major Streets
 - Administrative Boundaries
- BLM Solar Development Alternative
Determination
- Maybe Acceptable
 - Not Acceptable



Pima County Index Map



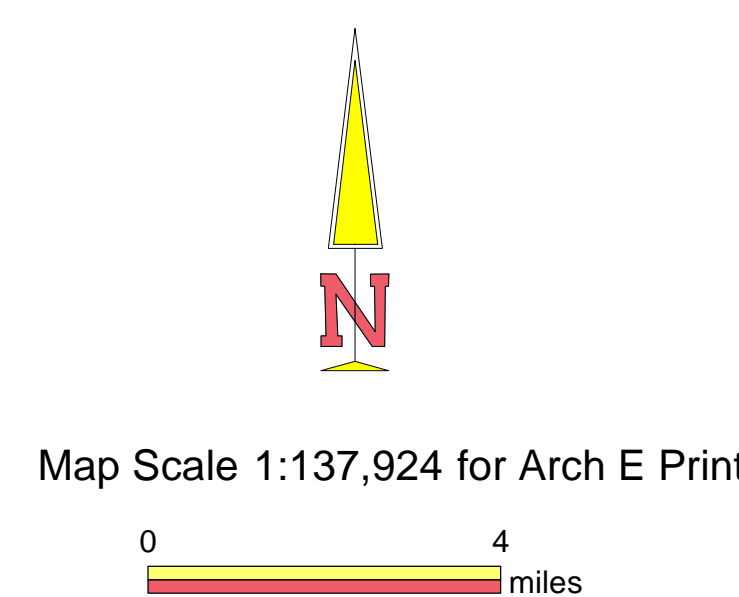
Index Map Scale 1:1,500,000 for Arch E Print

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4/20/2011

\\gis\it\spec\proj\bpowell\hccs0299\mxd\solar_final_d3.mxd cp

Thank you for your comment, Thane Somerville.

The comment tracking number that has been assigned to your comment is SEDDSupp20057.

Comment Date: January 25, 2012 17:04:37PM

Supplement to the Draft Solar PEIS

Comment ID: SEDDSupp20057

First Name: Thane

Middle Initial: D

Last Name: Somerville

Organization: Morisset Schlosser Jozwiak & Somerville

Address: 801 Second Avenue

Address 2: Suite 1115

Address 3:

City: Seattle

State: WA

Zip: 981041509

Country: USA

Privacy Preference: Don't withhold name or address from public record

Attachment: Comments on Supplement to Draft Solar PEIS 012512.pdf

Comment Submitted:

These comments are submitted on behalf of the Quechan Tribe of the Fort Yuma Indian Reservation. See attachment.

LAW OFFICES
MORISSET, SCHLOSSER, JOZWIAK & SOMERVILLE
A PROFESSIONAL SERVICE CORPORATION

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WWW.MSAJ.COM

January 25, 2012

Submitted online at <http://solareis.anl.gov>
and via First Class Mail

BLM Solar PEIS Project Manager
c/o Solar Energy Draft PEIS
Argonne National Laboratory
9700 S. Cass Avenue – EVS/240
Argonne, Illinois 60439

Re: Comments of Quechan Indian Tribe on the Supplement to the Draft
Programmatic Environmental Impact Statement for Solar Energy
Development in Six Southwestern States

Dear BLM Solar PEIS Project Manager:

On behalf of the Quechan Tribe of the Fort Yuma Indian Reservation, we submit the following comments on the Supplement to the Draft Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States (Supplement). As described in more detail below, the Supplement fails to adequately address the Tribe's concerns expressed in its comment letter on the Draft Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States (Solar PEIS), dated March 7, 2011. The Tribe incorporates its prior comments by reference.

I. Interest of the Quechan Indian Tribe

The Quechan Tribe's Fort Yuma Reservation at its current site was established in 1884 as a permanent homeland for the Quechan people. The Tribe's traditional lands extend well beyond the boundaries of the present day Fort Yuma Indian Reservation, however. Historically, the northern territory extended to the vicinity of Blythe, California, the southern territory reached to Sonora, Mexico, the western territory extended to California's Cahuilla Mountains, and the eastern territory approached Gila Bend, Arizona. The lower Colorado River tribes, which include the Quechan, moved up and down the Colorado and Gila rivers, utilizing the banks and floodplain on both sides of the rivers for subsistence and settlements throughout their history. (Alfonzo Ortiz, *Handbook of North American Indians*, Volume 10, Southwest (Quechan) (Smithsonian Institution, Washington D.C. 1982). Certain lands identified or proposed for solar development in Arizona and California fall within the Tribe's traditional territory.

Solar energy development on BLM lands directly affects the Tribe. As you know, the Tribe was engaged in litigation against the Department of the Interior based on Interior's unlawful approval of the Imperial Valley Solar (IVS) project on lands within the traditional territory of the Tribe that contain sensitive cultural and natural resources of significance to the Tribe. See *Quechan Tribe of the Fort Yuma Indian Reservation v. United States Department of the Interior*, 755 F. Supp. 2d 1104 (S.D. Cal. 2010). On December 15, 2010, the Court preliminarily enjoined construction of the IVS Project due to Interior's failure to comply with applicable law. In addition to the Tribe's challenge of the IVS project, there have been many other legal challenges to solar projects approved by Interior under the arbitrary "fast-track" program. Concerns about impacts to cultural resources are prevalent in these cases.

Disputes have also arisen with regard to protection of cultural resources at projects that are underway. For example, the Colorado River Indian Tribes (CRIT) recently learned that significant cultural resources were discovered at the site of the Genesis Solar Energy Project. Letter from the Colorado River Indian Tribes, to George Kline, Bureau of Land Management (Dec. 9, 2011). The BLM took over two weeks to notify the CRIT of the discovery, contravening the National Historic Preservation Act and its regulations. *Id.* (citing 36 C.F.R. § 800.13(b)(3); Programmatic Agreement § VI(b) (incorporating requirements of 36 C.F.R. § 800.13(b)(3))). BLM agreed to allow construction to continue on the historical site before even alerting the CRIT, despite the fact that the Programmatic Agreement states that avoidance of the discovered site is the preferred method of mitigating damage to cultural resources. *Id.* (citing Programmatic Agreement, App. B, § III(a)(ii), App. J, §2.0). The Quechan Tribe offers the following comments because it is aware that its cultural resources are at risk of destruction from future solar projects without adequate safeguards in the Supplement.

II. Comments Of Quechan Tribe on Solar PEIS

A. The Supplement's Use of Legal Mandate Language Continues to Mislead the Public Because There Is No Congressional or Executive Mandate for Utility-Scale Solar Development.

The Supplement continues to state that there is a legal mandate for utility-scale energy development on public lands. The paragraph outlining the BLM's purpose for its proposed Solar Energy Program states that it "will further the BLM's ability to meet the *mandates* of Executive Order (E.O.) 13212 (--Actions to Expedite Energy-Related Projects, *Federal Register*, Volume 66, page 28357, May 22, 2001) and the Energy Policy Act of 2005...." Page 1-3 (emphasis added). As noted in our previous comment letter, the Energy Policy Act of 2005 does not contain a mandatory directive of any kind, and E.O. 13212 requires that departments comply with all relevant laws to ensure that energy projects are safe and environmentally sound. While the Supplement does acknowledge that Secretarial Order 3285A1 requires identifying and prioritizing locations best suited for large-scale solar development, stating that a federal or executive mandate exists to develop utility-scale sustainable energy projects on public lands falsely turns a mere allowance into a direct order. Any reference to a federal or executive mandate should be removed from the Supplement, so as not to mislead the public and skew the analysis of the various alternatives.

B. The Tribe Remains Opposed to the No-Action Alternative, Because Case-By-Case Project Approvals Fail to Protect Public Lands.

The Supplement does not alter the No-Action Alternative, meaning the status quo would continue if this alternative is chosen. The current BLM case-by-case analysis and review of individual solar energy applications has proved to be a bane to both solar energy developers and those interested in protection of public lands and resources. Due to the flaws in the existing system and its failure to sufficiently protect impacted resources, the BLM must identify and set apart certain lands that are best-suited for utility-scale solar development, and must prohibit such development on all other land areas.

C. The Supplement's Modified Solar Energy Development Program Alternative Fails to Address the Quechan Tribe's Concerns of Opening Too Much Land to Utility-Scale Solar Development, and Authorizing Development on Sensitive Lands; This Alternative Must Be Rejected.

The Modified Solar Energy Development Program Alternative (modified alternative) must be rejected. The modification still allows utility-scale development on over 20 million acres, which is a difference of approximately 1.2 million acres from the Solar PEIS. This minimal change is not enough to protect sensitive land, and opening such a large swath of land to utility-scale solar development is unnecessary because the BLM estimates that only 214,128 acres would likely be developed over the next 20-year period. Page 2-71. While the modified alternative does exclude certain land areas previously included in the SEZs, the exclusions are not enough to adequately protect the important resources at risk. The Tribe's concern that opening up such a vast amount of land will result in the same problems and inefficiencies that exist under the current system is not resolved by excluding a few more acres. If the BLM identifies land that is best suited for utility-scale solar development, there should not be a need to open up over 19 million additional acres in the name of flexibility. The variance process is superfluous because the BLM should have prospectively identified land with low resource value, minimal conflict with adjacent land, and that is suitable for solar energy development.

D. The Modified SEZ Program Alternative Represents The Best Alternative Evaluated In the Supplement.

The modified SEZ alternative allows utility-scale solar development on SEZs prospectively identified as lands well suited to such development. The Supplement reduced the total proposed acres available from nearly 700,000 to nearly 300,000, and this reduction applies to both the modified alternative and the modified SEZ alternative. Pages 2-15, 2-18, 2-41. Upon further study, the BLM determined that some lands identified as SEZs in the Solar PEIS were inappropriate based on substantial resource conflicts. Page 2-15. This reduction exemplifies why the modified SEZ alternative is the best approach to utility-scale development. Without studying land in depth to identify whether or not it is appropriate for this form of development, significant natural and cultural resources will likely be put at risk. Even with the reduction in SEZs, more than enough land is available to meet the expected 20-year build out of 214,128

acres. In addition, the BLM has already begun efforts to identify additional SEZs in four of the six states at issue. Pages 2-28, 2-71. Thus, any possible shortage of SEZs could be addressed by identifying new and appropriate SEZs in the future. The SEZ alternative is the better approach to utility-scale solar development on public lands because it “limits development to areas with known environments and investigated effects.” Timothy P. Duane et al., *Water, Work, Wildlife, and Wilderness: The Collaborative Federal Public Lands Planning Framework For Utility-Scale Solar Energy Development In The Desert Southwest*, 41 ENVTL. LAW 1093, 1190 (2011). The modified SEZ alternative best balances the goals of protecting resources with creating sustainable solar energy development.

E. The Supplement Does Not Address The Tribe’s Concerns Regarding Utility-Scale Solar Energy Development on Class L Lands Within the California Desert Conservation Area.

The Supplement does not address the Tribe’s concerns regarding designating Class L lands as appropriate for utility-scale solar energy development. Interior and the Department of Energy should revise the Supplement to exclude utility-scale solar energy development on Class L lands within the California Desert Conservation Area because such development is not consistent with the Class L land designation, as explained in the Tribe’s comment letter to the Solar PEIS, dated March 7, 2011.

F. The BLM Improperly Continues to Process Solar Energy Projects in the Absence of a Solar Energy Program.

Processing active applications for utility-scale solar development improperly interferes with the purposes of the Supplement because there is no mechanism in place to protect important resources at risk. The Supplement notes that applications on lands proposed as exclusion areas in the Final Solar PEIS are likely to be denied, which leaves open the possibility that pending applications could be approved in areas that would be excluded from large solar development projects under the Supplement. That possibility largely defeats the purpose of this planning process. In order to promote the protection of important resources and a more efficient process, Interior must wait until a Solar Energy Program is established before processing pending solar projects.

G. The Supplement Fails to Remove Imperial East as a Solar Energy Zone Despite the Prevalence of Cultural Resources, Prehistoric Human Remains, and Visual Impacts

The Tribe generally supports the SEZ concept, yet, lands known as Imperial East must not be designated as a SEZ. The Imperial East lands are Class L lands, which, as described above, are not appropriate for utility-scale solar energy development. Moreover, these lands are located within the traditional territory of the Quechan Tribe, and are situated in close proximity to lands known and recognized for their cultural sensitivity. Unfortunately, very little land within the Imperial East SEZ has been surveyed for cultural resources, so possible impacts

remain unknown. Page C-51. Considering the likelihood that Quechan cultural sites and even Quechan ancestors' remains lie within this area, it is inappropriate to designate it as a SEZ.

H. No Government-to-Government Consultation Has Occurred Between Interior and the Quechan, As Section 106 Demands.

The Supplement states that government-to-government consultation is underway, yet there has been no effort for such consultation with the Quechan Tribe. Pages 2-22, 2-23, 2-82. The Tribe expects full compliance with Section 106 of the National Historic Preservation Act process, and expects the federal agencies to fulfill their obligations to meaningfully consult with the Tribe on a government-to-government basis when reviewing proposed projects that could affect resources of significance to the Tribe. *See* Page 2-23 (stating that the BLM will invite tribal participation in site-specific proposals located within SEZs). The Tribe further expects Section 106 compliant consultation on concerns related to traditional cultural properties, ethnobotanical resources, visual resources, and the effects of solar development on tribal interests. *See* page 2-23. The Quechan Tribe objects to any process that would result in approval of utility-scale solar projects prior to full completion of the Section 106 and government-to-government consultation processes. The Tribe also objects to any plan that defers consultation until some future time after a project has been approved. *See* Order Granting Preliminary Injunction, *Quechan Tribe of the Fort Yuma Indian Reservation v. United States Department of the Interior*, 755 F. Supp. 2d 1104 (S.D. Cal., December 15, 2010) (enjoining construction of Imperial Valley Solar project due to failure of United States to properly consult with Quechan Tribe).

I. Additional Comments.

As stated in Table 2.3-4, the Tribe agrees that the use of previously disturbed lands within SEZs should be encouraged, however, cultural resource surveys and completion of the Section 106 process are necessary to protect important resources that could be present.

The Tribe supports the exclusion of “[a]reas with important cultural and archaeological resources, such as traditional cultural properties and Native American sacred sites” Table 2.2-1. In determining land that best suits utility-scale solar development, it should always be possible to avoid areas containing sensitive cultural and historic resources and sacred sites.

Table 2.3-2 continues to state that the impacts to cultural resources would be the same for both the modified SEZ program alternative and the modified program alternative, except the impacts in the modified SEZ Program would be concentrated in a smaller area. As described in the Tribe’s comments to the Solar PEIS, the impacts under the modified program alternative would be far greater based on the huge amount of land available for utility-scale development.

The Supplement states that cumulative effects of utility-scale solar development are expected to be less under the modified alternative and the modified SEZ alternative, but it does not address the Tribe’s concern that the Solar PEIS inaccurately analyzed the cumulative effects on cultural resources. Page 2-80; *See* page 6-100 in the Solar PEIS. The Final Solar PEIS must

require an analysis of whether specific land targeted for development has significant cultural resources, and if so, that area must be avoided.

The Supplement fails to address the need for a cultural resource consultation in the pre-application process. The Solar PEIS, Appendix A, Section A.2.1.2.2, describes the proposed pre-application process for the future Solar Energy Program, which requires the applicant to consult with holders of grazing rights and mining claims in the pre-application process. A cultural resource consultation must also be a part of this pre-application process in order to identify cultural resources at an early stage.

Lastly, Interior must ensure that any proposed utility-scale development within the CDCA is limited to Class M or I lands, as Class L lands are inappropriate for such intensive development. Interior should also consider public lands outside the CDCA in California for solar energy projects.

Thank you for your consideration to the Tribe's comments.

Sincerely,

MORISSET, SCHLOSSER, JOZWIAK & SOMERVILLE

A handwritten signature in black ink, appearing to read 'Frank R. Jozwiak', with a long horizontal flourish extending to the right.

Frank R. Jozwiak
Thane D. Somerville
Attorneys for Quechan Indian Tribe

cc: President Keeny Escalanti, Sr. (via e-mail)
Vice-President Ronda Aguerro (via e-mail)
Members of the Quechan Tribal Council (via e-mail)
Pauline Jose, Chairperson, Quechan Cultural Committee (via e-mail)
Members of the Quechan Cultural Committee (via e-mail)
John Bathke, Historic Preservation Officer (via e-mail)

Thank you for your comment, Elizabeth Michalak.

The comment tracking number that has been assigned to your comment is SEDDSupp20058.

Comment Date: January 25, 2012 17:56:26PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDSupp20058

First Name: Elizabeth
Middle Initial: S
Last Name: Michalak
Organization:
Address: PO Box 604
Address 2: 363 E Copper Ave
Address 3:
City: Crestone
State: CO
Zip: 81131
Country: USA
Privacy Preference: Don't withhold name or address from public record
Attachment:

Comment Submitted:

Hello,

After attending the meeting in Alamosa, CO regarding the supplement to the draft solar PEIS, I was very appreciative of how seriously the BLM is treating public comment. Thanks to all of you involved.

I do have some overall concerns regarding the project, and have listed them below.

I feel that solar generation, at its best, can be integrated into local communities, benefiting the local economy and making a minimal impact on the nvironmental/cultural surroundings.

Regarding projects on BLM land, I have concern that, A: the communities/counties where the solar projects will be built will not benefit financially (because of the areas being located on public lands) but will still have to deal with road maintenance, housing issues due to "imported" employees, etc. and

B: that the minimum scope of the proposed projects being set at 20 megawatts will mean big impact on the surroundings, both on environment/wildlife and culture/quality of life for local residents.

In my view, generating green energy on a commercial level and transmitting it from rural to urban areas runs the risk of negatively impacting local communities and environment, hence reducing the integrity of "clean" power. If it is absolutely necessary to open public lands for solar, I see several things that could help maintain this integrity. One: a financial incentive to the local counties, Two: acceptance of bids for smaller projects, and Three: focus on channeling the power as locally as possible. Urban landscapes have such a high potential for distributed solar (rooftops, etc) that it seems unnecessary to allow them to use power generated far away on what had been undisturbed public land.

Thank you for your work and conscientious review of this process.

Sincerely,
Elizabeth Michalak

Thank you for your comment, Christopher Lish.

The comment tracking number that has been assigned to your comment is SEDDSupp20059.

Comment Date: January 25, 2012 18:16:16PM

Supplement to the Draft Solar PEIS

Comment ID: SEDDSupp20059

First Name: Christopher

Middle Initial:

Last Name: Lish

Organization:

Address:

Address 2:

Address 3:

City: Olema

State: CA

Zip:

Country: USA

Privacy Preference: Don't withhold name or address from public record

Attachment: 120125_solar_energy_draft_peis_supplement.doc

Comment Submitted:

Wednesday, January 25, 2012

Solar Energy Draft PEIS
Argonne National Laboratory
9700 S. Cass Avenue
EVS/240
Argonne, IL 60439

Subject: Improve and Finalize Solar Zoning Program to Protect Wildlife Habitat and Parks in the Southwest from Poorly Sited Solar Energy Development while Promoting Distributed Solar Energy

Dear Secretary Salazar,

Thank you for the opportunity to comment on the Supplement to the Draft Programmatic Environmental Impact Statement (PEIS) for Solar Energy Development in Six Southwestern States. I am submitting these comments as someone who cares deeply about preserving our precious Western ecosystems and wildlands. To better protect and preserve our environment for current and future generations, it is critical that we halt climate destabilization and end our dependence on fossil fuels as quickly as possible. Our nation must transition from a dirty fossil fuel-based economy to one that runs on clean energy. To that end, I strongly support developing distributed renewable energy sources, including solar, but not at the expense of our national parks, wilderness, and conservation heritage. We must ensure that the development of any large-scale renewable power plants on our public lands is done right—by protecting our wildlife, wildlands, and water resources.

“Our duty to the whole, including to the unborn generations, bids us to restrain an unprincipled present-day minority from wasting the heritage of these unborn generations. The movement for the conservation of wildlife and the larger movement for the conservation of all our natural resources are essentially democratic in spirit, purpose and method.”

-- Theodore Roosevelt

As part of a clean energy future that includes robust commitments to energy efficiency and conservation—and widespread use of rooftop solar energy production—I support environmentally responsible solar projects on our public lands. The best path going forward will guide solar development to lands with the highest quality solar resource, where the power generated can be delivered easily and over a short distance to consumers, and where there is the lowest potential for conflict with fish, wildlife, public access, and other values and uses. If done smart from the start, renewable energy development on public lands can both help meet our climate and clean energy needs and protect our beloved parks, wildlands, and crucial wildlife habitat.

“As we peer into society’s future, we—you and I, and our government—must avoid the impulse to live only for today, plundering for our own ease and

convenience the precious resources of tomorrow. We cannot mortgage the material assets of our grandchildren without risking the loss also of their political and spiritual heritage. We want democracy to survive for all generations to come, not to become the insolvent phantom of tomorrow.”

-- Dwight D. Eisenhower

We have an historic opportunity to get solar development right on public lands, and the long-term plan for solar now under development—the Supplement to the Draft Solar PEIS—will play a critical role. I applaud the Bureau of Land Management (BLM) in responding to recommendations from the public to focus development in pre-screened, low-conflict zones. Guiding solar development to appropriate places is the best way to ensure that the benefits of solar energy are realized while also safeguarding our public wildlands.

“We abuse the land because we regard it as a commodity that belongs to us. When we see the land as a community to which we belong, we may begin to use it with love and respect.”

-- Aldo Leopold

Currently, the solar resources of our public lands are being managed on the same antiquated project-by-project basis that oil and gas resources have been managed. Continuing this scatter-shot approach and permitting these very large projects to be dotted across our public lands is certain to harm sensitive wildlife species and diverse recreational opportunities, and will also lead to costly conflicts, delays, and litigation at a time when solar energy is needed to improve our energy security and provide much-needed jobs.

“The nation behaves well if it treats the natural resources as assets which it must turn over to the next generation increased, and not impaired, in value.”

-- Theodore Roosevelt

Overall, the Supplement is a step in the right direction, and most of the elements should be carried through in the final plan. The Supplement clearly draws on the input received from conservationists and others. Significant improvements to the draft include the commitment to do more research on wildlife impacts, the pledge to make more sensitive areas off limits to development, and the inclusion of additional incentives to drive development to low-conflict solar energy zones. With some additional work to limit development outside the designated zones and provide adequate mitigation for habitat losses, the proposed solar zoning framework will serve as an effective, strategic roadmap to developing the most appropriate solar resources on public lands.

“For in my experience it seems well-nigh impossible to obtain a hearing on behalf of Nature from any other standpoint than that of human use.”

-- John Muir

I strongly support developing rules to guide solar energy projects on the most appropriate locations on public lands to minimize impacts to wildlife and ecosystems. I commend the BLM for recognizing the need for a better way to develop solar projects, by designating zones that minimize conflicts with wildlife and other resources and providing incentives for projects located in these zones. I also appreciate your recognition of the need to provide limited flexibility to the solar industry for well-sited projects outside zones. These rules should be applied to all solar energy applications on public lands, not just those filed after October 28, 2011. I am concerned, however, that your proposal to allow additional projects outside zones (the “Variance Process”) could undermine this entire solar energy program if it is not limited to places with low environmental value. These proposals should meet strict environmental criteria. Adoption of these and other proposed program components will help protect the unique and sensitive resources of our public lands while providing more certainty to all stakeholders.

“If future generations are to remember us with gratitude rather than contempt, we must leave them with more than the miracles of technology. We must leave them with a glimpse of the world as it was in the beginning, not just after we got through with it.”

-- Lyndon B. Johnson, upon signing the Wilderness Act, 1964

I am also seriously concerned that the revised plan still leaves some wilderness quality lands open for development. To ensure that solar development on public lands is smart from the start, I recommend that:

- The BLM should exclude all Citizens’ Wilderness Proposal lands (wilderness quality lands) from development;
- The BLM should ensure that these large solar projects are built primarily in the zones; and
- The BLM should provide a 60 day comment period on the final plan to allow public response to additional information in the final plan.

“In permitting the sacrifice of anything that would be of the slightest value to future visitors to the convenience, bad taste, playfulness, carelessness, or wanton destructiveness of present visitors, we probably yield in each case the interest of uncounted millions to the selfishness of a few individuals.”

-- Frederick Law Olmstead

To help ensure national parks are protected, I ask that you exclude new solar development on lands within 15 miles of national park units unless the National Park Service determines these lands are suitable for consideration under the “variance” process and can be developed without damaging park resources. This precautionary “smart from the start” approach is justified because these lands are critical to the ecological health of park resources and the experience of park visitors. Without strong safeguards in place, vast solar energy facilities could potentially be built under the variance process and present the following threats:

- Fragmentation of wildlife corridors crucial to wide-ranging species. Examples include lands on Joshua Tree National Park's north and northeast boundaries that are utilized by Desert Tortoises and connect the park to nearby wilderness areas. Also, allowing solar development in old-growth Joshua Tree woodlands, such as what could happen north of Mojave National Preserve's Clark Mountains and east of the Preserve's New York Mountains should be avoided.
- Harming scenic vistas. By placing solar projects on our national parks' doorsteps, we will negatively affect the experience so many Americans cherish. For instance, industrializing Death Valley's eastern boundary could negatively affect the parks stunning wide open vistas, as well as reduce habitat and water resources for rare and endangered species.

"One hundred years from now, as people look back on our use of this continent, we shall not be praised for our reckless use of its oil, nor the loss of our forests; we shall be heartily damned for all these things. But we may take comfort in the knowledge that we shall certainly be thanked for the National Parks."

-- Secretary of the Interior Ray Lyman Wilbur, 1931

I commend the BLM for proposing to exclude fragile and ecologically important areas from solar development in response to environmental concerns ("Exclusion Areas"). Please expand the Exclusion Areas to include environmentally sensitive areas important to the survival of wildlife species such as: wildlife habitat management areas, desert tortoise connectivity areas, and the entire Ivanpah Valley in both Nevada and California.

"Every man who appreciates the majesty and beauty of the wilderness and of wild life, should strike hands with the farsighted men who wish to preserve our material resources, in the effort to keep our forests and our game beasts, game-birds, and game-fish—indeed, all the living creatures of prairie and woodland and seashore—from wanton destruction. Above all, we should realize that the effort toward this end is essentially a democratic movement."

-- Theodore Roosevelt

I urge you to take this common-sense approach that will allow solar development that is faster, cheaper, and better for the environment and consumers. By focusing on the places that have the best chances for success and having a clear plan to deal with potential impacts before they occur, the BLM can ensure that solar development avoids the many conflicts, controversies, and impacts that have blocked oil and gas development on public lands and we will be able to move quickly to develop our solar resources. This will enable America to better meet our clean energy demands while also preserving our nation's wildlife, wildlands, and other natural treasures.

"It is our task in our time and in our generation, to hand down undiminished to those who come after us, as was handed down to us by those who went before,

the natural wealth and beauty which is ours.”
-- John F. Kennedy

Thank you for working to balance our need for solar energy with protecting wildlife and habitats in America's national parks and other sensitive lands. Please improve and finalize this much-needed program and continue to work to establish wildlife-friendly and consistent rules for developing solar energy on our public lands.

“A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise.”
-- Aldo Leopold

Thank you for your consideration of my comments. Please do NOT add my name to your mailing list. I will learn about future developments on this issue from other sources.

Sincerely,
Christopher Lish
Olema, CA

Thank you for your comment, Larry Johnston.

The comment tracking number that has been assigned to your comment is SEDDSupp20060.

Comment Date: January 25, 2012 18:19:03PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDSupp20060

First Name: Larry
Middle Initial: K
Last Name: Johnston
Organization: Mono County
Address: P.O. Box 347
Address 2:
Address 3:
City: Mammoth Lakes
State: CA
Zip: 93546
Country: USA
Privacy Preference: Don't withhold name or address from public record
Attachment: solar_letter--final[1].docx

Comment Submitted:

From the Office of:
Larry K. Johnston
Supervisor, District 1
Mono County, California

Bureau of Land Management
Solar Energy Draft PEIS
Argonne National Laboratory
9700 S. Cass Avenue—EVS/240
Argonne, IL 60439

Dear Ms. Stewart,

Please consider these as my comments on the Supplement to the Draft Solar Energy Programmatic Environmental Impact Statement.

Mono County, like many counties in the West, contains a great amount of BLM lands. I support the BLM focusing solar development in pre-screened, low-conflict zones; the Supplement is a step in the right direction. However, I would suggest the plan provide additional incentives for building projects in low conflict zones and avoid development on public lands that are important for wildlife, recreation, and tourism, to wit:

- Large-scale solar projects should be built primarily in the pre-screened, low-conflict zones;
- Counties should have a major role in designating future solar energy zones; and
- BLM should have a 60 day comment period on the final plan to allow public response to additional information in the final plan.

By focusing on low-conflict zones, the BLM would be taking an approach that will allow solar development that is faster, cheaper and better for the environment, consumers and our western counties.

In Mono County specifically, I suggest that the Volcanic Tablelands (which are north of Bishop, CA) not be open to variance applications. These Tablelands contain rocky, undulated topography not suited to large scale solar (significant grading required). Additionally, this region is laced with sensitive cultural resources (village site, petroglyphs, etc.), has high visual impacts, and is popular for diverse types of recreation.

Thank you for your consideration.

Sincerely,

Larry K. Johnston
Supervisor, District 1

Thank you for your comment, Mark Wintch.

The comment tracking number that has been assigned to your comment is SEDDSupp20061.

Comment Date: January 25, 2012 21:35:50PM

Supplement to the Draft Solar PEIS

Comment ID: SEDDSupp20061

First Name: Mark

Middle Initial: J

Last Name: Wintch

Organization: Wintch Livestock Company

Address: Wah Wah Ranch

Address 2: HCR 78 Box 10

Address 3:

City: Milford

State: UT

Zip: 84751

Country: USA

Privacy Preference: Don't withhold name or address from public record

Attachment: BLM SEZ complaint letter.docx

Comment Submitted:

To whom it may concern:

While reviewing the Programmatic Environmental Impact Statement for Solar Energy Development in Six Western States I have found several errors in the Wah Wah Solar Energy Zone summary that I would like you to be aware of.

- On page C-302, bullets two and three are of concern. While it may be only three percent of the total allotment of the permittee, it will impact watering and traveling of the cattle eliminating more than the acres directly in the SEZ. Also, barring the ground will cause soil erosion by wind. The past several years we have had a severe drought and much of the soil has been blown away without barring the ground with equipment.
- Page C-304, the last bullet indicates noise levels that would not meet the EPA guidelines and Iron county regulations. The Wah Wah SEZ is not in Iron County, it is in Beaver County. The noise level at the nearest residence, and dust level for that matter, would be much greater because the Wah Wah Ranch is directly next to the SEZ.
- Page C-317, the first paragraph mentions a power line that ran to the Desert Experimental Range. It was a phone line and has no significant value.
- Page C-318, the second to last paragraph states that the Sevier River “begins in a meadow high in the Wasatch Mountains”. This is factually not so. The Sevier River begins in the mountains east of Cedar City and south of Panguitch Utah.

These are a few examples of many items that are incorrect within the document. If there is this many flaws in this short of a section how many more problems are there within sections that I have not read? My concerns are related with the area around the SEZ area. I live directly north of the proposed site. This will have a negative impact on my farming operation and my feed lot. Barring the ground will damage my crops and affect the health of my cattle in a negative way. I may be one operation and only one family in the entire valley but we have lived here and operated this ranch for over 100 years. Creating a SEZ will have a negative impact on me and my family’s way of life. It is maddening that so much care is given to the past and the ancient peoples who lived here and the present occupants seem to have little or no say in a matter that may drive them from their home and their business.

I also do not understand why the BLM would want to bare ground when 10 miles to the north of the proposed SEZ there is a hard pan area where no vegetation grows. If the ground is barren the erosion factor would disappear. I oppose the creation of this SEZ and would encourage you to do a better job putting factual and relevant information in a document that costs this much and of this importance.

Thank you

Mark Wintch,

Owner Operator of the Wah Wah Ranch

Thank you for your comment, Kevin Emmerich.

The comment tracking number that has been assigned to your comment is SEDDSupp20062.

Comment Date: January 26, 2012 00:56:13AM
Supplement to the Draft Solar PEIS
Comment ID: SEDDSupp20062

First Name: Kevin
Middle Initial: R
Last Name: Emmerich
Organization: Basin and Range Watch
Address: P.O. Box 70
Address 2:
Address 3:
City: Beatty
State: NV
Zip: 89003
Country: USA
Privacy Preference: Don't withhold name or address from public record
Attachment: BRW-PEIS 2012.pdf

Comment Submitted:

Please see attached file

January 25th, 2012

Solar Energy Draft PEIS
Argonne National Laboratory
9700 S. Cass Avenue
EVS/240
Argonne, IL 60439

Sent via comment form on PEIS web site:

Please accept the following comments on the Supplement to the Solar Programmatic Environmental Impact Statement

Basin and Range Watch is a group of volunteers who live in the deserts of Nevada and California, working to stop the destruction of our desert homeland. Industrial renewable energy companies are seeking to develop millions of acres of unspoiled habitat in our region. Our goal is to identify the problems of energy sprawl and find solutions that will preserve our natural ecosystems and open spaces. We have visited the site containing the entire Right of Way proposal for Silver State North and Silver State South. We have found several important resources on these sites including a healthy desert tortoise population.

Purpose and Need:

All alternatives are now defined by a Need reflecting the recent Secretarial Order 3283: Enhancing Renewable Energy Development on Public Lands.

The goals of Section 4 in Secretarial Order 3283 clearly state a need for environmental responsibility: *"the permitting of **environmentally responsible** wind, solar, biomass, and geothermal operations and electrical transmission facilities on the public lands;*

The projects that would be associated with the solar PEIS would be utility scale and would demand anywhere from 2,000 to 10,000 acres. There is no way developments on that scale can be considered "environmentally responsible".

The Purpose and Need Statement for both the BLM and DOE should include a need to site solar energy using distributed generation systems and on Environmental Protection Agency identified brownfields. By placing renewable energy in the built environment and on degraded

lands, we can avoid conflicts involving biological resources, cultural resources, groundwater issues, alteration of floodwaters, air quality issues, impacts to wilderness areas and national parks, property values, visual resources and public health.

Alternatives:

A full range of alternatives should be considered in every EIS document. That is required by NEPA.

Following the guidelines of the National Environmental Policy Act, the final EIS should present the environmental impacts of the proposal and the alternatives in comparative form, thus sharply defining the issues and providing a clear basis for choice among options by the decision maker and the public. In this section agencies shall:

- (a) Rigorously explore and objectively evaluate all reasonable alternatives, and for alternatives which were eliminated from detailed study, briefly discuss the reasons for their having been eliminated.
- (b) Devote substantial treatment to each alternative considered in detail including the proposed action so that reviewers may evaluate their comparative merits.
- (c) **Include reasonable alternatives not within the jurisdiction of the lead agency.**
- (d) Include the alternative of no action.
- (e) Identify the agency's preferred alternative or alternatives, if one or more exists, in the draft statement and identify such alternative in the final statement unless another law prohibits the expression of such a preference.
- (f) Include appropriate mitigation measures not already included in the proposed action or alternatives.

Alternatives not within the jurisdiction of the lead agency:

These should include a **Distributed Generation** Alternative and an **EPA Identified Graded Lands Alternative**. As pointed out above, these alternatives are required to be considered under NEPA. Recent “mandates” by the Interior Department discourage these alternatives, but these are worded carefully using terminology like “recommends”. The fact is that there are no mandates that say that BLM can not consider an off- site alternatives to projects that will have major impacts to resources on public lands.

In its original scoping letter on the recent Solar Programmatic Environmental Impact Statement, The Environmental Protection Agency has identified hundreds of thousands of acres of degraded and contaminated sites around the country which could generate up to 920,000 MW of solar generation. This could easily replace and surpass any desire to develop 285,000 acres of untrammelled public lands.

Now that unlimited Federal subsidies for renewable energy projects are a thing of the past, the realities of feasible solar energy production are all on the table. Extreme cost and resource conflicts are eliminating the Concentrated Solar Thermal designs from the picture.

BrightSource is one of the few survivors because their capitol was originally provided by federal subsidies. The rest appear to be falling like dominos. Almost all utility scale solar designs are now photovoltaic. While it is difficult to use CSP technology on the distributed scale, photovoltaics can be used at any scale in many configurations. In December, 2011, Germany installed 3,000 MW of rooftop, distributed energy. That is more MW in one month than all of the utility scale projects being built in the US would produce combined so far.

<http://www.solarserver.com/solar-magazine/solar-news/current/2012/kw02/german-pv-installations-in-2011-even-higher-than-in-record-year-2010-3-gw-installed-in-december.html>

Even under the best case scenario, utility scale PV will lose ten percent capacity in the transmission journey alone.

Distributed generation in the built environment should be given much more full analysis, as it is a completely viable alternative. Environmental costs are negligible with distributed generation, compared with this proposal. Distributed generation cannot be “done overnight,” but neither can large transmission lines across hundreds of miles from remote central station plants to load centers. Most importantly, distributed generation will not reduce the natural carbon-storing ability of healthy desert ecosystems, will not disturb biological soil crusts, and will not degrade and fragment habitats of protected, sensitive, and rare species.

Alternatives should be looked at that are in load centers, not closest to the project site. There is a need to consider the “macro” picture, the entire state, to look at maximum efficiency.

A master comprehensive plan should exist before large expensive inefficient solar plants are sited and built out in the wildlands. This plan should carefully analyze the recreational and biodiversity resources of the southwest. A list of assumptions should be included detailing the plan for integrating various fuels mixes and technologies into each utility's plan, an overall state plan, and a national plan. Loads should be carefully analyzed to determine whether additional capacity is needed for peaking, intermediate, or baseload purposes. Unit size, which impacts capital and operating costs and unit capacity factors, has a direct bearing on the relative economics of one technology over another. A plan might recommend that smaller units built in cities and spaced in time offer a less risky solution than one large unit built immediately.

Right now there is no utility plan, no state plan, and no national plan. Large-scale central station energy projects have been sited very far from load centers out in remote deserts, with the only criterion being nearness to existing transmission lines and natural gas lines. Very little thought has been given to the richness of biological resources, the cumulative impacts on visual scenery to tourists, the proximity to ratepayers, or the level of disturbance of the site.

The California Energy Commission says they will be a need to build many new efficient natural gas peaker or baseload plants to back up the renewable projects planned. Instead, the renewables should be distributed generation in load centers, which will provide much more efficiency, rather than inefficient remote central station plants that reduce biodiversity and require expensive transmission lines. This reduces the risk, as distributed generation is a known technology and has been proven in countries like Germany where incentive programs have been tested. Incentive programs can be designed in an intelligent manner to vastly increase distributed generation. Incentives for large remote projects are unproven to lower risk and may actually raise debt levels with runaway costs associated with poor siting and higher-than-anticipated operating and maintenance costs.

Our Preferred Alternative:

Our preferred alternative for the PEIS would be to adopt a No Action Alternative and develop a policy that promotes renewable energy on a distributed scale. We would support policy that favors no solar development on public lands and examines solar development on brownfields and on a distributed scale.

Variance:

It has seemed unclear throughout this entire process what exactly BLM and DOE are attempting to do here. On the one hand, you want to create what seem to be one-stop approval zones for solar developers on a vast amount of public land – 285,000 acres, but you are still opening up 22 million acres to the business as usual solar energy review.

By creating 285,000 acres of one-stop approval Solar Energy Zones and keeping the “Priority Projects” along with variance in your preferred alternative, you are just giving more away to the solar industry at the expense of tax payers and public land owners.

Specific Comments on Solar Energy Study Zones:

We have made comments on the original PEIS, but we would like to provide the following additions to these comments on these 4 Solar Energy Zones.

Amargosa Valley, Nevada:

We believe the BLM took a step in the right direction by reducing this SEZ to 8,000 acres, but we still would like to point out the following issues:

Eight thousand acres still would be 12 square miles of development. Amargosa Valley, Nevada has historically had numerous conflicts regarding dust. There have been heated debates over the local dairy farm as well as BLM permitted off highway vehicle races running through the valley.

Public health issues with dust can include concerns about Valley Fever as well as elevated levels of radon being stirred up by dust.

Due to past underground atomic tests on the adjacent Nevada Test Site, soil radon levels are three times the national average in parts of Amargosa Valley. Will plowing up so much soil create health problems for local people as radon particulates are stirred up by construction and local wind gusts?

At this time, there have been a few large scale utility scale solar projects approved. The Desert Sunlight Project in Riverside County has been creating dust issues in spite of strict mitigation measures.

Controlling dust is difficult in arid environments and the following photos show how efforts to mitigate dust for recently approved energy projects under construction have mostly failed:



^Above is the lay down area for construction of the Sunrise Powerlink, Imperial Valley, California. Dust is commonly stirred up during windy weather. Mitigation efforts have not controlled this.



^The above two photos show the now bankrupt Solar Trust of America Blythe Solar Energy Project near Blythe, California. The Right of Way was approved. The company started construction and had to return their 2.1 billion dollar DOE loan when they went under. Efforts to control dust went on in spite of the fact that there is no future for this project. Water trucks were wetting the new roads everyday until September. To save water, the company laid down an acrylic on their new roads. It is not working. Residents are complaining that the wind commonly stirs up dust from the disturbance.



^The First Solar, Desert Sunlight Project located near Desert Center, California. The applicant is in violation of dust mitigation standards.

Vast amounts of water are needed to control dust. In the case of the Desert Sunlight Project, local water well levels are starting to fall due to all of the water needed to mitigate construction dust. The applicant has agreed to dig local wells deeper if this happened. The Desert Sunlight Project has only developed 200 acres of the 4,400 acres they plan to develop. How can there

possibly be enough water for this? Most desert aquifers are fossil aquifers. Water is left over from wetter climatic phases. They simply do not recharge water.

The Amargosa SEZ would be 8,000 acres or 12 square miles. The Amargosa Valley lies in Basin 230 in the Nevada State Engineer's water jurisdiction. The Amargosa Valley is over-drafted by 17,000 acre feet. Even if solar energy plants are photovoltaic, this would still require thousands of acre feet for construction and dust control as well as 5 or 6 acre feet a year for panel washing. Solar applicants are often dishonest about how much water they would use for panel or mirror washing. First Solar has often falsely stated at public meeting presentations that they will not use any water to wash their solar panels. This is simply not true. They often build their projects next to dry lakes or other areas where dust is common.

The Amargosa SEZ would be 12 square miles and would create a large visual disturbance. This disturbance would be highly visible from the wilderness areas of Death Valley National Park.

Landscape-level analyses of cultural resources should be undertaken for each SEZ, as well as more detailed archaeological, ethnographic, and historic surveys. A greater effort should be made to contact and follow through coordinating with as many Tribes and local groups as possible.

The Amargosa Valley has a healthy population of Burrowing owls (*Athene cunicularia*). Burrowing owls are declining in much of their range. This is well documented in California: <http://articles.latimes.com/2010/sep/27/local/la-me-burrowing-owl-20100927>

Removing 8 square miles of their habitat in Amargosa Valley would threaten this population.

The Amargosa Valley is not appropriate for a Solar Energy Zone.

Gold Point:

There is no transmission in this area, and it remains a very wild area in Nevada. Gold Point is a popular ghost town. Here is no way to maintain the historic character of this area and develop it for industry at the same time.

There is even less water in this basin than there is in Amargosa Valley. It clearly has no infrastructure or water resources to be developed in an industrial fashion. It seems unusual that the BLM would have even considered this SEZ in the first place.

Millers:

The Solar Reserve, Crescent Dunes Project is being built near the Millers SEZ. The issue of avian mortality was never resolved for this project.

Any more solar power towers of any height should be excluded from Millers SEZ. A potentially serious problem with this type of solar technology, not present in parabolic trough plants, is the superheated beams reflected through the air over the heliostat fields onto the central receiver towers. Migrating or foraging birds have been burned to death flying through these beams. Energy flux amounts as high as 600 kW/square meter at the central receiver. A bird flying through the air will heat up crossing the concentrated solar beams, and could be burned.

The paper AVIAN MORTALITY AT A SOLAR ENERGY POWER PLANT, by Michael D. McCrary, Robert L. McKernan, Ralph W. Schreiber, William D. Wagner, and Terry C. Sciarrotta, Journal of Field Ornithology, 57(2): 135-141, found that Solar 1 in Dagget, California, during 40 weeks of study caused 70 bird fatalities involving 26 species, most from collisions with both heliostats and tower, but thirteen (19%) birds (of 7 species) died from burning in the standby point. Heavily singed flight and contour feathers indicated that the birds burned to death. Six (46%) of these fatalities involved aerial foragers (swifts and swallows) which are apparently more susceptible to this form of mortality because of their feeding behavior. Large 750-foot power towers proposed currently will have more than a thousand standby points encircling the tower receiver, and temperatures should be measured to determine if these will be as dangerous as the two standby points at the former Daggett power tower.

A discussion of how negative affects of collisions and burning by towers during operation will be minimized and mitigated for raptors, migratory species, other birds, and bats flying during the day needs to be included in the FEIS.

Raptors potentially resident or migratory on the site that could be adversely impacted by towers:

- Merlin
- American kestrel
- Prairie falcon
- Peregrine falcon
- Northern harrier
- Swainson's hawk
- Ferruginous hawk
- Rough-legged hawk
- Osprey
- Bald eagle
- Golden eagle
- Sharp-shinned hawk
- Cooper's hawk
- Northern goshawk

In addition, waterbirds and shorebirds may use the ephemeral wetlands at the Millers SEZ area.

The Miller's Rest Stop is a nationally known birdwatching hotspot due to its character as an artificial oasis in a large arid region. Rare birds every year are seen at this spot, and ecotourists travel great distances to observe these rare migrants. Every year new species are added, often

Neotropical migratory birds far off course from their usual range. Tourism in the Tonopah and Dyer areas is boosted by this and may contribute to local economies.



^The above photos show the Crescent Dunes Project under construction. The bottom photo shows how close it is to the Millers Rest Stop.

Polarized Glare:

The polarized, reflection appearance of large photovoltaic facilities assumes the appearance of a large body of water. This can potentially be a death trap. Birds and insects will use up energy to get to perceived water and end up dying of dehydration.

The Nature Conservancy released their Mojave Desert Ecoregional Assessment. In the assessment, they discuss the impacts of polarized light pollution on birds and insects:

“Light and noise pollution associated with electrical power plants can be problematic for wildlife. Polarized light pollution from PV panels can attract aquatic insects and other species that mistake the panels for bodies of water, potentially leading to population decline or even local extinction of some organisms (Horvath et al. 2010). Nighttime lighting for security or other reasons may negatively impact a variety of Mojave Desert species, many of which have developed nocturnal behavior to escape the daytime heat of the desert. (*Mojave Desert*

Ecoregional Assessment September 2010, The Nature Conservancy of California 201 Mission Street, 4th Floor San Francisco, CA 94105) p. 50"



^Polarized "lake effect" from the Copper Mountain Photovoltaic Facility, Nevada

East Riverside:

The East Riverside Solar Energy Zone is the biggest of the SEZ's and even though the BLM reduced the size down from approximately 200,000 acres to 149,000 acres, there are still many unresolved conflicts. Development at this scale threatens biological, cultural, hydrologic and visual resources.

The BLM has modified this SEZ and concentrates most of the main development around the Blythe area. It is frivolous for the BLM to consider letting that much land be released for development.

The following resources would be irreversibly damaged if this much land were allowed to be developed.

Microphyll Woodlands: The BLM and DOE received comments about the significance of McCoy Wash and how it contains ironwood trees that are close to 2,000 years old. As a result of this, McCoy Wash was excluded from this zone, but it appears that the BLM does not understand the concept of cumulative impacts, because the exclusion is only 1 quarter mile wide. All one needs to do is visit this area either by walking or driving on the backcountry roads and you will find that there are numerous microphyll washes that parallel McCoy Wash.



^This is one of countless clusters of microphyll habitat that has been approved for removal and replacement of solar panels in the Solar PEIS

It is a mistake to remove so much of this habitat for photovoltaic panels. Alternatives to destruction of these irreplaceable resources should be examined.

The biological diversity of microphyll habitat should be recognized.

The presence of Desert ironwood in the Colorado Desert increases avian habitat by 62 percent. Over 150 bird species use ironwood. Ironwood also can protect frost sensitive native plants growing beneath them. More than 230 plant species have been documented starting their growth under the protective microclimate of ironwood nurse plants. The ironwood microclimate fixates nitrogen in the soil. Annual wildflowers are abundant under ironwood on wet years.

There are 62 reptiles and amphibians, and 64 mammals that use ironwoods for forage and cover. Close to 250 insects have been recorded using ironwood trees.

We would like the BLM to analyze and attempt to quantify the loss of biological diversity from their proposal. By protecting a narrow sliver of microphyll in the area, what percentage of species and habitat function will be lost and how much will remain with the one percent that is left alone by the BLM?

Birds:

The Solar PEIS designates a very large area by the Colorado River as appropriate for solar energy development. This part of the SEZ is in close proximity to 4 US Fish and Wildlife Service National Wildlife Refuges: Cibola, Bill Williams, Imperial and Havasu. It is also near two globally

Important Bird Areas: Cibola National Wildlife Refuge and Important Bird Area north of the town of Blythe.

Some areas along the Colorado River are used for agriculture. A USFWS refuge manager pointed out that although some of the northern part of Cibola NWR adjacent to the project is currently grown in alfalfa and corn to feed thousands of wintering waterfowl, there is much riparian restoration happening now and planned for the future. This would include encouraging native willows, cottonwoods, and mesquite. Hundreds of acres of riparian tree restoration are planned here.

This part of the SEZ would be located in the Pacific Flyway, which is a migration corridor for diverse waterfowl reaching from the Sea of Cortez in Mexico, to the Salton Sea in Imperial Valley, California, northwards to the Central Valley marshlands, and eventually to Oregon wetlands where ducks and geese nest in summer. An offshoot of the flyway follows the Colorado River.



^Fish and Wildlife Service map of Pacific Flyway

All large solar energy plants will require large tracts of land. The problems with power tower technology are being reviewed by BLM, Fish and Wildlife and the California Energy Commission for the BrightSource Rio Mesa Project. The fact that BrightSource would like to build this project so close to the Colorado River will probably cause the agencies to reject their application.

Parabolic trough and photovoltaic technology could have negative impacts for foraging birds and the polarized effect could disorient avian fauna.

Permitting so much development next to the Colorado River is not appropriate.

Agricultural Lands:

Local people from Blythe have told us that they are worried about all of the agricultural lands being bought up by fly-by-night solar developers. If photovoltaic plants are built, only about 5 to 10 full time jobs are created. This could very well be an economic dead end for the community of Blythe. Boom and bust subsidized energy projects have very little potential to create a sustainable economy.

Cultural Sites/ Archeology Sites:

The East Riverside SEZ contains thousands of cultural/archeology sites. The area around Blythe, California is very rich in cultural resources. The amount of land that would be written off for solar development is not acceptable. It would be impossible to both develop this land and preserve the cultural integrity of the region.

The Blythe area can also be described as a “Living Cultural Landscape” of the Colorado River Tribes who practice their tradition at these sites. We have asked them their opinion about proposed mitigation that would either avoid the sites, but surround them with development, relocating artifacts to museums and destroying artifacts but recording them first. In all cases the answer seems to be that the entire landscape is their “cultural site” and any modifications, with or without mitigation is not appropriate.

A broad area is needed to analyze cultural resources, not just project sites. Landscape scale analysis is needed, including thematic resources: what are the important archaeological information in the landscape? Is the ethnographic landscape still used? Springs, dune systems, mesquite groves should be analyzed for evidence of cultural use, including prehistoric agriculture. Paleoecological data should be analyzed. Are landscapes rare or present in every valley? These would include unique combinations of springs and mesquite groves.

More detailed ethnographic studies are needed, including oral histories from local bands and Tribes of how these landscapes were used. Archival sources are often too limited. How did the Tribes use the resources present? Specific landforms may be considered sacred to local Native people in the area, such as mountains, dunes, and springs. Viewsheds may be important to keep intact. Areas may be part of Storyscapes and Songscapes that continue to be used. Local Native people should be consulted about these potential concerns.

Ivanpah Valley: Nevada and California:

Ivanpah Valley lies in both California and Nevada. It supports a variety of important resources including desert tortoise habitat and connectivity, several rare plants, a rich cultural history and spectacular visual resources.

We would like to request that BLM remove the Ivanpah Valley from all variance and future consideration of any solar projects. Below are some of our main reasons:

1. Ivanpah Valley contains a stronghold population of desert tortoises (*Gopherus agassizii*)
2. As defined in the original Desert Tortoise (Mojave Population) Recovery Plan (1994), the region was within the Northeastern Mojave Recovery Unit for the desert tortoise, one of six designated evolutionary significant units. This population was understood to be genetically the most distinctive unit of the desert tortoise in the Mojave Desert. Northeastern Mojave desert tortoises were recognized as the most genetically distinct population of California's desert tortoises. The range of this population is limited in California and Ivanpah Valley contains a significant portion of this range. When the Recovery Plan was issued, some of the highest known tortoise densities were in southern Ivanpah Valley, with 200 to 250 adults per square mile.
3. In 2010 and 2011, the US Fish and Wildlife Service recommended that no more large scale solar development be approved in the Ivanpah Valley.

The BrightSource Ivanpah Solar Electric Generating System is now under construction. The impacts to the desert tortoise population are alarming.

The following numbers have been determined by private and public biologists working on the Ivanpah Project. The Revised Biological Assessment for the Ivanpah Solar Electric Generating System (ISEGS) Project of April 19, 2011 (prepared for Bureau of Land Management by Sundance Biology, Inc., Kiva Biological Consulting, and CH2MHill) states that 3,344 acres of desert tortoise habitat will be permanently removed, 176 acres more temporarily disturbed.

The revised June 2011 Biological Opinion from USFWS estimates that 51 to 141 adult and subadult tortoises may be found on the ISEGS site while 91 to 391 subadult and adult tortoises may be found on recipient sites where tortoises will be translocated to, a total of 142 to 532 tortoises.

The total number of immature tortoises (under 160 millimeters shell length) that could be impacted may be 891 to 3,236. Juvenile tortoises will suffer an estimated 90% mortality on the project site. And 451 to 1,631 eggs and hatchlings may be impacted by the project activities on site and in the surrounding areas.

Basin and Range Watch has submitted a nomination of the Ivanpah Valley to be considered for an Area of Critical Environmental Concern. The nomination can be viewed here:

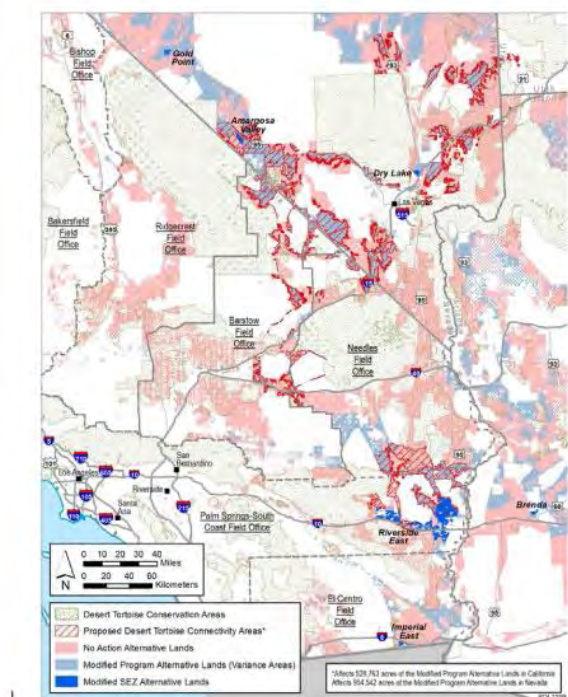
<http://basinandrangewatch.org/Ivanpah-ACEC.html>

The developer, First Solar, has two large applications for future solar development in Ivanpah Valley. The first is called the Stateline Project- a 2,200 acre proposed solar facility that would be sighted directly next to the BrightSource project. The second is the Silver State South Project which is a 13,000 acre Right of Way application. The actual size of the project is yet to be

decided. BLM has informed us that only 4,000 acres of this ROW will be approved, but we are still looking at six square miles of solar panels which would limit or cut off the connectivity of the desert tortoise.

We are hoping that BLM will accept our nomination as an alternative to any more large solar projects located in the Ivanpah Valley.

The PEIS has provided the map (below) which shows connectivity for desert tortoise in the Ivanpah Valley. This alternative excludes all tortoise connectivity zones for solar development. We believe that the BLM should exclude all connectivity corridors from any consideration of future solar development.



2 FIGURE 2.2-2 Desert Tortoise Conservation Areas and Proposed Connectivity Areas

Conclusion:

The PEIS is the wrong direction for land managers to go regarding solar energy. The Interior Department along with some environmental groups are supporting the whole “Smart from the Start” mentality. They want solar developed on what they think are the most disturbed wildlands. It turns out that every solar developer with an application on public lands has exaggerated the level of disturbance on the site they want to build on. We have found valuable

public land resources on every one of these fast tracked or prioritized projects. This is not how we should be managing public lands. Energy can go in the built environment and on degraded lands. Sacrificing public lands with multiple use mandates for one developer is inconsistent with the multiple use philosophy of the Bureau of Land Management. The PEIS is flawed because our alternatives of distributed generation and building solar energy on EPA identified brownfields have been ignored. Legally under the National Environmental Policy Act, you are required to consider these alternatives and you have not.

For a comprehensive description about the right and wrong way to use solar energy, please see Solar Done Right's report, Wrong from the Start. It can be viewed here:

<http://solardoneright.org/images/uploads/WrongFromTheStart.pdf>

We do not believe the PEIS will work. Creating one-stop solar energy zones will not solve transmission issues. Federal subsidies will no longer be available to these developers. The PEIS came about too late to be effective. We believe that the BLM and the DOE should adopt a No Action Alternative and explore a policy that sites solar energy in distributed generation systems and on EPA identified brownfields.

Thank you,

Kevin Emmerich

Laura Cunningham

Basin and Range Watch

P.O. Box 70

Beatty, NV 89003

www.basinandrangewatch.org

Thank you for your comment, Jeremy Drew.

The comment tracking number that has been assigned to your comment is SEDDSupp20063.

Comment Date: January 26, 2012 09:22:05AM
Supplement to the Draft Solar PEIS
Comment ID: SEDDSupp20063

First Name: Jeremy
Middle Initial: L
Last Name: Drew
Organization: N-4 Grazing Board
Address: PO Box 461
Address 2:
Address 3:
City: Panaca
State: NV
Zip: 89042
Country: USA
Privacy Preference: Don't withhold name or address from public record
Attachment: 2012-01-25 ltr Hartmann 11-143.1 N-4 jd-kh L1-23.pdf

Comment Submitted:



N-4 State Grazing Board
P.O. Box 461, Panaca, Nevada 89042
(775) 728-4682



January 25, 2012

Ms Heidi M. Hartmann, Document Manager
Solar Energy Draft programmatic EIS
Argonne National laboratory
9700 Cass Avenue – EVS/240
Argonne, Illinois 60439

Re: Comments to Draft Supplemental Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States

Dear Ms Hartmann:

The N-4 State Grazing Board is a political sub-division of the State of Nevada organized under Nevada Revised Statute 568 Grazing and Ranging. We are pleased to submit the following comments to the Draft Supplemental PEIS for Solar Energy Development (SPEIS). We have participated as a Cooperating Agency in the preparation of the PEIS and look forward to remaining a partner in this national renewable energy endeavor.

The N-4 State Grazing Board has cooperated with the Lincoln County Commission in the preparation of their comprehensive review of the Draft SPEIS. We are in strong support of their four-page cover letter and twenty-one pages of Specific Comments to the Draft SPEIS, sent to you on Wednesday, January 18, 2012 (copy attached for reference).

We are very gratified to see your recommendation that the East Mormon Mountain SEZ and the Delamar SEZ have been dropped from further consideration as a Solar Energy Zone. The reduction in size of the Dry Lake Valley North SEZ is encouraging. The N-4 State Grazing Board specifically supports the Dry Lake Valley North SEZ being 10,000 acres in size and located wholly inside the Ely Springs Cattle Allotment, as requested by the Lincoln County Commission, see attached letter/comments.

It is imperative that the East Mormon Mountain SEZ, the Delamar SEZ, and the Dry Lake Valley North SEZ proposed 67,000, acres except the western 10,000 acres within the Ely Springs Cattle Allotment, be identified as Utility Scale Solar Exclusion Areas. The reviews undertaken in preparation of this SPEIS have identified these areas as unsuitable for utility scale solar development and must therefore be classified as Solar Exclusion Areas. To leave the door open for potential solar variance area would invite significant negative environmental and multiple use

impacts. It would not be possible to avoid or minimize or mitigate these negative impacts to both livestock grazing and existing multiple uses on this public land.

Development of solar energy in the Dry Lake Valley North SEZ in the western most 10,000 acres inside the Ely Springs Cattle Allotment would meet the DOE/BLM renewable energy generation goal. The solar energy created in this one area in Dry Lake Valley North would more than fill the current, and under construction, and three major transmission line projects in the foreseeable future in this valley.

The N-4 State Grazing Board recommends full development of the Dry lake Valley North SEZ of 10,000 acres first before any additional SEZ are developed or any variance areas are opened for development. State and Local input into this entire process is essential to assure quality development and compliance with NEPA and FLMPA requirements. A beneficial step in the right direction would be an energy park in Dry Lake Valley North inside the Ely Springs Cattle Allotment, which provides ready access to the existing Utility Corridors where solar, biomass, geothermal, and biofuel energy generation and transmission would be possible. This Energy Park should be developed with consideration for the training and operation needs of the United States Air Force in this valley.

The N-4 State Grazing Board will not support solar projects located outside the Ely Springs Cattle Allotment in Dry Lake Valley North in Lincoln County, Nevada.

The Draft Supplemental Solar PEIS identifies some 24 pending solar applications in the State of Nevada. The N-4 State Grazing Board recommends review and issuance or denial on each of these pending applications before any new or additional applications are accepted in State of Nevada, and especially the three proposed SEZs located in Lincoln County, Nevada.

It is most important that the planning effort to develop Future Protocols for new solar energy zones being considered have full coordination and consultation with the State of Nevada Energy Office and each Local and County government affected. These new Protocols should contain the requirement that any petition for a new SEZ must contain a statement of support from the State and County impacted.

Coordinating and consulting with the State of Nevada and the local governments involved should be part of the process used when identifying any New Solar Exclusion Areas. The institutional knowledge and expertise available locally will assist in time, money, and resource savings when this consultation takes place before the rule making, or site selection is made.

The N-4 State Grazing Board recommends reorganizing the five steps currently discussed in Appendix D "Future Protocols":

1. Assessing the Need for new SEZs,
2. Technical and Economic Feasibility,
3. Environmental Screening,
4. Other Additional Locally Relevant Screening, and
5. NEPA compliance.

Ms Heidi M. Hartmann

January 25, 2012

Page 3

We believe Local Involvement should be within the first TWO steps, preferably Step One, which would save all parties time, money, and resources. This should include working with grazing allotment permittees to explore ways to avoid or minimize impacts to existing grazing operations within the allotments where solar development is being considered. We do not support the current approach of notifying grazing permittees that some or all of their permit may be canceled to make way for solar development, as described in Section 2.2.1.1, page 2-5, lines 35-45. This approach is unacceptable to the N-4 Grazing Board and is contrary to the BLM's Multiple Use Mandate.

We urge you to make "Environmental Screening" Step Two. If sufficient environmental concerns are identified, it is certain there will be no need for the technical and economic feasibility studies, again saving time, money, and resources all around. Preparing the environmental screening in the Second Step would help identify the potential interference by the new SEZ with current multiple uses.

We suggest that at least one of the pre-scoping meetings be held inside the county most affected by this new proposal. We encourage the reduction to the greatest extent possible of the proposed project footprint.

We look forward to working with you in the future on our National Energy Independence goals. We advocate safeguarding No Net Loss of Grazing by using site-specific energy project locations with technology specific projects. Together we can do it. Please feel free to contact us for any information you may need.

Thank you,



Connie Simkins, Secretary
N-4 State Grazing Board
For Gracian Uhalde, Chairman

CS:kh

Enclosures: Lincoln County Commission Letter and Comments dated January 17, 2012

Thank you for your comment, Joshua Hart.

The comment tracking number that has been assigned to your comment is SEDDSupp20064.

Comment Date: January 26, 2012 11:49:49AM
Supplement to the Draft Solar PEIS
Comment ID: SEDDSupp20064

First Name: Joshua
Middle Initial: J
Last Name: Hart
Organization: Inyo County
Address: PO Drawer L
Address 2:
Address 3:
City: Independence
State: CA
Zip: 93526
Country: USA
Privacy Preference: Don't withhold name or address from public record
Attachment: SolorPEISCommentletter1-17-12final.pdf

Comment Submitted:

Please find attached comments from the Inyo County Board of Supervisors.



BOARD OF SUPERVISORS COUNTY OF INYO

P. O. BOX N • INDEPENDENCE, CALIFORNIA 93526
TELEPHONE (760) 878-0373 • FAX (760) 878-2241
e-mail: pgunsolley@inyocounty.us

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KEVIN D. CARUNCHIO
Clerk of the Board

PATRICIA GUNSOLLEY
Assistant Clerk of the Board

January 17, 2012

Supplement to the Draft Solar Energy PEIS
Argonne National Laboratory
9700 S. Cass Avenue – EVS/240
Argonne, IL 60439

Re: Comments on Supplement to the Draft PEIS for Solar Energy
Development in Six Southwestern States

Dear Gentlemen/women:

Inyo County has reviewed the Supplement to the Draft PEIS for Solar Energy Development in Six Southwestern States, and would like to take this opportunity to make the following comments on the document. We have previously requested coordination with the BLM to address and resolve inconsistencies with the Inyo County General Plan and approved policies pursuant with 43 CFR 1610.3-1(f) and we have not received a response; we reiterate this request.

Inyo County has commented a number of times on the fact that there are no Solar Energy Zones (SEZ) identified or planned for areas within the County. The County is, therefore, particularly supportive of comments within the Supplement that document provisions for added solar development opportunities. Specifically, the County supports:

- BLM's Efforts to Identify New SEZs: Section 2.2.2.2.5 notes that the "BLM intends to identify new SEZs and/or expand existing SEZs on an as-needed basis. The BLM has already initiated efforts to identify new SEZs in the states of California, Arizona, Nevada, and Colorado through ongoing state-based efforts..."
- Variance Process for Development Outside SEZs: Section 2.2.2.3.1 details a variance process which would allow utility-scale solar development outside of SEZs or other exclusion areas.

The County is supportive of both of the above-noted efforts, as they provide a way for areas within the County to be included as identified SEZ development zones, or, alternatively, provide a way for solar development to take place within the County, lacking any SEZ-identified zones through the PEIS process.

Also significant and important to the County – and which the County has commented on previously – is the fact that the Supplement notes that "the modified program alternative (BLM Preferred Alternative) emphasizes and incentivizes development within SEZs and proposes a collaborative process to identify additional SEZs" (p. 2-14). Inyo County looks forward to taking an active role with BLM in identifying additional new SEZ areas in the County.

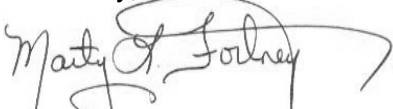
There is one section of the PEIS that is particularly troubling. Large portions of Inyo County are proposed for exclusion from solar development. These areas include lands that surround Pearsonville and Trona, and land within Rose Valley, Panamint Valley and Centennial Flat. Inyo County has identified each of these areas as having excellent potential for solar development. Excluding these areas from such development is directly contrary to specific policies of the County's General Plan, its fundamental planning document.

(Refer to the following Inyo County General Plan references: Goal ED-4, Goal Gov-10, Policy Gov-10.1)¹ County staff has communicated its concerns to the BLM, but BLM staff has been unable to explain why these areas are given Special Recreation Management Area designations, nor has it explained what criteria qualify areas with this designation for exclusion. This is vital information to the County, so that staff can identify ways to achieve consistency between BLM and County plans.

It is the County's position that finalizing the PEIS as currently proposed would be a direct violation of the BLM's duty to coordinate its planning efforts with Inyo County's planning documents, as directed by 43 CFR 1610.3-1 (c),(d) and (e). It is the County's understanding that BLM staff must identify where there are inconsistencies between federal and local plans, ensure that the plans are as consistent as possible, consult with the local government, in this case Inyo County, regarding the inconsistencies and the means to resolve those inconsistencies, and if consistency cannot be achieved, explain in the management plan how the inconsistencies were addressed and why they could not be resolved. Inyo County cannot support a plan that excludes large areas of the County from beneficial development, particularly where the necessity of that exclusion is unexplained.

Inyo County appreciates the opportunity to comment on the PEIS, but expects to engage directly with BLM staff for an explanation as to why these portions of the County are completely excluded from reasonable solar development. Until such coordination occurs, the County believes adoption of the PEIS would be unlawful.

Sincerely,

A handwritten signature in dark ink, appearing to read "Marty Fortney", with a stylized flourish extending to the right.

Supervisor Marty Fortney, Chairperson
Inyo County Board of Supervisors

cc: Greg Miller, Renewable Energy Program Mgr., BLM California Desert District
Clare Laufenberg Gallardo, California Energy Commission
Board of Supervisors, Inyo County
Kevin Carunchio, County CAO
Randy Keller, County Counsel
Joshua Hart, Inyo County Planning Director

¹ Refer to http://inyoplanning.org/general_plan/index.htm for the County's General Plan.

Thank you for your comment, cassie barr.

The comment tracking number that has been assigned to your comment is SEDDSupp20065.

Comment Date: January 26, 2012 12:01:38PM

Supplement to the Draft Solar PEIS

Comment ID: SEDDSupp20065

First Name: cassie

Middle Initial: g

Last Name: barr

Organization: Sierra Club Wilderness Sub-Comm

Address: SF Bay Chapter

Address 2:

Address 3:

City: SF Bay Chapter

State: CA

Zip:

Country: USA

Privacy Preference: Don't withhold name or address from public record

Attachment:

Comment Submitted:

I want the preferred Solar Zone Alternative in the PEIS and please keep the Variances to protect desert wilderness systems.

Thank you for your comment, Paul Cook.

The comment tracking number that has been assigned to your comment is SEDDSupp20066.

Comment Date: January 26, 2012 12:06:05PM

Supplement to the Draft Solar PEIS

Comment ID: SEDDSupp20066

First Name: Paul

Middle Initial:

Last Name: Cook

Organization: California State Assembly

Address: 34932 Yucaipa Blvd.

Address 2:

Address 3:

City: Yucaipa

State: CA

Zip: 92399

Country: USA

Privacy Preference: Don't withhold name or address from public record

Attachment: 01-25-12 Solar PEIS Supplement.pdf

Comment Submitted:

My comments are attached in a PDF document.

STATE CAPITOL
P.O. BOX 942849
SACRAMENTO, CA 94249-0065
(916) 319-2065
FAX (916) 319-2165
DISTRICT OFFICE
34932 YUCAIPA BLVD.
YUCAIPA, CA 92399
(909) 790-4196
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assemblymember.cook@assembly.ca.gov

Assembly California Legislature



PAUL COOK
ASSEMBLYMEMBER, SIXTY-FIFTH DISTRICT

COMMITTEES
VETERANS AFFAIRS, CHAIR
ACCOUNTABILITY AND
ADMINISTRATIVE REVIEW
GOVERNMENTAL ORGANIZATION
SUNSET REVIEW

January 25, 2012

Solar Energy Draft PEIS
Argonne National Laboratory
9700 South Cass Avenue
EVS/240
Argonne, IL 60439

RE: Solar PEIS Supplement

To Whom It May Concern:

I represent the 65th Assembly District in the California State Legislature. My district includes portions of Joshua Tree National Park and the San Bernardino County desert communities of Yucca Valley, Joshua Tree, and Twentynine Palms. I am also a longtime resident of Yucca Valley. As you can imagine, I have a considerable amount of interest regarding the proposed Solar PEIS Supplement and how it will affect these communities.

While I support the effort to invest in a renewable energy future to create jobs and ensure energy independence, I believe that it must be done in a manner that does not jeopardize our local tourist economy, national parks, and wilderness lands.

The original Solar PEIS study, whose comment period closed last year, received over 80,000 comments from community stakeholders and organizations. These comments improved the new Solar PEIS Supplement, particularly in terms of protecting the resources of Joshua Tree National Park, which is linked inextricably to our local economy. In the supplement, there were improvements in the configuration of some of the proposed solar energy zones (SEZ), areas designated through extensive research and a comprehensive process that had a low potential for resource conflict. For example, the Iron Mountain SEZ was eliminated because of its sensitive ecological resources, lack of transmission lines, and proximity to Joshua Tree National Park. The Riverside East SEZ was decreased in size by 43,439 acres, which moved its border a substantial distance from the eastern boundary of Joshua Tree National Park.

However, the preferred alternative in the new Solar PEIS Supplement not only guides solar development into low conflict SEZs that have been identified through extensive research and stakeholder input, but also establishes a variance process that will allow development of projects outside of established SEZs on a case-by-case basis. This variance allowance affects over 20 million additional acres of public land. Further, the variance process is incongruous with the designation, process, and purpose of SEZs. I am writing to ask that you protect Joshua Tree National Park and our gateway communities by not allowing solar development on variance land. Additionally, if the preferred alternative with the variance land is adopted, I respectfully request that land in immediate proximity (5 miles) to Joshua Tree National Park be removed from consideration for solar energy project development.

As proposed in the Solar PEIS Supplement, large areas of variance land east of Twentynine Palms and the Marine Corps Air Ground Combat Center would be subject to solar development. Such development of these areas could potentially undermine tourism by unnecessarily denigrating the natural resource value of Joshua Tree National Park. A 2010 University of Idaho survey of Joshua Tree National Park visitors discovered that 90 percent favored maintaining the pristine views currently available at the park over solar development. That same year, the 1.4 million visitors to Joshua Tree National Park generated nearly \$60 million in revenue for local gateway communities. Solar development on variance lands would likely interfere with a key reason visitors come to our area: scenic vistas and beautiful wildlife.

Finally, I believe that the length and highly technical nature of the Solar PEIS Supplement report merit an extension of 90 days for the public comment period. The original Solar PEIS report was over 11,000 pages and the Solar PEIS Supplement report, albeit shorter, is still an extremely lengthy and comprehensive document. This report contains extensive scientific data on environmental issues, cultural resources, and regulatory information. It is imperative stakeholders have sufficient time to analyze this information and make meaningful comments, which will ultimately ensure a sound and democratic process.

Sincerely,



Paul Cook
Assemblyman, 65th District

Thank you for your comment, Renee Castor.

The comment tracking number that has been assigned to your comment is SEDDSupp20067.

Comment Date: January 26, 2012 12:12:16PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDSupp20067

First Name: Renee
Middle Initial: W
Last Name: Castor
Organization: Desert Center Area Chamber of Commerce
Address: PO Box 502
Address 2:
Address 3:
City: Desert Center
State: CA
Zip: 92239
Country: USA
Privacy Preference: Don't withhold name or address from public record
Attachment:

Comment Submitted:

To whom it may concern;

I am concerned that the effect on the town of Desert Center and its residents has not been addressed.

The initial planned build for the solar farms starts in the middle of the Desert Center community. With 50 miles of unpopulated area between Blythe and Desert Center it is inconsiderate to start in the middle of the populated area. You have no buffer zones planned between housing and solar arrays. The Town of Desert Center has plans for growth to help support the influx of people to be employed during the build process of these arrays, however if you build the solar farms here first we won't be able to encourage business to move in to support your working staff.

We want to know why you chose to build in town first? Why you have no buffer zones planned between residential housing and businesses? How do you expect us to support housing and amenities for the influx of workers if solar fills every available piece of land within a 5 mile radius of town? Would it not be cheaper for the solar farms to not have to bus their staff everyday. Would it not be better PR for BLM and the DOE to allow the town to work in partnership with the solar companies rather than build animosity and threatened law suits by starting the build out 5 miles east of town allowing the time and room to grow and build to support the workers that will be coming in for these solar farms?

You already know the saline content in the water is too high to support the thermal solar system you originally planned so starting there because of the water is not an excuse any more. The voltaic panels work just fine for the land between Blythe and Desert Center.

We are asking you to work with the Desert Center Area Chamber of Commerce to accommodate the solar farms and the hundreds of workers it will bring to our valley. We can work in partnership if you could understand it is a mutual need. Will you work with our community and move some of these solar projects just 5 miles east of the center of the valley so we can accommodate the influx of people? Will you work in conjunction with us or would you rather this be dragged out in an unnecessary legal battle?

You are more than welcome to come and attend a Chamber meeting. The first Wednesday of each month at 6pm or call and arrange a meeting with the chamber officers.

Thank you for your time,

Renee W Castor
760-485-8060

Thank you for your comment, Philip Simon.

The comment tracking number that has been assigned to your comment is SEDDSupp20068.

Comment Date: January 26, 2012 12:48:40PM

Supplement to the Draft Solar PEIS

Comment ID: SEDDSupp20068

First Name: Philip

Middle Initial:

Last Name: Simon

Organization:

Address: box 9473

Address 2:

Address 3:

City: San Rafael

State: CA

Zip: 94912

Country: USA

Privacy Preference: Don't withhold name or address from public record

Attachment:

Comment Submitted:

I support the BLM preferred solar zone alternative for solar development applications. Also, "variances" for solar development outside of solar energy zones should be limited and additional exclusion areas should be added to ensure that our most important habitat and ecosystems are protected from solar development.

Thank you for your comment, Cree Rivera.

The comment tracking number that has been assigned to your comment is SEDDSupp20069.

Comment Date: January 26, 2012 13:27:25PM

Supplement to the Draft Solar PEIS

Comment ID: SEDDSupp20069

First Name: Cree

Middle Initial:

Last Name: Rivera

Organization:

Address: 7186 Saddle back road

Address 2:

Address 3:

City: JT

State: CA

Zip: 92252

Country: USA

Privacy Preference: Don't withhold name or address from public record

Attachment:

Comment Submitted:

i want an extension to respond to Solar PEIS. I am completely against doing anything that affects the wildlife, environment or any resources negatively.

thank you

Thank you for your comment, Don Boering.

The comment tracking number that has been assigned to your comment is SEDDSupp20070.

Comment Date: January 26, 2012 13:38:43PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDSupp20070

First Name: Don
Middle Initial: L
Last Name: Boering
Organization: Yucca Mesa Home Owner
Address: [Withheld by requestor]
Address 2:
Address 3:
City: [Withheld by requestor]
State: [Withheld by requestor]
Zip: [Withheld by requestor]
Country: [Withheld by requestor]
Privacy Preference: Withhold address from public record
Attachment:

Comment Submitted:

Solar Plan Comment Period Extension Request concerning the deadline for public comments regarding the additional 20 million acres of “preferred” or “variance” lands for industrial solar fields in the high desert, east of Twenty-Nine Palms and the area between the Marine Corp Training HQs and the Nevada state line.

Please extend this comment period so that myself and others may review the paperwork. Also, PLEASE put me on your email AND snail mail address for all updates and notices of public meetings.

don boering
yucca valley, ca.

Thank you for your comment, Janna Perry.

The comment tracking number that has been assigned to your comment is SEDDSupp20071.

Comment Date: January 26, 2012 13:41:05PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDSupp20071

First Name: Janna
Middle Initial: k
Last Name: Perry
Organization:
Address: 77130 29 Palms Hwy
Address 2:
Address 3:
City: Twentynine Palms
State: CA
Zip: 92277
Country: USA
Privacy Preference: Don't withhold name or address from public record
Attachment:

Comment Submitted:

As I live in Wonder Valley the area of the added variance lands I would like a public debate regarding this issue. This will directly impact my property. and quality of life.

Thank you for your comment, Cristina Cabeza-Kinney.

The comment tracking number that has been assigned to your comment is SEDDSupp20072.

Comment Date: January 26, 2012 13:56:17PM

Supplement to the Draft Solar PEIS

Comment ID: SEDDSupp20072

First Name: Cristina

Middle Initial: M

Last Name: Cabeza-Kinney

Organization:

Address: POB 543

Address 2:

Address 3:

City: Crestone

State: CO

Zip: 81131

Country: USA

Privacy Preference: Don't withhold name or address from public record

Attachment:

Comment Submitted:

I speak for distributed solar as an answer to our energy crises. We are in global crises because of corporate take over of the things that are our inherent right: food, shelter, water, energy, livelihood. As a valley in a time of critical mass, it is imperative that we think globally and act locally. I live in this valley because it is remote and limited intrusion. Industrial solar has the potential to interfere with my/our deeply held beliefs about this place. Rethink this as we all are rethinking everything....TOO, TOO BIG!! The emerging models are going to simpler...let's be in alignment with what the future is showing us...how can we sustain for the future generations? How can we use our ingenuity to make more efficient, locally owned/maintained systems? Please reconsider...

Thank you for your comment, Janine Blaeloch.

The comment tracking number that has been assigned to your comment is SEDDSupp20073.

Comment Date: January 26, 2012 14:24:05PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDSupp20073

First Name: Janine
Middle Initial:
Last Name: Blaeloch
Organization: Solar Done Right
Address: c/o PO Box 95545
Address 2:
Address 3:
City: Seattle
State: WA
Zip: 98145
Country: USA
Privacy Preference: Don't withhold name or address from public record
Attachment: SUPP DPEIS FINAL.pdf

Comment Submitted:

Solar Done Right comments attached

SOLAR DONE RIGHT



Contact: Janine Blaeloch,
Western Lands Project and Solar Done Right
blaeloch@westernlands.org

To: US Bureau of Land Management
Supplemental Draft Solar PEIS Comments
Argonne National Laboratory
9700 S. Cass Avenue, EVS/240
Argonne, IL 60439

Submitted electronically via: <http://solareis.anl.gov/involve/comments/index.cfm>

January 27, 2012

RE: Comments on the Supplemental Draft Solar Programmatic Environmental Impact Statement

To whom it may concern:

On behalf of Solar Done Right, its members and associates, we submit the following comments on the Supplemental Draft Solar Programmatic Environmental Impact Statement (DPEIS).

These comments also constitute those, each and collectively, of the Western Lands Project, Basin & Range Watch, the Desert Protective Council, Desert Biodiversity, and the San Luis Valley Renewable Communities Alliance, all of which are founding organizations in the Solar Done Right coalition.

Solar Done Right and its affiliates hold that there is a proper hierarchy of priority for strategies to end our nation's addiction to fossil fuels. We should begin the transition by using the most cost-effective strategies for renewable energy production, which also happen to be the least environmentally destructive.

In descending order of priority:

- **Reduce demand.** According to some estimates, an aggressive program of conservation and energy efficiency using currently available technology could reduce US power consumption by one third or more. A recent efficiency regulation on power cords for electronics chargers in the state of California is projected to save as much power as that used by 350,000 homes each year. The Rocky Mountain Institute estimates that the application of California's efficiency standards nationwide could reduce coal burning by two thirds or more.

- **Generate renewable energy at a smaller scale (1 to 100kW) at or near the point of use.** Distributed solar generation on homes and businesses is cost-competitive, more reliable, and does not incur line losses or heat-related reductions in output. Such losses may equal or exceed any increased insolation found at remote sites, so (net) capacity factors in urban load centers are similar to those of large desert installations. Installation time for local projects is measured in weeks rather than years. Ratepayers benefit through improved property values, reduced utility bills and/or sales of power into the grid. Germans installed 2,000 MW of rooftop solar in December 2011 alone, thanks to a feed-in tariff that has proven to be a dramatic success.
- **Generate renewable energy on a larger scale (100kW-20 MW) within the built environment.** Most cities and counties possess large industrial spaces including warehouse roofs, brownfields, large parking lots, airports, depleted and fallowed agricultural lands, and other areas that could be either converted to or augmented with renewable energy production using the same modular technology used for remote industrial solar-PV. Emerging technologies offer promise for additional methods to incorporate solar energy production into new residential and commercial construction and store power cleanly and efficiently. These projects have the additional benefit of being appropriately sized and serving as “community solar gardens,” which could ameliorate some of the social and economic inequities our energy infrastructure perpetuates.

It should be noted that a focus on both large- and small-scale distributed generation in the built environment is anticipated to create many more jobs than the remote, centralized model now being pursued. A UC Berkeley study published in 2010 concluded that if California instituted a feed-in tariff for projects up to 20 MW in order to achieve its Renewable Portfolio Standard, it would create 3 times as many jobs as without, and would result in \$2 billion in tax revenues and billions in new investment.

The approach described above can meet our electrical energy needs without sacrificing biologically valuable desert and grassland ecosystems with large-scale solar power plants.

Should these common-sense methods fail to meet our society's long-term demand for renewable energy, centralized solar power plants should be the very last resort, and sited only on available disturbed, degraded and contaminated lands that offer little carbon sequestration, wildlife habitat or other natural resource values.

Supplement offers no improvement

A fundamental error in the Administration's approach to renewable energy has been to assign a 21st-century task to a Department of Interior that still resides in the 19th century. This choice not only perpetuates the error of using public lands as a sacrifice area for industrial exploitation, it denies this country the opportunity to swiftly implement effective and environmentally sound renewable-energy systems.

With 253 million acres in BLM-managed lands alone, it may seem that the public lands, and their potential for use, are endless. Yet much of this area is already damaged or fragmented by mining, urban encroachment, roads, oil and gas operations, transmission, wind and geothermal developments, livestock grazing, motorized recreation, and other uses. Large, contiguous areas that retain their ecological integrity are increasingly rare, and yet these areas are acutely threatened by large-scale uses such as industrial solar, which will essentially privatize the land and convert healthy and resilient multiple-use lands into single-use, permanent industrial zones.

The Bureau of Land Management's outmoded, entrenched, dangerously utilitarian approach to our public land is nowhere better demonstrated than in its refusal to put meaningful restrictions on the territory it makes available to industrial-scale solar developers.

The purported improvements introduced in the Supplement are rendered meaningless by the fact that the overall amount of public land kept available in the agency's Preferred Alternative is reduced by only 6 percent--from 21,581,154 acres to 20,324,863 acres.

Yet even if the BLM were to select the Modified Solar Energy Zone alternative--reduced from 677,384 acres to 285,417 acres, it would be unacceptable. Considering the damage to desert sites, concomitant transmission requirements, and the fact that far superior alternatives exist, there is simply no reason to wage this industrial-scale assault on public lands.

This course poses great peril to our rich desert ecosystems, to ratepayers, and to taxpayers—who are unwittingly acting against their own interests by footing the bill through subsidies (amounting so far to about \$10.5 billion just in federal loan guarantees) and the myriad, cascading, externalized costs that will flow from this policy.

BLM has no mandate

The drive for solar development on public lands has been predicated on what the BLM and others repeatedly refer to as a “mandate” in the 2005 Energy Policy Act (PL 109-58). Yet the short provision regarding renewable energy on public lands in the legislation (Section 211) aspires to but does not require action:

"It is **the sense of the Congress** that the Secretary of the Interior **should**, before the end of the 10-year period beginning on the date of enactment of this Act, seek to have approved non-hydropower renewable energy projects located on the public lands with a generation capacity of at least 10,000 megawatts of electricity. "

The difference between a sense of Congress and a mandate goes beyond semantics. A sense of Congress resolution has no force of law. And while that does not render the provision irrelevant, neither does it provide the mandate upon which the Administration has built its public land-focused renewable energy policy and upon which the Secretary of Interior has based the PEIS.

Amended Federal Order 3285A1, issued by DOI Secretary Salazar on February 22, 2010, is also cited as the basis for using public lands for solar development. The Order takes its authority from the Energy Policy Act of 2005 (Section 3) and therefore also constitutes a DOI policy choice,

rather than a legally binding Order. Nevertheless, the Order states that “as the steward of more than one-fifth of our Nation’s lands,” the department has a significant role in coordinating and ensuring environmentally responsible renewable energy production....” The Order clearly states that the department should pursue solar leasing “while protecting and enhancing the Nation’s water, wildlife, and other natural resources.”

Given the significant impacts from large-scale concentrating solar that cannot be mitigated, the goal of “protecting and enhancing the Nation’s water, wildlife, and other natural resources” while implementing large scale “environmentally responsible” solar development, cannot be met through any of the alternatives being analyzed in the Supplemental DPEIS.

BLM’s scope, purpose, need, and alternatives are unreasonably narrow

The National Environmental Policy Act (NEPA) requires agencies to “[r]igorously explore and objectively evaluate all reasonable alternatives.” 40 C.F.R. § 1502.14. The courts have found that “The `existence of a viable but unexamined alternative renders an environmental impact statement inadequate.’” And that the “touchstone for our inquiry is whether an EIS’s selection and discussion of alternatives fosters informed decision-making and informed public participation.”

As defined in both the DPEIS and the Supplement, the BLM’s scope is to analyze “use of multiple solar energy technologies at utility-scale over the next 20 years on lands within six southwestern states,” and its purpose and need, “to respond to the high interest in siting utility-scale solar energy development on public lands.” But the scope, purpose and need, and alternatives are all far too narrow to foster **informed** decision-making and public participation.

Truly informed decision-making and public involvement require an analysis of alternatives encompassing massively deployed PV in the built environment as well as siting solar development on the nation’s millions of acres of disturbed, degraded, and contaminated lands.

The far saner and more effective alternative to public lands and ecosystem destruction is distributed generation-- solar PV installed on commercial and residential rooftops, parking lots, highway easements, and virtually any site in the built environment that has suitable space.

In addition, it is known that there are suitable sites for solar energy developments on a wide array of damaged, degraded, previously developed, and contaminated lands. The Environmental Protection Agency (EPA) Office of Solid Waste and Emergency Response has been identifying abandoned mine lands, brownfields, Resource Conservation and Recover (RCRA) sites, and federal and non-federal Superfund sites that may be suitable for solar and other non-fossil-fuel energy projects. This program, RE-Powering America’s Lands, should have been front and center in the PEIS.

In its original scoping letter on the Programmatic EIS, EPA pointed out the efficacy of siting renewables on hundreds of thousands of acres of contaminated sites around the country. Following the same methods used by the National Renewable Energy Lab to identify suitable concentrating solar generation sites, EPA has identified a “technical potential” of 920,000 MW of solar generation.

In addition to citing the EPA program, in our DPEIS comment letter we listed numerous other efforts that have pinpointed damaged, developed, or contaminated public and private lands suitable for solar development, adding up to about 380,000 acres just in California.

Instructional Memorandum No. 2011-059i issued by the Director of the BLM acknowledges that in limited circumstances the agency may choose to evaluate a non-federal land alternative or different technology alternative raised through scoping, “to the extent necessary to support a decision regarding the pending application.” The BLM’s dismissive stance regarding alternatives to its own narrow proposals, however, suggests that this would be used exclusively to argue for the superiority of the public-land, remote, concentrated solar projects it favors. To comply with NEPA, the BLM must analyze these sites and technologies as the legitimate, far superior, alternatives they are.

BLM must look outside its jurisdiction

The DC Circuit Court of Appeals has found an EIS inadequate for failing to consider eliminating oil import quotas as an alternative to the sale of oil leases on the Outer Continental Shelf, even though the alternative was outside the jurisdiction of Interior. No PEIS was prepared in that instance, but here there is an even stronger case to consider broader alternatives, as a PEIS is meant to address broader policy decisions rather than a specific proposed action.

As the Council on Environmental Quality has stated,

"Section 1502.14 [of the NEPA regulations] requires the EIS to examine all reasonable alternatives to the proposal. In determining the scope of alternatives to be considered, the emphasis is on what is "reasonable" rather than on whether the proponent or applicant likes or is itself capable of carrying out a particular alternative. Reasonable alternatives include those that are practical or feasible from the technical and economic standpoint and using common sense, rather than simply desirable from the standpoint of the applicant.

And,

An alternative that is outside the legal jurisdiction of the lead agency must still be analyzed in the EIS if it is reasonable. A potential conflict with local or federal law does not necessarily render an alternative unreasonable, although such conflicts must be considered. Section 1506.2(d). Alternatives that are outside the scope of what Congress has approved or funded must still be evaluated in the EIS if they are reasonable, because the EIS may serve as the basis for modifying the Congressional approval or funding in light of NEPA's goals and policies. Section 1500.1(a).

Conclusion

In addition to turning to degraded, contaminated sites, there is vast potential to get outmoded, environmentally damaging solar off public lands in the alternative of distributed generation through solar PV installations in the built environment.

The PEIS dismisses alternatives such as distributed generation on the basis of defining the purpose and need as “[responding] in a more efficient and effective manner to the high interest in siting utility-scale solar energy development on public lands.” This purpose and need statement, and the alternatives formulated for it, are inappropriately focused on serving corporate interests rather than on the urgent need to reduce our reliance on fossil fuels in the least damaging, most affordable and sustainable way.

The PEIS process has cost millions of public dollars, absorbed the time and energy of thousands of people, and yet has utterly failed to move us one inch closer to an effective, efficient, environmentally responsible renewable-energy policy.

We call on the BLM to either expand its analysis away from industrial-scale development on public lands or relinquish its role as the ill-chosen standard bearer for renewable energy.

Sincerely,



Janine Blaeloch, Western Lands Project

On behalf of Solar Done Right co-founding organizations and affiliates:

Terry Weiner, Desert Protective Council

Bill Powers, Powers Engineering

Laura Cunningham and Kevin Emmerich, Basin & Range Watch

Chris Clarke, Desert Biodiversity

Ceal Smith, San Luis Valley Renewable Communities Alliance

Sheila Bowers

Jim Andre

Thank you for your comment, Linda Joseph.

The comment tracking number that has been assigned to your comment is SEDDSupp20074.

Comment Date: January 26, 2012 14:47:25PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDSupp20074

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Last Name: Joseph
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Privacy Preference: Don't withhold name or address from public record
Attachment: BLMSolar-PEIS-1-12.pdf

Comment Submitted:

Saguache County is pleased to be a Cooperating Agency in the PEIS process, and respectfully submits these comments on the Supplement.



SAGUACHE COUNTY GOVERNMENT

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Saguache, Colorado 81149

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January 23, 2011

Solar Energy PEIS
Argonne National Laboratory
9700 S. Cass Avenue, EVS/240
Argonne, IL 60439

Dear Ms. Stewart,

Saguache County is pleased to be a Cooperating Agency with the Department of Energy (DOE), the Department of the Interior (DOI), and Bureau of Land Management (BLM), on the Solar Energy Development Programmatic Environmental Impact Statement (Solar PEIS). The Saguache County Board of County Commissioners (Board) is writing to comment on Supplement to the Draft Solar Energy Programmatic Environmental Impact Statement. We would like to extend our appreciation and congratulations on the many changes in this iteration in response to public input to date.

We are pleased with and support the ongoing development of several key areas of local concern, as presented in the preferred alternative in the supplement, such as -

“2.2.1.2 Adaptive Management and Monitoring

As described in the Draft Solar PEIS (Appendix A, Section A.2.1.1 of that document), the BLM (recognizing that data regarding the actual impacts of solar energy development on various resources are still limited) will develop and incorporate into its Solar Energy Program an adaptive management and monitoring plan to ensure that data and lessons learned about the impacts of solar energy projects will be collected, reviewed, and, as appropriate, incorporated into the BLM's Solar Energy Program in the future. Changes to the BLM's Solar Energy Program resulting from adaptive management and monitoring (e.g., modifications to exclusion areas) will be subject to appropriate land use planning, environmental review, and/or policy development.”

“2.3.1 Impacts of the Modified Solar Energy Development Program Alternative

As an element of the proposed program, the BLM would implement an adaptive management and monitoring plan for solar energy development developed in coordination with potentially affected natural resource management agencies, to ensure that new data and lessons learned about the impacts of solar energy projects would be reviewed and, as appropriate, incorporated into the program through revised policies and design features (see Section 2.2.1.2 of this Supplement). Changes to the BLM's Solar Energy Program will be subject to appropriate environmental analysis and land use planning.”

Given the prototype nature of solar technology, and unprecedented large-scale, long-term impacts - adaptive monitoring and management, and attention to Design Features (section 2.2.1.3), are prudent strategies, which allow and encourage best practices to emerge collaboratively, as experience is gained, and the industry, technologies and mitigation measures progress.

“2.2.2.2 Proposed Solar Energy Zones

The BLM will continue to refine the list of SEZ-specific design features based on comments received on the Draft Solar PEIS, ongoing coordination with cooperating agencies, additional data collection described in SEZ action plans, and comments received on this Supplement.”

The Saguache County Board of Commissioners works closely with our local and regional Public Lands Managers, and, wishes to serve as a Cooperating Agency with the local BLM in the site-specific NEPA process for development applications at the DeTilla Gulch SEZ, or other areas in our County, should any be selected for development. The changes made in the PEIS Supplement effectively addresses concerns we shared previously about this location, which lies within our County near the County seat, the Town of Saguache. At any given time, there may be County, town and Valley land use plans of various types, pertinent to BLM Solar development. This is the knowledge the County brings to the table, as a Cooperating Agency. Counties have a role in the designation process for future solar energy zones, within their jurisdictions.

“3.2 ACTION ALTERNATIVE—DOE’S PROPOSED PROGRAMMATIC 23 ENVIRONMENTAL GUIDANCE, 3.2.1 General Mitigation Measures”

The final plan should emphasize siting projects in low conflict zones and avoiding development on public lands that are essential for wildlife, recreation, tourism and other uses by local residents and visitors.

Thank you - for this opportunity to participate as a Cooperating Agency; for your consideration of our comments; and, for the time and tremendous effort devoted to developing the Solar PEIS.

Sincerely,

Saguache County Commissioners



Sam Pace



Mike Spearman, Chair



Linda Joseph

Thank you for your comment, Teresa Motley.

The comment tracking number that has been assigned to your comment is SEDDSupp20075.

Comment Date: January 26, 2012 15:20:42PM

Supplement to the Draft Solar PEIS

Comment ID: SEDDSupp20075

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Attachment: Solar Energy Draft PEIS filing_01-26-12_CCDOA Comments on Supplemental Draft Solar Energy PEIS..pdf

Comment Submitted:



Department of Aviation

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January 26, 2012

VIA ELECTRONIC SUBMISSION

<http://solareis.anl.gov>

Solar Energy Draft PEIS
Argonne National Laboratory
9700 S. Cass Avenue – EVS/240
Argonne, IL 60439

RE: Clark County, Nevada Department of Aviation Comments on the Supplement to the Draft Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States

Dear Staff:

The Clark County, Nevada Department of Aviation (CCDOA) previously filed scoping comments in response to the May 29, 2008 Notice of Intent for the Programmatic Environmental Impact Statement (PEIS) related to solar energy development on Bureau of Land Management (BLM)-administered land in six western states. On September 14, 2009, CCDOA filed comments on Additional Public Scoping for the PEIS to Develop and Implement Agency-Specific Programs for Solar Energy Development. On April 14, 2011, CCDOA filed comments on the Draft PEIS (DPEIS). BLM has responded to most of CCDOA's concerns, but the Supplement to the DPEIS published on October 28, 2011 (Supplement), raises some new issues. Therefore, CCDOA submits the following comments for consideration by the BLM and Department of Energy (DOE) as they finalize the PEIS and complete their environmental review.

COMMENTS

- 1. Protection of the Congressionally-Designated Airport Environs Overlay District for the Southern Nevada Supplemental Airport*

In the original DPEIS, BLM proposed that all Special Recreation Management Areas (SRMAs) would be excluded from new solar energy project development. However, in the Supplement, BLM proposes to remove Nevada SRMAs from this general exclusion. Supplement at 2-16, 2-17 note b. Instead, Nevada SRMAs would be categorized as Variance Areas, open to solar energy projects on a case-by-case basis. Supplement at Figure 2.3-4.



Clark County Board of Commissioners

Susan Brager, Chair • Steve Sisolak, Vice-Chair

Larry Brown • Tom Collins • Chris Giunchigliani • Mary Beth Scow • Lawrence Weekly

The Jean Lake Roach Lake SRMA in southern Nevada includes approximately 17,000 acres of land that has been specifically designated for transfer to Clark County upon approval of the proposed Southern Nevada Supplemental Airport (SNSA). As noted in our scoping comments, filed September 14, 2009, the Clark County Conservation of Public Land and Natural Resources Act of 2002 provides that upon the approval of the SNSA project, the 17,000 acres surrounding the Airport Site shall be transferred without consideration to Clark County as an Airport Environs Overlay District and are to be managed “consistent with” 49 U.S.C. § 47504.¹ Therefore, to the extent that BLM considers lands within the Overlay District acres as open to new utility-scale solar development projects under the rules for the variance process, *e.g.*, as described at Section 2.2.2.3.1 of the Supplement. BLM should provide a mechanism in that process to ensure that no element of any solar project would compromise BLM’s ability to satisfy Congress’s express direction for the future use of the SNSA and the Overlay District.

Although the pre-application meetings required as part of the variance process would provide an opportunity for BLM and CCDOA to “discuss” the status of the Overlay District with a solar applicant and to “initiate and ensure early coordination,” (Supplement at 2.2.3.1, p. 2-34), please provide a stronger mechanism suitable to the special status of the Overlay District. This mechanism should require documentation from the applicant that both CCDOA and the Federal Aviation Administration (FAA) have been consulted and agree that the proposed solar energy facility would not interfere with construction and operation of the SNSA and its associated infrastructure. The variance process already contains a requirement that the applicant submit documentation that the proposed project would be located in an area where minimal conflict with adjacent lands is likely. Supplement p. 2-35. This would be an appropriate stage of the process to require specific documentation regarding proposals for projects in the congressionally-designated Overlay District.

2. Desert Tortoise Variance Process Requirements

CCDOA has questions about the Desert Tortoise Variance Requirements discussed in Section 2.2.2.3.1 (p. 2-35, 2-36) of the Supplement and in particular, about the required 3-mile wide, minimally-disturbed connectivity corridor.

- Please clarify how BLM defines “proposed desert tortoise connectivity areas” and how it arrived at the particular areas shown in Figure 2.2-2 of the Supplement.
- Please explain whether these “connectivity areas” must be included in the relevant BLM Resource Management/Land Use Plans, or whether the public has any other opportunity to comment on the specific parameters of any particular connectivity area.
- There is debate within the scientific community over the appropriate width of connectivity corridors. Please provide a basis for the agency’s conclusion that a wildlife

¹ PUB. L. 107-282 at § 501. In turn, Section 47504 provides for the authorization of airport noise compatibility programs that contain: “...measures the [airport owner] has taken or proposes to take to reduce existing noncompatible uses and prevent introducing additional noncompatible uses in the area covered by the map. The measures may include ... *acquiring land, air rights, easements, development rights, and other interests to ensure that the property will be used in ways compatible with airport operations.*” 49 U.S.C. § 47504(a)(2)(E) (emphasis added).

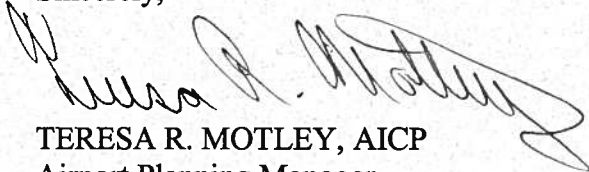
corridor must be three miles wide for the desert tortoise to satisfy the requirement that connectivity be preserved.

3. Aviation Safety Issues

As CCDOA stated in its April 14, 2011, comments on the DPEIS, CCDOA appreciates BLM and DOE's attention to the potential aviation safety hazards associated with solar energy development in the vicinity of aviation facilities, particularly airports. *See* DPEIS at pp. 4-15, 5-18, 5-19. We are encouraged by the inclusion of a "Glint and Glare Assessment, Mitigation, and Monitoring Plan" as one of the design features to be considered with proposed solar energy projects. DPEIS, Appendix A at A-35, A-37, and A-39. However, we continue to recommend strongly that additional mitigation measures, such as those outlined at DPEIS Section 5.6.3 requiring consultation with the FAA and local airports regarding *any* potential impacts on aviation, be included in the Final PEIS.

Thank you for your attention to CCDOA's concerns. Please contact Mark Silverstein on my staff at (702) 261-5709 or marksi@mccarran.com with questions or inquiries.

Sincerely,



TERESA R. MOTLEY, AICP
Airport Planning Manager

cc: Randall Walker
Rosemary Vassiliadis
Mark Silverstein
Philip Rhinehart
David Kessler

Thank you for your comment, Rebecca Schwendler.

The comment tracking number that has been assigned to your comment is SEDDSupp20076.

Comment Date: January 26, 2012 15:43:19PM

Supplement to the Draft Solar PEIS

Comment ID: SEDDSupp20076

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Attachment: NTHP PEIS Supplement Comments_1.26.12.pdf

Comment Submitted:

January 26, 2012

Linda J. Resseguie
Solar Energy Draft PEIS
Argonne National Laboratory
9700 South Cass Avenue
EVS/240
Argonne, IL 60439

Submitted electronically at <http://solareis.anl.gov/involve/comments/index.cfm>

Re: Comments on the Supplement to the Draft Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States (DOE/EIS-0403D-S)

Dear Ms. Resseguie:

The National Trust for Historic Preservation (National Trust) commends the efforts of the Bureau of Land Management (BLM) to respond to the many public comments on its draft solar programmatic environmental impact statement (Draft PEIS) by crafting a generally strong Supplement, which elevates protections for cultural resources. In particular, we are pleased to see the withdrawal from consideration, or the substantial reduction of, several proposed solar energy zones (SEZs) which, if developed, would have impacted significant cultural resources. We also commend the BLM for conducting thorough National Environmental Policy Act reviews of SEZs, requiring Class II or III cultural resource inventories of project areas proposed in variance applications, and requiring consultation under the National Historic Preservation Act as part of the analysis of new SEZs. Furthermore, we appreciate BLM's commitment to completing the PEIS in 2012 and its acknowledgment of the Department of Interior's authority and discretion to deny applications for rights-of-way on the public lands. Our comments on the Supplement focus on what we see as still inadequate protections for current and potential units of the National Trails System.

Interests of the National Trust

Congress chartered the National Trust in 1949 as a private nonprofit organization to "facilitate public participation" in historic preservation and to further the purposes of federal historic preservation laws. 16 U.S.C. §§ 461, 468. With the support of 125,000 members around the country, the National Trust works to protect significant historic sites and to advocate historic preservation as a fundamental value in programs and policies at all levels of government. In addition to our headquarters in Washington, D.C., the National Trust operates thirty historic sites open to the public, two field services offices, and numerous field offices throughout the country. The National Trust also maintains a list of America's Most Endangered Historic Places, to which eleven properties are annually added. In 1995, the National Trust placed nearby South Pass on this list, due to the lack of adequate protection of this pristine area of emigrant trails from development.

I. **BLM should treat national historic trails as equal units of the National Landscape Conservation System.**

When Congress designated the National Landscape Conservation System (Conservation System) it explicitly recognized that the system shall include each area that is “designated as a national scenic trail or national historic trail designated as a component of the National Trails System” 16 U.S.C. § 7202(b)(1)(D). Additionally, the Supplement acknowledges that national historic trails (NHTs) are units of the Conservation System [Supplement at 1-10] and BLM Instruction Memorandum (IM) 2011-061 states that solar “development must...be consistent with protection of areas and resources of national interest, including the BLM National Landscape Conservation System.” However, at the same time, the Supplement and the IM propose to lessen protections for NHTs relative to other components of the Conservation System, a prescription we find inconsistent with Congress’ intent. For instance, while both documents consider other units of the Conservation System to be areas of “High Potential for Conflict,” they consider NHTs to be areas of only “Medium Potential for Conflict” because of their “linear nature” [Supplement at 1-10] and the idea that they “have resource conflicts that can potentially be resolved” [IM].

Pursuant to Secretarial Order 3308, lands within the NLCS are to be managed with a priority on protecting the values for which they were designated – i.e., conservation of historical values. The 15-Year Strategy for the NLCS reinforces this by stating that the “conservation, protection, and restoration of the NLCS values is the highest priority in NLCS planning and management, consistent with the designating legislation or presidential proclamation.” NLCS Strategy at 8. Furthermore, the Federal Land Policy and Management Act (FLPMA) requires BLM to manage public lands under multiple-use principles *unless*, as with NHTs, an area has been designated by law for specific uses, in which case the BLM must manage the land for those specific uses. 43 U.S.C. § 1732(a). In other words, the BLM manages NHTs not under the FLPMA multiple-use mandate, but rather under the language of the legislation establishing the NHTs, the National Trails System Act (Trails Act), 16 U.S.C. § 1241 et seq. (1968). Since the Trails Act requires the BLM to develop “a protection plan for any high potential historic sites or high potential route segments” of NHTs, 16 U.S.C. § 1244(f)(3), the BLM must prioritize such a protection plan over other uses in the Draft PEIS.

Recommendation:

- While the origin of the discrepancy between protection of NHTs and other units of the Conservation System is not the Supplement itself, we strongly recommend that the BLM remedy this inconsistency in the treatment of units

in the Supplement by, at a minimum, elevating high potential route segments of NHTs to “High Potential for Conflict.”

II. BLM should increase the width of the avoidance area for national historic trails.

The Supplement states that the standard avoidance width for NHTs is 0.25 miles, except where a corridor of a different width has been established [Supplement at 2-16]. We commend BLM on establishing a minimum avoidance corridor for NHTs, but given the importance of setting for the integrity and significance of NHTs, and the dramatic visual impacts that utility scale solar developments have on resources that surround them, we believe BLM should add protections for trails beyond that narrow corridor. Such protections should be commensurate with the most up-to-date strategies for protecting NHTs, such as those included in the draft environmental impact statement/resource management plan (Draft EIS/RMP) revision recently published by the Lander Field Office of the BLM in Wyoming. For example, the preferred alternative in the Draft EIS/RMP prescribes specific physical and visual protections for trails at 0.25 miles, 1 mile, 3 miles, 5 miles, and more than 5 miles, depending on the development activity.

Recommendations:

- Using BLM’s Visual Resource Management System, protections for NHTs against impacts from utility scale solar energy development should include, at a minimum, limitation of visual contrasts to “weak contrast” for high potential route segments.
- BLM should consistently require mitigation measures that reduce visual impacts to current and potential (e.g., West Fork of the Old Spanish Trail) NHTs. Such measures could include imposing limits on the height of power poles, promoting non-penetrating and low profile racking/panel photovoltaic systems, and, where appropriate, using low visibility fencing, such as black fencing in lieu of uncoated galvanized fencing, and golf netting.
- Because transmission lines servicing the solar installations can also cause direct and indirect impacts to trails, BLM should require applicants to align power poles within existing easements and rights-of-way for existing power lines, where feasible.
- Where applicable, BLM should require developers to explore agreements with adjacent landowners to eliminate transmission line crossing of public lands in locations where they could directly or indirectly impact high potential route segments of NHTs.

III. BLM should consider modifying additional SEZs to reduce impacts to NHTs.

As mentioned above, we commend BLM for removing or modifying several proposed SEZs to reduce impacts to significant resources. However, we believe that BLM

should re-examine the extent of adverse impacts of some remaining SEZs to NHTs, given the NHTs' national significance and inclusion in the Conservation System, and modify those SEZs accordingly.

Recommendations:

We recommend that BLM modify the following SEZs to reduce impacts to national historic trails:

- *De Tilla Gulch:* We commend BLM for suggesting inventory and viewshed analysis to help determine potential impacts to the Old Spanish NHT and the West Fork of the Old Spanish Trail from this SEZ. Yet, we feel that the strong visual impacts to the trails that are guaranteed within approximately 5 miles of the SEZ remain unacceptable. Therefore, we recommend that BLM push, at a minimum, the southeastern boundaries of the SEZ back at least 0.5 miles, as well as implement strong mitigation measures to further reduce visual impacts.
- *Dry Lake:* We commend BLM for dramatically reducing the size of this proposed SEZ, in part to avoid impacts to significant cultural resources. However, we still recommend that BLM move the southeastern boundary of the SEZ to the west of I-15 to help reduce impacts to the Old Spanish Trail/Mormon Road site, which is listed in the National Register as a district.

IV. BLM should conduct a Class II cultural resources inventory of at least 10% of each currently proposed SEZ.

We strongly support BLM's recommendation for the use of Class II sample surveys to better understand cultural resources located within proposed SEZs. However, we feel that 5% minimum survey coverage, as planned for SEZs in Arizona, California, and Nevada [Supplement at 2-22] is inadequate. This inadequacy is illustrated by the fact that data collection efforts recommended to reduce uncertainty about potential impacts from several of the proposed SEZs (e.g., Brenda, Gillespie, Imperial East, Riverside East, Antonito Southeast, De Tilla Gulch, Dry Lake Valley North, Gold Point) involve acquiring a *10% sample* of each SEZ [Supplement at C-19, C-36, C-51, C-77, C-96, C-112, C-203, C-218].

Recommendations:

- BLM should require consistent Class II sampling of, at a minimum, 10% of current SEZs. This information should be used to help guide solar development away from areas of significant cultural resources and/or to enact avoidance and mitigation strategies.
- BLM should require consistent Class II sampling of, at a minimum, 20% of future proposed SEZs to help ensure avoidance of areas of significant cultural resources. This increased percentage of inventory should be feasible with future funding allocations and longer planning time, and it will provide a more accurate model of the probable locations of significant cultural resources.

Conclusion

When planning for large-scale solar energy development on federal public lands, the BLM must consistently prioritize the protection of outstanding cultural resources, including—but not limited to—significant concentrations of prehistoric and historic archaeological sites, historic trails, and Native American traditional cultural properties and sacred sites.

We appreciate the opportunity to provide these comments and we look forward to participating further in the PEIS process. Please contact us at (303) 623-1504 with any questions or concerns regarding these comments.

Sincerely,



Rebecca Schwendler, PhD
Public Lands Advocate and Archaeologist, Denver Field Office



Brian Turner
Senior Field Officer/Attorney, San Francisco Field Office

Cc: Nancy Brown, BLM Liaison, Advisory Council on Historic Preservation
Lee Webb, Dep't of Energy Liaison, Advisory Council on Historic Preservation
Caroline Hall, Advisory Council on Historic Preservation
Reid Nelson, Advisory Council on Historic Preservation
Dr. Robin L. Burgess, Federal Preservation Officer, BLM
James Garrison, Arizona SHPO
Milford Wayne Donaldson FAIA, California SHPO
Edward Nichols, Colorado SHPO
Ronald M. James, Nevada SHPO
Jan Biella, Acting New Mexico SHPO
Wilson Martin, Utah SHPO

Thank you for your comment, Donna Charpied.

The comment tracking number that has been assigned to your comment is SEDDSupp20077.

Comment Date: January 26, 2012 16:07:21PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDSupp20077

First Name: Donna
Middle Initial: J
Last Name: Charpied
Organization: Desert Protection Society
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Address 3:
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Privacy Preference: Don't withhold name or address from public record
Attachment: DPS SPEIS Comments.pdf

Comment Submitted:



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“Don’t Waste Our Desert”

Board of Directors:

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Desert Activist

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Alfredo Acosta Figueroa,
Native American

Phillip Smith,
Native American

Ron Van Fleet,
Native American

Johnney Coon,
RN/Desert Activist

Laura Cunningham
Desert Writer/Activist

January 27, 2012

RE: Comments to Solar Supplemental Programmatic Environmental Impact Statement.

Dear Sirs,

This comment letter to the Supplemental Programmatic Environmental Impact Statement (“SPEIS”) for solar energy development in six western states is submitted by the Desert Protection Society (“DPS”).

The Desert Protection Society (“DPS”) is a 501(c) (3) organization (formerly known as Citizens for the Chuckwalla Valley [“CCV”]), made up of residents of Eagle Mountain/Desert Center, Native Americans, local environmental activists from San Bernardino, Imperial, San Diego, and Riverside Counties. DPS, an environmental justice and conservation organization was formed in 1990 to prevent the World’s largest garbage dump from being built across the street from the Eagle Mountain Elementary School, and on the doorstep of Joshua Tree National Park. Our mission was a success when the US Supreme Court refused to hear the Polluter’s case. We have since expanded our mission to include other potentially damaging proposals and actively participate in the decision making process for proposals that include, but are not limited to water storage projects, power generating projects, questionable land use issues, and other projects that have the potential to harm desert communities and the environment in and around Joshua Tree National Park.

DPS and its Board of Directors (several of whom live and farm in the Chuckwalla valley for over 30 years) are deeply concerned with our governments’ attempts to industrialize the entire Chuckwalla Valley with solar swaths for the profit of a few and the demise of many. Approximately 180,000 acres will be destroyed in the Chuckwalla Valley from Desert Center to Blythe with this scheme. Despite your denials, this is an environmental justice issue gone rampant !

We incorporate as though fully contained herein, the comments submitted by Alfredo Acosta Figueroa Basin and Range Watch, and Solar Done Right.

ALTERNATIVES

As with the Draft PEIS, the SPEIS fails to consider a reasonable range of alternatives, in violation of NEPA. *Id.* at 20-23. A federal agency may not employ criteria derived from the agency’s preferred alternative as a means of rejecting other reasonable alternatives. *Idaho Conservation League v. Mumma*,

“DON’T WASTE OUR DESERT”

956 F.2d 1508, 1522 (9th Cir. 1992). Nor may an agency evade its duty to consider a reasonable range of alternatives by defining its project objectives in unnecessarily narrow terms, in order to artificially restrict the range of alternatives considered. *City of Carmel By-The-Sea v. U.S. Department of Transportation*, 123 F.3d 1142, 1155 (9th Cir. 1997). “The federal courts cannot condone an agency’s ‘contriv[ing] a purpose so slender as to define competing ‘reasonable alternatives’ out of consideration.’” *Simmons v. U.S. Army Corps. of Engineers*, 120 F.3d 664, 666 67 (7th Cir. 1997); *Citizens Against Burlington, Inc. v. Busey*, 938 F.2d 190, 196 (D.C. Cir. 1991).

DOI’s NEPA handbook explains that the “purpose and need statement for an externally generated action must describe the BLM purpose and need, *not an applicant’s or external proponent’s purpose and need.*” Department of Interior, Bureau of Land Management, National Environmental Policy Act Handbook 35,(citing 40 C.F.R. § 1502.13) (emphasis added), *available at*: http://www.blm.gov/pgdata/etc/medialib/blm/wo/Information_Resources_Management/policy/blm_handbook.Par.24487.File.dat/h1790-1-2008-1.pdf (citing 40 C.F.R. § 1502.13) . “The applicant’s purpose and need may provide useful background information, but this description must not be confused with the BLM purpose and need for action It is the BLM purpose and need for action that will dictate the range of alternatives.

The BLM’s definition of the project’s purpose will necessarily affect the range of alternatives considered, because when “the purpose is to accomplish one thing, it makes no sense to consider the alternative ways by which another thing might be achieved.”

BLM **MUST** offer and analyze a distributed generation alternative, as well as siting on degraded or contaminated lands, and other alternatives listed in CCV’s Draft PEIS comments April 13, 2011, in order to be in compliance with NEPA.

WATER

Mr. Michael Wright from the USGS conducted a study in the Chuckwalla Valley, Groundwater Ambient Monitoring Analyzing (“GAMA”), which provided age dating for the area. In a personal conversation with Mr. Wright, we learned that they examined wells in Desert Center and determined the water is “very, very old”, thousands of years old. He explained that when tritium is not detected there has been no recharge for the past 50 years, which is a commonly accepted hydrological fact. No tritium was observed in the Chuckwalla Valley well(s) studied. Why didn’t the SPEIS do tritium analysis? Also, C14 will tell exactly how old the water is, but the SPEIS did no such analysis.

Despite the voodoo science in your book, these projects will use copious amounts of precious desert groundwater, leaving behind solar ghost towns when the projects run their course, or when the money runs out, whichever occurs first.

AIR QUALITY

DPS anticipates that excessive pumping from all of the projects will lower the water table to the point that plants’ roots will no longer be able to access water. First small plants will not be able to survive, then as the table lowers, ironwoods, smoketrees, palo verde, and creosote will eventually die leaving a denuded desert and a PM10 and Ultra fine Particulate problem. This adds to eutrophication of the desert described below. Residents are also concerned about exposing arsenic that naturally occurs in desert soils, by denuding the desert. There is a human health consequence from denuding the desert. Arsenic occurs naturally in desert soils, but pose no risk *unless it is disturbed*. The solar swaths will expose residents and wildlife to cancer causing arsenic when it becomes airborne. Cumulatively with the other proposed and under construction projects, a significant negative impact will be created.

What will be the impacts to the Palm Springs Roundtail Ground Squirrel who like to live in the sand dune/mesquite areas where the water tables are higher? They will be the first to die from the obvious drawdown of water from the proposed and present activities in the Upper Chuckwalla Valley.

Researchers are finding that the desert is sucking up carbon at rates they never imagined:

“...Researchers have found that Nevada's Mojave Desert, square meter for square meter, absorbs about the same amount of CO₂ as some temperate forests. The two sets of findings suggest that deserts are unsung players in the global carbon cycle. "Deserts are a larger sink for carbon dioxide than had previously been assumed," says Lynn Fenstermaker, a remote sensing ecologist at the Desert Research Institute (DRI) in Las Vegas, Nevada, and a coauthor of a paper on the Mojave findings published online last April in *Global Change Biology*.

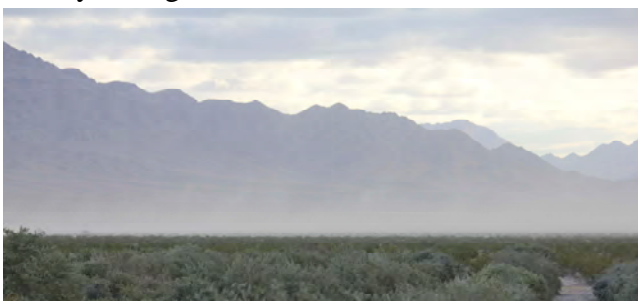
The effect could be huge: About 35% of Earth's land surface, or 5.2 billion hectares, is desert and semiarid ecosystems. If the Mojave readings represent an average CO₂ uptake, then deserts and semiarid regions may be absorbing up to 5.2 billion tons of carbon a year--roughly half the amount emitted globally by burning fossil fuels, says John "Jay" Arnone, an ecologist in DRI's Reno lab and a co-author of the Mojave paper...". (*Science* 13 June 2008: Vol. 320. no. 5882, pp. 1409 – 1410 DOI: 10.1126/science.320.5882.1409).

Compound that with hundreds of thousands of acres to be cleared for “green energy” people nor animals will be able to survive, and we can kiss the resources of Joshua Tree National Park good-bye. There is no evidence that destroying intact old growth desert systems with massive solar projects will cause a net benefit to offset global warming.

There are a couple solar projects under construction in the Chuckwalla Valley currently.

Despite mitigations to control dust, dust continues to be a chronic problem. Keeping in mind this area previously had no dust problems before, but now has a constant haze. Keep in mind, dust images below are just from one project – image hundreds of thousand of acres of this assault.

The Chuckwalla and Coxcomb Mountains (latter Joshua Tree National Park Wilderness) choked out by dust. This is not only a health issue for residents, plants, and animals, it is a visual resource issue. The US Government has absolutely zero respect for Joshua Tree National Park and rural residents, as proven by your unyielding desire to industrialize the desert.



In case we haven't made ourselves clear yet, we **vehemently oppose industrialization of the desert with so called green energy projects.**

Cultural Resources

The resulting material recovered during archaeological testing and recovery phases is a sensitive subject among Native Americans. Their concerns regarding all aspects of archaeological "mitigation" should be sought and seriously considered. Curation of recovered materials is one of these concerns. It has been said that "these materials should not live away from the people and place to which they are connected." People of the Chemehuevi, Serrano, Mojave, and Cahuilla nations should be consulted as to how and where they wish recovered materials to be maintained.

Desert Tortoise and Climate Change

In the 2009 Final Report "Niche modeling and implications of climate change on desert tortoises and other selected reptiles within Joshua Tree National Park (JTNP)" "Cameron Barrows models the current suitable habitat and projects the extent of suitable habitat under a mean climate shift of +2°C and -75mm of annual rainfall for desert tortoise. The data shows that habitat will become available on the slopes of Eagle Mountain and that the current healthy population of desert tortoise in Chuckwalla Valley is the reservoir for future immigration into JTNP from the southeast. (This report is available from Cameron Barrows, Center for Conservation Biology, University of Riverside and from Joshua Tree National Park.)

Fragmenting the tortoise habitat will be the ruination of the species in an area where they are healthy - have no respiratory or other diseases. You will be in effect murdering our great States' Reptile.

Wildlife Conservation and Solar Energy Development in the Desert Southwest, United States

Jeffrey E. Lovich a research ecologist, and Joshua R. Ennen a wildlife biologist, both with the US Geological Survey, Southwest Biological Science Center penned the above captioned article (982 BioScience • December 2011 / Vol. 61 No. 12). They concluded:

"All energy production has associated social and environmental costs (Budnitz and Holdren 1976, Bezdek 1993). In their review of the adverse environmental effects of renewable energy development, Abbasi and Abbasi (2000) stated that "renewable energy sources are not the panacea they are popularly perceived to be; indeed, in some cases, their adverse environmental impacts can be as strongly negative as the impacts of conventional energy sources" (p. 121). Therefore, responsible, efficient energy production requires both the minimization of environmental costs and the maximization of benefits to society—factors that are not mutually exclusive. Stevens and colleagues (1991) and Martín-López and colleagues (2008) suggested that the analyses of costs and benefits should include both wildlife use and existence values. On the basis of our review of the existing peer-reviewed scientific literature, it appears that insufficient evidence is available to determine whether solar energy development, as it is envisioned for the desert Southwest, is compatible with wildlife conservation. This is especially true for threatened species such as Agassiz's desert tortoise. The many other unanswered questions that remain after reviewing the available evidence provide opportunities for future research, as was outlined above. The shift toward renewable energy is widely perceived by the public as a "green movement" intended to reduce greenhouse gas emissions and acid rain and to curb global climate change (Abbasi

and Abbasi 2000). However, as was noted by Harte and Jassby (1978), just because an energy technology is simple, thermodynamically optimal, renewable, or inexpensive does not mean that it will be benign from an ecological perspective. The issue of wildlife impacts is much more complex than is widely appreciated, especially when the various scales of impact (e.g., local, regional, global) are considered. Our analysis shows that, on a local scale, so little is known about the effects USSEDO on wildlife that extrapolation to larger scales with any degree of confidence is currently limited by an inadequate amount of scientific data. Therefore, without additional research to fill the significant information void, accurate assessment of the potential impacts of solar energy development on wildlife is largely theoretical but needs to be empirical and well-founded on supporting science.”

The government needs to implement the Precautionary Principal with regards to massive energy projects. Clearly these are all experimental and on a scale never before witnessed. The Precautionary Principal is simple – if there is a chance of negative consequences simply do not do it. The article referenced above clearly shows that much, much more science needs to be conducted to understand and properly mitigate massive energy projects. We incorporate “Wildlife Conservation and Solar Energy Development in the Desert Southwest, United States” as though fully contained herein.

Joshua Tree National Park

Joshua Tree National Park is considered one of the finest examples of Mojave Desert and Colorado Desert in existence today. Since President Roosevelt established Joshua Tree National Monument in 1936, national park status has precluded off-road driving, livestock grazing, hunting, mining, and most other anthropogenic disturbances. Additional distinction was added by declaration of Wilderness status for nearly 80% of the park and designation as an International Biosphere Reserve. The American people and the Congress of the United States have felt these acres worthy of preservation for the enjoyment of future generations. Dr. E. Jaeger (1965) wrote, “[California deserts] are among the most appealing of our scenic wonderlands... places which, left undisturbed, minister greatly to the pleasure and ennoblement of man’s mind.”

The Joshua Tree desert is characterized by geographic, botanical, and wildlife diversity. With rainfall amounts ranging from 4-12 inches annually and summer heat often reaching over 100 degrees Fahrenheit both wildlife and vegetation must adapt to harsh conditions and short periods of suitable conditions for feeding, growth and reproduction. This is a fragile land with little soil development, few nutrients and sparse water. It is this combination of traits which was set aside as a national park and it is this set of circumstances we are all charged to protect.

For a number of years, National Park Service at Joshua Tree National Park has maintained and operated an air quality monitoring system within close proximity to Eagle Mountain (Upper Chuckwalla valley). Data collection began in May 2006 with a collection interval of 180 days (October). The 180 day cycle continued 2007, 2008 and is now collecting data for a fourth 2009 session. The impetus for the data collection beginning in 2006 was to collect baseline ozone data in anticipation of operations for both the Eagle Mountain hydroelectric project and the proposed Eagle Mountain dump. The data collection point is located on Park property, 6 miles northeast of the proposed dump and hydro projects, as well as proposed solar projects. In Summary the “Final Validated” data collected in 2006 and 2007 at 85ppb standard indicated respectively only two days of violation of the eight hour standard. The 2008 and 2009 (work in progress) are at the new NAAQS of 75 ppb and are presented here. If the older standard of 85 ppb were applied, one day in 2008 and zero days in 2009 would show a violation of the eight hour standard. All data indicate that during the summer months when ozone levels are at their highest, the

eastern portion of the Park is substantially less impacted by high levels of ozone than the entire western portion of the Park. Maintaining this high level of air quality is paramount to NPS, environmentalists, desert residents, and the Clean Air Act. This information is from comments to the Federal Energy Regulatory Commission regarding the proposed hydroelectric project at Eagle Mountain, dated August 17, 2009.

Joshua Tree National Parks' exquisite night skies will be polluted with light and dust from industrial sized solar projects. Astronomers visit this area of the Park from around the World to study the skies without light/particle pollution.

The Managers at Joshua Tree National Park have freely taken an Oath to protect the Park, and they do so in a profound, stellar fashion. The DOI created the National Park Service, and we hope, as well as expect the Managers of the Park to continue that fierce protection of their resources.

The people expect our Parks to remain pristine. To illustrate that point, recently **106,622** people sent letters to Secretary Salazar to encourage him to oppose the corporation who wanted to build the world's largest garbage dump in the arms of Joshua Tree, in the U. S. Supreme Court. The government opposed the corporation's petition. That's a lot of support for our desert jewel !

We have never seen such a wholesale assault on public lands in our life. The Riverside East SEZ will surely destroy livelihoods of residents, abuse a National Park that seems to be the unwanted stepchild of the DOI, and amounts to nothing more than corporate welfare on steroids. At least, you should insist that these highly industrial projects be 25 miles away from the Park's boundary. At best, the DOI ought to insist on distributed generation and preserve all of our Public Lands from the Great Terrain Robbery.

RECLAMATION

Even though there would be decommissioning plans with each project, the subject public lands will not be reclaimed, as the case with the mining industry regulations.

Projects are obtaining aggregate from their R-O-W, by depositing large loads of soil on screens and recovering the aggregate. This is in effect mining on public lands and reclamation regulations for "green energy" projects on public lands must be promulgated to return those lands back to their conditions prior to development. To do less is to incur an irretrievable loss of those lands for eternity.

Further, with every wilderness bill for conservation comes complaints of closing off our public lands. Of course those lands are not "closed off" because people may still hike, camp, relax, photograph, etc on those lands. Not so with the industrialization of our deserts for energy projects. We have walked, picnicked, photographed, enjoyed the public lands that are now fenced with razor wire tops preventing anyone from enjoying those lands ever again.

Here we have previously protected lands that were being conserved for future generations' enjoyment, only to have them ripped from the public for mass industrialization. If a reclamation plan was instituted for these projects, there would be hope that one day everyone can enjoy them once again.

CONCLUSION

In closing, Donna Charpied, the undersigned was presented with the Golden Presidential Volunteer Service Award. The Letter from President Obama states in part, "...Our Nation faces the most challenging economic crisis in a lifetime. We will only renew America if we all work together.

Individuals, the private sector, and government must combine efforts to make real and lasting change so that each person has the opportunity to fulfill his or her potential...”.

The government’s misguided energy policy is fulfilling the needs of corporate America while rural communities and our vulnerable Parks are being squashed like bugs.

Respectfully Submitted,

Donna Charpied

Donna Charpied, Executive Director DPS

Desert Protection Society (Formerly Citizens for the Chuckwalla Valley)

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<http://www.youtube.com/watch?v=pOwFa1tnpNc>

"DON'T WASTE OUR DESERT"

CC: Interested Parties.

Thank you for your comment

The comment tracking number that has been assigned to your comment is SEDDSupp20078.

Comment Date: January 26, 2012 17:01:30PM

Supplement to the Draft Solar PEIS

Comment ID: SEDDSupp20078

First Name: [Withheld by requestor]

Middle Initial:

Last Name: [Withheld by requestor]

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City:

State: [Withheld by requestor]

Zip: [Withheld by requestor]

Country: [Withheld by requestor]

Privacy Preference: Withhold name and address from public record

Attachment:

Comment Submitted:

Just found out about this plan and would like to request an extension of time to submit comments and respond to The Solar PEIS Supplement. Thank You.

Thank you for your comment, Mary Jo Borak.

The comment tracking number that has been assigned to your comment is SEDDSupp20079.

Comment Date: January 26, 2012 17:08:39PM

Supplement to the Draft Solar PEIS

Comment ID: SEDDSupp20079

First Name: Mary Jo

Middle Initial:

Last Name: Borak

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Zip: 94102

Country: USA

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Attachment: SolarPeissupplementCPUCcomments1272012.pdf

Comment Submitted:

PUBLIC UTILITIES COMMISSION

505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3298



January 27, 2012

Ms. Heidi M. Hartmann
Solar Energy Draft PEIS
Argonne National Laboratory EVS/900
9700 S. Cass Ave. EVS/900
Argonne, IL. 60439

Re: California Public Utilities Commission (CPUC) Comments on the Supplement to the Draft Programmatic Environmental Impact Statement (DPEIS) for Solar Energy Development in Six Western States prepared by the Bureau of Land Management (BLM) and the Department of Energy (DOE)

Dear Ms. Hartmann:

Thank you for the opportunity to comment on the BLM and DOE Supplement to the Draft PEIS for the solar energy development in the six western states including the consideration of Solar Energy Zones (SEZs). Through the PEIS process, BLM is evaluating a new Solar Energy Program for utility-scale solar development on BLM-administered lands in the six western states. DOE is evaluating new program guidance relevant to DOE supported solar projects on federal, state, tribal, or private land.

We have provided previous comments on the Draft PEIS and scoping comments on both the May 2008 and July 2009 notices and have been a cooperating agency on the Solar PEIS as well as a representative on the California Interagency Working Group for the Solar PEIS. In addition, the CPUC was an active member of the Renewable Energy Transmission Initiative (RETI) process for over 3 years and now recently involved in the ongoing DRECP process. As evidenced by our continued involvement, the CPUC is very supportive of the Solar PEIS process. On April 12, 2011, Governor Jerry Brown signed into law Senate Bill 2 (First Extraordinary Session), extending the current 20 percent renewable energy goal by 2010 to a 33 percent goal by December 31, 2020.

In an attachment to this letter, we would like to provide BLM with some additional new comments on the Supplement document. However, we are pleased to see that BLM has

addressed a number of our Draft PEIS comments in this Supplement as well as outlining clear guidance on identifying new SEZs and providing incentives for projects within the SEZs. Per our draft comments, we support the Riverside East and Imperial East SEZs being carried forward in California and the elimination of Iron Mountain due to major resource conflicts. Although we also recommended the Pisgah SEZ be carried forward, it was dropped as a SEZ. However, we appreciate the fact that BLM will still consider the former SEZ as a solar right-of-way (ROW) variance area. In addition, the CPUC expressed concerns regarding the BLM Preferred Alternative that allows solar development outside the SEZs. However, BLM has now provided a list of requirements and considerations for allowing solar in variance areas including priority consideration to areas identified through the DRECP process and that will minimize the need to build new transmission.

BLM should to be commended for their efforts in meeting the challenges of solar development and their high level of responsiveness to addressing agency and public comments. We look forward to continuing to work with BLM on the finalization of the Solar PEIS document in our role as a cooperating agency and as a member of the Interagency Working Group. If you have any questions, please contact Billie Blanchard, our interagency group representative, at 415-703-2068 or email at bcb@cpuc.ca.gov.

Sincerely,



Mary Jo Borak

Supervisor

Energy Division

Infrastructure Permitting & CEQA

Cc: Molly Sterkel, Program Manager Energy Division
Paul Douglas, CPUC Energy Division
Ashley Conrad-Saydah, BLM State Office
Roger Johnson, CA. Energy Commission
Michael Picker, Governor's Office

**CPUC COMMENTS ON SUPPLEMENT TO THE DRAFT SOLAR PEIS
JANUARY 27, 2012**

Solar PEIS process and its relationship to the California DRECP process with overlapping boundaries and BLM involvement

CPUC would like BLM to clarify a number of Supplement statements in the Final PEIS that relate to and may carry over to the California DRECP process as outlined below:

- **Section 1.3 page 1-4 BLM Purpose and Need**

Comment - Given the DRECP process as discussed on pages 2-31 and 32 is now ongoing in the same California Solar PEIS area, to what extent will BLM's purpose and need statements, if any, be considered applicable to the DRECP purpose and need?

- **Section 1.4 page 1-5 BLM Decisions to be Made as part of Solar PEIS process includes Item 1 Land use amendments that identify exclusion areas for utility scale solar energy development in the six state study areas.**

Comment – With the ongoing and overlapping DRECP process, will the exclusion areas from solar development listed on Table 2.2-1 be considered the same solar and/or renewable development exclusion areas for the purposes of the DRECP land use amendment process?

- **Section 1.4 page 1-5 BLM Decisions to be Made includes Item 2 which indicates land use amendments that identify areas potentially available for utility scale solar energy development outside of SEZs in the six state study areas in variance areas.**

Comment – With the identification of potential solar development variance areas in addition to California carried forward SEZs, will this commit the related DRECP process to the proposed DRECP development scenario alternative known as the Development Focus Areas (DFAs) Emphasis? It has been stated to the DRECP stakeholder members as a "scenario where renewable energy development would occur primarily within the DFAs with incentives to retain development within the DFAs subject to stricter siting and design criteria than would occur within the DFAs." (Dudek/ICF Draft Memo, 12/9/2011)

- **Section 1.6 page 1-7 and 1-8 Reasonably Foreseeable Development Scenario (RFDs) –** In the 1st and 2nd paragraph it states, "RFDs developed for the Draft Solar PEIS to help define the potential magnitude of solar energy development that could occur within the six state study areas over the next 20 years is still considered to be valid to support analysis in this Supplement and the Final Solar PEIS.....To establish an upper bound it was assumed that 50% of the RPS – based requirement for renewable energy

production would be provided from solar energy and that 75% of the solar development would occur on BLM administered lands within the specific state.” Table 1.6-1 provides BLM California estimated MWs and acres of land to support the above described level of development.

Comment – Again given the DRECP overlapping process, to what extent will BLM through the Solar PEIS process commit the DRECP area to a certain level of reasonable development area?

- **Section 2.2.2.2.3 Incentives for Projects in SEZs page 2-24 – 25 Improve and Facilitate Mitigation** – In the third paragraph it is stated, “To the extent that public lands are used to mitigate for the impacts of solar development whether in or out of the SEZs, the BLM will develop strategies to ensure that any mitigation lands are protected to provide enduring conservation benefits.”

Comment – It is the CPUC’s understanding that a stakeholder comment or question has arisen in the DRECP process regarding the ability of BLM to commit lands for conservation purposes in perpetuity. It would be helpful and informative to the DRECP process if BLM could elaborate in the Final PEIS on what strategies will be utilized on public lands used for mitigation lands that provide for enduring conservation benefits.

- **Section 2.2.1.1 Right-of- Way Authorization Policies** – This section includes changes in BLM proposed ROW authorization policies reflecting comments received in the Draft Solar PEIS including Terms of ROW, Renewal of ROW, and Upgrades or Changes to Facility Design or Operation.

Comment – Given that there may be various future technological changes in solar energy developments, it would be helpful for BLM to clarify in this section the process for repowering a development on the same right-of- way grant area. It is not clear in the specific underlined stated items above.

Thank you for your comment, Pamela Nieberg.

The comment tracking number that has been assigned to your comment is SEDDSupp20080.

Comment Date: January 26, 2012 17:21:31PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDSupp20080

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Attachment:

Comment Submitted:

I understand the BLM is considering changes to large-scale solar development on public lands which represent improvements to the program that will reduce impacts on fragile desert ecosystems.

I strongly support the preferred solar zone alternative to focus solar development in lower-conflict zones instead of opening up 22 million acres of Western lands to solar development. I support the designation of exclusion areas and transferring focus to low resource value locations. Variances under this program should be limited and effort taken to ensure that our most important habitat and ecosystems are protected from solar development.

Pam Nieberg

Thank you for your comment, David Peach.

The comment tracking number that has been assigned to your comment is SEDDSupp20081.

Comment Date: January 26, 2012 17:27:45PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDSupp20081

First Name: David
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Last Name: Peach
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Privacy Preference: Don't withhold name or address from public record
Attachment:

Comment Submitted:

Please allow an extension of the public comment deadline to provide suitable opportunity to study the Solar PEIS Supplement.

Thank you for your comment, Cynthia (Cindy) Buxton.

The comment tracking number that has been assigned to your comment is SEDDSupp20082.

Comment Date: January 26, 2012 17:37:31PM

Supplement to the Draft Solar PEIS

Comment ID: SEDDSupp20082

First Name: Cynthia (Cindy)

Middle Initial: M

Last Name: Buxton

Organization: Forest subCommittee, San Diego Sierra Club

Address: [Withheld by requestor]

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State: [Withheld by requestor]

Zip: [Withheld by requestor]

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Privacy Preference: Withhold address from public record

Attachment: New Microsoft Word Document (2).doc

Comment Submitted:

I participated in a five month collaborative settlement to the 15 year Land Management Plan (LMP) Settlement agreement concerning the Southern California 15 year plan for the Forest Service. Not intending to single any group or anyone, I genuinely like these people and when I don't I can honestly say at least I want to like them. I really wish we could remove these impediments to better communication and conflict. The participants were in the tenuous positions of having to pick up an issue with history and baggage. It is not to personalize in this forum because it was not an ideal starting point. Nevertheless, the comments below include the concerns and takeaways I observed through this process relevant to future siting.

The degree to which GIS managed layered mappings is the primary data source for sweeping and permanent decisions affecting public lands is shocking. To clarify, GIS is a great tool for a rough review. I'm sure it has revolutionized land management and policy process.

However, in my opinion it is being abused and exploited to the demise of gorgeous public lands and critical habitats.

Accuracy and integrity have fallen from the primary intention while the foot to the ground skills of agency rangers have suffered at the hands of allowing too much reliance on this tool.

I know the areas we were reviewing foot to ground over many years before and after fires and in all seasons, and I have photos of them. Some are the most unspoiled and beautiful natural surprises I've encountered anywhere. If you ask the agency personnel however the answer is not always congruent with my experience. From some it is watered down, disjoint, vague, and detached.

Do I just have an odd sense of values? Human nature doesn't change, especially among the young and ambitious. Most parents would not be fooled. They are ambivalent because they have not been there. They do not want to admit at times that they do not know how to get there. People, all of us, react and adjust to their own ignorance in many ways.

It is incumbent upon the agencies, such as the BLM and the National Forest Service not to let good human resources get to this point. They need to insure that the training opportunities, the mentoring, and apprenticeships complete in such a way as to make the ranger "whole" at the end of it. Your new young neophytes and not so new if it goes on long enough are placed into a precarious position without these, as is the fate our lands, -and our society.

I am concerned that many designations are placed arbitrarily and capriciously upon public maps as a result. It may not excuse their own lack of maturity, albeit truthfulness, but strong management has to do a better job of directing their maturity within that land to person interface. Poor accuracy without some thoughtful support through mentorship will result in apathy and even disdain at the hands of frustration and peer pressure. How do you ensure peer pressure can not override the truth? How do you ensure it supports it?

The true veteran leaders of the land need to be allowed to lead. How do you ensure that truth is known when it is spotted? There is no University on Earth a better teacher in this regard than the great outdoors. We just have to ensure we continue to go there; we do, and we ensure our own credibility and the integrity of sustainability, if not survival.

If management doesn't know- and doesn't go, either, and too often they don't, too often they are too tired to muster the steam to

care. If our law makers, as I suspect carry even more of the bulk of the root cause, fail in keeping the financial resources in land management agencies, then the young upstarts as well as the older ones can not get the momentum up high enough for being way over tasked from wearing too many hats and spread too thin.

The enormous impact that this has had on this country is astounding in only a few years. Our reality is what is real to us. That that could be more the multilayered satellite image on our monitors; than the ach in our feet, the burning chill of sunburn and scratches after a day of cross country exploring, the virtual sound of a gurgling stream still heard into the night long back at home; is unbelievable if I had not experienced it first hand: "Ground truthing isn't really ground truthing, its checking the map...we don't have a way to quantify scenic integrity" --Sure you do, but you have to know it when you see it. Scenic Integrity is not a criterion of imagery. It is a criterion of NEPA.

There is an element of the wild land profession, in my opinion, that is sacred. It must be so or we have lost; we are lost on the undestined voyage without purpose or principle.

That connection that some have the privilege to keep for a society is as critical as the habitat within.

It should go beyond the traverse lines of a topo map and satellite image to an inarticulateable awareness of the spirit within. When I fail to see that spirit in the condescending and ego-laden alliances born of job stress, fear, peer pressure, self consciousness, and ignorance, my faith in this process wanes. When I do see it and hear it coming from under the words of a few wonderful rangers that know the ground and the spirit that connects to it, then I can be far more faithful to the new collaborative movement.

I've seen collaborative through GIS from wonderful, respected, knowledgeable people. One woman's opinion: It was a disaster. The best part was just in being there , remnants of spirit to sustain the faith in the intention. --Ok maybe it was just closer to a political rally that a mindful playing to the strengths as I had anxiously anticipated. Didn't happen, but my assertiveness skills if not improved were at least exercised like never before.

What I saw could be criminal if not unwittingly so. It could be a violation of the Federal "making false claims to the Federal Government" laws, and when there are projects that are hinging on these land management classes it would potentially be a violation of the Federal Procurement Act and even open up concerns of violations of Federal Anti Trust Laws, Conspiracy, Racketeering, Insider Trading (on steroids). Harsh words. Very Harsh.

So harsh when coming from this gender, the other one so largely in the majority "out there", recoils and runs. Nothing is done. The alliance system is protected. We need to start throwing our staffed land managers into the thick of it. Literally until the stars consume them and the sounds of the woods re-hypnotized them to the portion of our existence that is actually the un-animated, the un-contrived, -the real one, less we are lost and enslaved by the illusionary matrix of social propriety, self consciousness, fear, and domination by apathy and "reality" TV, for good.

When scenic integrity of whole land plans are high on top but moderate next to a roaring wild stream in a dense riparian environment of huge legacy trees, I get suspicious. There they are in the public record. These are precious and rare in an arid ecology. --and they sequester far more CO2 than the wind mills or solar farms that would seek to replace them . See a multitude of controlled studies coming about in credible journals such as Science. Please don't disturb these places for any reason, nor the places anywhere in sight of them and then some. Please engrave this order from the land and our heritage in stone. Please go see them, not by satellite, not by helicopter, but by foot-to the --ground resource.

This CAN be avoided and these projects CAN be done affectively and with reverence to our wild places. The most obvious alternatives in my opinion, to the process so far, should include:

- 1) Reduce the population. We must, by half. Energize the population control movement in full kilt. Don't ruin what's left for a volume that HAS to go down. We must attenuate nicely before nature does it for us.
- 2) Put local roof top solar in first place energy selection. The evolving sophistication of the public can not support massive land grabs and the rationalizing that goes with them, when the most obvious and least impacting methods are not only ignored but avoided.
- 3) Protect ANY complex system. These remove CO2. All the energy farms in the world do not remove a single molecule.
- 4) Replant, reforest, and restore old systems that have been cut or burned.

Thank you for reading.

Sincerely ,

Cynthia (Cindy) Buxton

Chair of the Forest SubCommittee of the San Diego Sierra Club

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Thank you for reading.

Sincerely ,

Cynthia (Cindy) Buxton

Chair of the Forest SubCommittee of the San Diego Sierra Club

Thank you for your comment, PHYLLIS LYTE.

The comment tracking number that has been assigned to your comment is SEDDSupp20083.

Comment Date: January 26, 2012 17:43:24PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDSupp20083

First Name: PHYLLIS
Middle Initial:
Last Name: LYTE
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Address 2:
Address 3:
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State: CA
Zip: 92284
Country: USA
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Attachment:

Comment Submitted:

Due to the long-term consequences of proceeding with this project, and the number of local citizens who have not read or heard about it so that they can be well-informed, I am adding my voice to that of others, REQUESTING THAT THE COMMENT PERIOD BE EXTENDED.

Please allow our local communities to become informed before proceeding!!

Thank you for your comment, Sam Sloneker.

The comment tracking number that has been assigned to your comment is SEDDSupp20084.

Comment Date: January 26, 2012 17:56:33PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDSupp20084

First Name: Sam
Middle Initial:
Last Name: Sloneker
Organization:
Address: [Withheld by requestor]
Address 2:
Address 3:
City: [Withheld by requestor]
State: [Withheld by requestor]
Zip: [Withheld by requestor]
Country: [Withheld by requestor]
Privacy Preference: Withhold address from public record
Attachment:

Comment Submitted:

The Solar PEIS Supplement, with its extensive scientific data and regulatory information requires time for stakeholders to make informed comments.

An extension of the public comment period (3 months) is necessary to have sufficient time to adequately analyze the effects of 20 million additional acres of public lands and to ensure a meaningful democratic process. I respectfully request that such an extension be granted.

The size of these variance lands east of the City of Twentynine Palms and east of the Air/Ground Combat Center will affect wildlife corridors and other environmental, cultural, and economic resources. Solar development on these lands and their proximity to the Joshua Tree National Park which attracts visitors from all over the world will have a significant effect on the local and regional tourism economy of the gate-way communities in the Morongo Basin.

It is important that these impacts be brought to full attention and that sufficient time for such input and consideration is allowed.

Sincerely,

~Sam Sloneker

Thank you for your comment, Jared Fuller.

The comment tracking number that has been assigned to your comment is SEDDSupp20085.

Comment Date: January 26, 2012 18:14:03PM

Supplement to the Draft Solar PEIS

Comment ID: SEDDSupp20085

First Name: Jared

Middle Initial: G

Last Name: Fuller

Organization:

Address: [Withheld by requestor]

Address 2:

Address 3:

City: [Withheld by requestor]

State: [Withheld by requestor]

Zip: [Withheld by requestor]

Country: [Withheld by requestor]

Privacy Preference: Withhold address from public record

Attachment:

Comment Submitted:

Desert tortoise habitat and 'connectivity zones' in all populations, but especially in the northeast and western populations in Nevada and California, should be excluded from solar development. In general, habitat for these two populations is more threatened than other areas under BLM administration. These threats include susceptibility to fire near the habitat limit and at higher elevations, potential urban development (proximity to major metropolitan areas), military activities as well as wind energy development and solar development on non-BLM lands. These come in addition to possible changes and shifts in habitat resulting from climate change. Present applications in desert tortoise habitat, especially in connectivity zones, which may otherwise be open to proceed under the 'variance process', should also be added to the exclusion area such as the applications in the Ivanpah Valley. Excluded tortoise habitat would also reduce threats to numerous other animals and plants within the Mojave desert ecosystem.

Thank you for your comment, Nino Mascolo.

The comment tracking number that has been assigned to your comment is SEDDSupp20086.

Comment Date: January 26, 2012 18:36:33PM

Supplement to the Draft Solar PEIS

Comment ID: SEDDSupp20086

First Name: Nino

Middle Initial:

Last Name: Mascolo

Organization: Southern California Edison

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State: CA

Zip: 91770

Country: USA

Privacy Preference: Don't withhold name or address from public record

Attachment: Solar PEIS supplemental comment letter Southern California Edison_Jan26.pdf

Comment Submitted:



January 26, 2012

Solar Energy PEIS
Argonne National Laboratory
9700 S. Cass Avenue
EVS/240
Argonne, IL 60439
Submitted via U.S. Mail and Email

Attention: Attention: Shannon Stewart (BLM) and Jane Summerson (DOE)

Subject: Southern California Edison Company comments on the Supplement to the Draft Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States (Solar PEIS)

To the Solar PEIS Team:

Southern California Edison (SCE) is pleased to provide comments on the Supplement to the Draft Solar PEIS, released by the Bureau of Land Management (BLM) and the Department of Energy (DOE) in October 2011.

SCE provides these comments as constructive recommendations for improvements on specific issues of importance to our utility operations consistent with our obligation to plan, permit, construct, own and operate transmission infrastructure to meet renewable energy procurement and transmission grid network reliability needs in a safe and cost-effective manner.

SCE believes that the Solar PEIS will, when complete, provide a framework necessary to support development of renewable energy resources on federal lands in the western United States—along with associated electrical transmission facilities and corridors to integrate Solar Energy Zones (SEZs)—while ensuring effective protection and conservation of native wildlife, plant species and the natural communities that support them.

California's renewable energy and climate change goals are among the most ambitious in the nation. In support of these goals, SCE procures more energy from renewable resources than any other utility in the country. Despite aggressive renewable energy procurement, challenges to meeting the state's renewable energy goals remain. These challenges include permitting and siting renewable energy projects as well as the expansion of existing and the installation of new transmission facilities. Therefore, the inclusion of transmission corridors in the Solar PEIS is a key element for the success of the SEZ approach. SCE supports efforts to streamline the approval of renewable energy generation projects as well as the necessary transmission system infrastructure to support such generation. This should facilitate development of environmentally responsible utility-scale renewable development in a timely fashion.

Transmission network upgrades and additions will be needed to safely and reliably interconnect and deliver renewable energy resources from remote areas of the state to

population centers. State and regional transmission planning efforts have identified some of the transmission upgrades and additions needed to meet today's renewable energy goals, based upon best available information. Uncertainty remains, however, as to the location, amount, and type of renewable energy resources that will be developed today and in the future, which in turn impacts the location and need for transmission infrastructure.

Integration of land-use and transmission planning efforts, informed by the Solar PEIS, will provide greater certainty resulting in a more orderly, rational, timely, and cost-effective state and regional transmission planning and permitting process. Coordination of the state and regional planning efforts of the California Independent System Operator (CAISO), California Public Utilities Commission (CPUC), the California Energy Commission (CEC), and the Western Electricity Coordinating Council (WECC), including broad stakeholder participation, is essential to achieving the state's goals and should be reflected in the Solar PEIS.

Facilitate Cost-Effective, Environmentally Sound Transmission Planning, Siting, and Permitting:

The Solar PEIS should facilitate cost-effective, environmentally sound transmission planning, siting, and permitting. We appreciate the Supplement's consideration in planning for sufficient transmission system upgrades and additions to integrate renewable energy resources. However, we encourage the Solar PEIS team to continue to engage with regional planning efforts, like WECC and others, to assist in identifying potential transmission corridors. Also, the Final PEIS should take into consideration the cumulative impact on the electrical grid resulting from multiple downstream transmission infrastructure changes to accommodate new renewable generation projects. Furthermore, the Solar PEIS should recognize the need for electric utilities to (i) acquire sufficient rights over public and private lands to support transmission corridors, upgrades and additions, and (ii) to hold such lands for future use consistent with the Solar PEIS planning horizon. This is important from a planning perspective as areas not reserved as transmission corridors may not be available by the time renewable energy plants are fully developed.

More specific comments about the Solar PEIS are:

Integration of Land Use Planning:

- Prioritize the designation of seamless, contiguous, strategically sized transmission corridors on public and private lands to facilitate transmission network upgrades and additions to safely and reliably support SEZs throughout the west.

Designated corridors should include both federal and non-federal (private and public) lands. Designated corridors on federal lands should be withheld from other uses by DOI consistent with PEIS planning horizons. Also, the DOI/DOE should coordinate with the state, county and local agencies to hold non-federal lands for future use, consistent with the PEIS planning horizons.

Existing land management plans should be amended to show any new utility corridors to the extent those utility corridors are not incorporated into the DRECP. Corridors on non-federal lands should also be identified so that counties can incorporate corridors in their County General Plans.

- Provide flexibility to facilitate the identification of new and expanded transmission corridors that can accommodate new transmission lines, substations, upgrades and additions in the most cost-effective, environmentally sound manner. Utility corridors must be wide enough such that upgrades and additions can be located within a corridor, while avoiding areas with environmental sensitivities or engineering constraints.
- As described in Section 2.3.1.6 for solar projects, further assess expanded and new transmission corridors to accommodate the expected new transmission upgrades, additions, and related infrastructure to support each SEZ development. A typical industry yardstick for delivery of 1,200 MW is a 500 kV transmission line. Additionally, a maximum of two 500 kV transmission lines per transmission corridor, with proper separation distance (a minimum of 250 feet from center line to center line between the two lines), should be utilized in the land use planning. Compliance with these transmission planning standards will guard against building in new risks to grid reliability. The DOI/DOE should work with SCE, CAISO, and others to understand the location, number, and size of transmission lines needed to accommodate the anticipated capacity of renewable generation in the SEZs.
- Transmission lines located in proximity to SEZs may not necessarily have sufficient capacity to accommodate the anticipated renewable generation in the SEZs, nor may the lines meet reliability concerns if too many transmission facilities are located together.
- Clarify that exclusion areas do not necessarily apply to transmission line and appurtenant facilities (telecommunication, access roads, substations, etc.). For example, Table 2.2-1 indicates that areas with more than a 5% grade should be excluded. While the exclusion may be appropriate for a renewable generation facility, transmission lines are frequently built across terrain with greater than a 5% grade. In addition, Appendix D.2.5, p. D-4, lines 18-19, states that in some cases, transmission lines may be sited in environmentally sensitive areas that are not suitable for locating SEZs.
- Recognize the importance of timely planning and permitting projects to maintain a reliable transmission grid. Current planning and construction timeframes for transmission can take up to ten years. Therefore, it is important to simultaneously include land use planning for transmission lines in conjunction with the creation of SEZs to facilitate timely and successful permitting and siting of transmission lines and associated facilities to interconnect renewable generation projects. This would be similar to the Energy Policy Act of 2005-Section 368 corridor planning process.

- Section 2.2.2.2.5 proposes to identify new SEZs and amend applicable land use plans within a 12-18 month time frame. We encourage that transmission considerations be included as part of that analysis and time frame.
- Encourage the use of existing roads, transmission rights-of-way, and corridors, wherever possible, consistent with all applicable reliability planning criteria required by the North American Electricity Reliability Corporation (NERC), WECC, and the CAISO.
- Establish a policy that supports prioritizing and expediting interagency permit processing for transmission network upgrades and additions which support integration of SEZs with the grid.

Near term priority should be given to transmission network upgrades and additions that may be needed to serve geographic areas that have been identified as potential high solar resource value, low environmental/cultural conflict locations such as the Western Mojave and Chocolate Mountains.

- The PEIS should be robust enough to allow future requests for transmission infrastructure and corridors to be evaluated in an Environmental Assessment and not a second Environmental Impact Statement.
- Clearly identify that BLM Section 7 consultation—under the federal Endangered Species Act (ESA) with the US Fish and Wildlife Service (USFWS)—will cover transmission line permitting, construction (including upgrades), and later operations and maintenance activities on public and private lands. Utility transmission lines often cross through both public and private lands to deliver energy from SEZs to load centers. If the ESA consultation does not include the private land component, the applicant would need to work with the USFWS to prepare a Habitat Conservation Plan under Section 10 of the ESA, which would result in project delays.
- Coordinate with state and federal permitting agencies to establish a compensatory mitigation program for SEZs, including a methodology to determine the mitigation ratio necessary for restoration or offset land purchases that will be followed by all involved federal and state permitting agencies, and not result in duplicative mitigation. The lead federal agency must ensure that the total mitigation is appropriate to the scope of the impact.

Coordination with Agencies:

- Coordinate with the CAISO's Transmission Planning Process (TPP) to ensure that transmission upgrades and additions needed to support renewable energy development in areas identified by the Solar PEIS are considered for inclusion as "public policy driven projects", including California's 33% Renewable Portfolio Standard (RPS) target by 2020 and other states' future RPS targets.

- Coordinate with long term, comprehensive energy and environmental planning efforts, including the DRECP and California Public Utilities Commission (CPUC) Long Term Procurement Plan (LTPP), to direct development to high renewable resource value, low conflict SEZs.
- Coordinate with the WECC regional transmission planning efforts to ensure consistency and compatibility across the western region of North America. Coordination of state and regional planning efforts could lead to a fully integrated west-wide transmission system, taking advantage of generating characteristics of both variable and flexible generation to lower costs, increase reliability, and to facilitate "system balancing" across broad geographic regions to "smooth out" the variability of renewable energy resources.

Transmission Analysis:

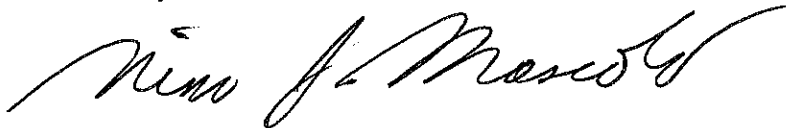
The Test Case Transmission Analysis for the Proposed Brenda SEZ has flaws in its assumptions. The analysis was performed without taking into account other SEZs, and assumes that power can be readily exported from the Brenda SEZ to the Los Angeles load center without downstream upgrades and without accounting for generation projects in the queue.

The final PEIS should instead establish a methodology to identify and designate transmission corridors sufficient to support transmission network upgrades and additions needed to deliver power from SEZs to load centers, taking into account all relevant factors, including the potential energy deliveries from a SEZ, optimizing existing infrastructure, and minimizing the need for new corridors and infrastructure.

Conclusion

Thank you for the opportunity to provide comments and suggestions to the Solar PEIS. SCE looks forward to working with you to ensure that the Solar PEIS facilitates cost-effective, environmentally sound transmission planning, siting, and permitting.

Sincerely,



Nino Mascolo
Manager, Government Lands and Forestry
Telephone 626.302.4459
FAX 626.302.9439

Thank you for your comment, DENISE LOUIE.

The comment tracking number that has been assigned to your comment is SEDDSupp20087.

Comment Date: January 26, 2012 18:49:05PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDSupp20087

First Name: DENISE
Middle Initial:
Last Name: LOUIE
Organization:
Address:
Address 2:
Address 3:
City:
State:
Zip:
Country:
Privacy Preference: Withhold address from public record
Attachment:

Comment Submitted:

I understand and agree we need clean energy and lots of it. In pursuit of clean energy, I urge you to adopt the principle of "First Do No Harm." There are living things in our deserts. We've already made a mess of the natural world by imposing our civilization upon it and by trying to remake it. We need to help heal the natural world, not disrupt more of it.

We are at a crossroad. We must acknowledge our responsibility to the earth, which has sustained us but which has started kicking back for all the disruptions we have caused. I know many groups of people that agree. We must take positive steps to heal the earth without causing more disruption.

Now please do the right thing by Mother Earth. Stop, reverse and prevent fast-track approvals for solar installations on all public land; allow time and properly study potential impacts to ecosystems. Meanwhile, encourage city dwellers to solarize their rooftops, instead.

Thank you for your comment, Jeremy Drew.

The comment tracking number that has been assigned to your comment is SEDDSupp20088.

Comment Date: January 26, 2012 18:54:54PM

Supplement to the Draft Solar PEIS

Comment ID: SEDDSupp20088

First Name: Jeremy

Middle Initial: L

Last Name: Drew

Organization: Lincoln County, Nevada

Address: PO Box 90

Address 2:

Address 3:

City: Pioche

State: NV

Zip: 89043

Country: USA

Privacy Preference: Don't withhold name or address from public record

Attachment: 2012-01-17 Final Lincoln County NV Ltr and Comment to Solar SPEIS.pdf

Comment Submitted:



Board of County Commissioners

Lincoln County, Nevada

P.O. Box 90 – Pioche, Nevada 89043

Telephone (775) 962-5390

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COUNTY COMMISSIONERS

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COUNTY CLERK

Lisa C. Lloyd

January 17, 2012

Solar Energy Draft Programmatic EIS

Attn: Ms Heidi M. Hartmann, Document Manager

Argonne National Laboratory

9700 Cass Avenue - EVS/240

Argonne, Illinois 60439

RE: Comments to Draft Supplemental Programmatic Environmental Impact Statement
for Solar Energy Development in Six Southwestern States

Dear Ms. Hartmann:

Lincoln County, Nevada has completed a comprehensive review of the Draft Supplemental Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States (DSPEIS) and provides the following comments thereto. Lincoln County has participated extensively in the National Environmental Policy Act (NEPA) process leading to release of the DSPEIS for public comment. During the summer of 2009, Lincoln County, through the Bureau of Land Management's Nevada State Director, requested that proposed Solar Energy Zones in Delamar Valley, Dry Lake Valley North and in the vicinity of the East Mormon Mountains be included in the scope of the Programmatic Environmental Impact Statement for Solar Energy Development (PEIS). The Board of Lincoln County Commissioners believes that utility-scale solar energy development on BLM-administered land, if done in the right locations, at an appropriate scale and in a manner which avoids, minimizes and/or otherwise mitigates impacts to other multiple uses, particularly to permitted grazing of livestock, can contribute to energy security in the United States and provide important economic and fiscal benefits in Lincoln County.

At BLM's invitation, Lincoln County executed a Memorandum of Understanding with the Bureau of Land Management and Department of Energy on August 3, 2009 wherein Lincoln County became a Cooperating Agency regarding preparation of the DPEIS. In a

letter dated September 8, 2009, Lincoln County provided BLM's PEIS contractor with extensive comments on the scope of issues to be addressed with the DPEIS. In this letter, Lincoln County also requested that BLM significantly reduce the size of and recommended specific locations for the boundaries of the Delamar Valley SEZ, the Dry Lake Valley North SEZ and the East Mormon Mountains SEZ. Over the past year, Lincoln County has, in its role as a Cooperating Agency, reviewed and provided extensive written comments to Chapters 3, 5, 6, 7, 11.2, 11.4 and 11.5 of the Administrative Draft Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States (ADPEIS).

In a March 7, 2011 letter, Lincoln County provided BLM's PEIS contractor with comprehensive comments to the DPEIS. Lincoln County's comments have consistently sought to encourage BLM to identify and evaluate SEZs in Lincoln County of appropriate scale and location, which avoid or minimize impacts to other multiple uses, particularly to permitted grazing of livestock and recreation. Lincoln County's many previously submitted comments have also been intended to improve the accuracy and scientific defensibility of the Programmatic Environmental Impact Statement for Solar Energy Development. Lincoln County desires that the PEIS serve to facilitate expeditious utility-scale solar development on select public lands in the County.

The DSPEIS has responded favorably to many comments submitted by Lincoln County on the DPEIS. Lincoln County is particularly pleased that BLM/DOE have elected to eliminate the proposed Delamar Valley and East Mormon Mountain SEZs from further consideration. Lincoln County commends BLM/DOE for reducing the size of the proposed Dry Lake Valley North SEZ, although the area of the SEZ in the DSPEIS remains excessive and should be further reduced to 10,000 acres contained wholly within the Ely Springs Cattle Grazing Allotment. The former Delamar Valley SEZ, the East Mormon Mountains SEZ and the area of Dry Lake Valley North SEZ dropped from further consideration by BLM should be permanently designated as Solar Exclusion Areas. None of this "unsuitable" acreage should be available as Solar Right-of-Way Variance Areas.

Unfortunately, review of the DSPEIS by Lincoln County indicates a document which has not responded to many of the substantive comments offered over the past several months by the County. Most importantly, BLM's Preferred Alternative, the Modified Solar Energy Development Alternative, leaves open the potential for solar energy development to be proposed by developers in areas of Lincoln County at which significant impacts to other multiple-uses of public land would result. To avoid or minimize impacts of the Modified Solar Energy Development Alternative, Lincoln County suggests that BLM adopt an alternative which places a higher level of emphasis on development within SEZs and more requirements for coordination and consultation with local government. With the current expansive "Variance Area" and process, it appears that the current BLM Preferred Alternative is much more favorable to industry than local government and public land users. Alternatively, a "Modified SEZ Alternative" that includes the process for developing new SEZs seems to be the most logical solution.

The DSPEIS proposed Dry Lake Valley North SEZ coupled with the expansive Variance Area would enable solar energy development in Lincoln County at a scale and in

locations which will not effectively avoid or minimize adverse impacts to the environment and permitted public land uses, especially range livestock grazing. Lincoln County encourages BLM and the Department of Energy (DOE) to consider and address the following comments when preparing the Final Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States (FPEIS).

General Comments

1. The County recognizes the value of combining solar development activities into an energy park (SEZ) rather than widely dispersed solar installations and existing right-of-way application processes. As such, the County **OPPOSES the Modified Solar Energy Development Alternative (BLM's Preferred Alternative) and supports Modified Solar Energy Zone Alternative** provided that SEZs are located in areas that limit the impacts to other multiple uses, critical habitats and resource values. **Lincoln County recommends that the FPEIS and any related Record of Decision identify the Modified Solar Energy Zone Program Alternative as the BLM Preferred Alternative.**

SEZs should be located in areas with "Low Potential for Conflict" per the Screening Criteria listed in Instruction Memorandum No. 2011-061 regarding Right-of-Way Management for Solar and Wind Energy issued by the Department of the Interior on February 7, 2011.

The Modified Solar Energy Zone Alternative will limit the exorbitant amount of time, money and energy (on behalf of the County, local stakeholders and State and Federal Agencies) that goes into making sure that solar development rights-of-way are "smart from the start" and sited in appropriate locations.

2. Lincoln County continues to fully support the Renewable Energy Goal found on page 73 of the Ely District Record of Decision and Approved Resource Management Plan dated August 2008 (BLM/NV/EL/PL-GI08/25+1793) that states "Goals – Renewable Energy: Provide opportunities for development of renewable energy sources such as wind, solar, biomass and other alternative energy sources while minimizing adverse impacts to other resources."

3. The County supports BLM's decision to eliminate the Delamar Valley and East Mormon Mountain SEZs and a large portion of the Dry Lake Valley North SEZ. To further avoid or minimize significant environmental and land use impacts, the County recommends that the Dry Lake Valley North SEZ be further reduced in size to 10,000 acres located entirely within the Ely Springs Cattle Grazing Allotment. Because of the high conflicts with existing and beneficial resources that serve Lincoln County and its citizens, Lincoln County will not support potential projects outside of the 10,000 acres described above.

4. Lincoln County does not support maintaining the former Delamar Valley and East Mormon Mountain SEZs and the eliminated area of the Dry Lake Valley North SEZ as solar variance areas. Rather, the Final Solar PEIS should identify these areas as solar exclusion areas.

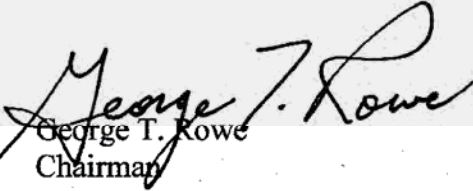
5. To avoid or minimize impacts of solar development on U.S. Air Force combat flight training; such development within the Dry Lake Valley North SEZ should be limited to a height of 200 feet.

Specific Comments

Attachment 1 contains Lincoln County's comments to specific chapters of the Draft Supplemental Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States.

I and my staff look forward to working with BLM, DOE, Argonne National Laboratory and their staffs in preparing a Final PEIS which facilitates utility-scale solar energy development on BLM-administered land in Lincoln County in the right locations, with specific technologies, at an appropriate scale and in a manner which avoids or minimizes impacts to other multiple uses, particularly to permitted grazing of livestock, and which contributes to energy security in the United States while providing economic and fiscal benefits in Lincoln County.

Sincerely,



George T. Rowe
Chairman

CC: Jane Summerson, Department of Energy
Linda Resseguie, Bureau of Land Management
Shannon C Stewart, NEPA Program Lead, BLM, Washington, DC
Rosemary Thomas, District Manager, Bureau of Land Management, Ely District
Victoria Barr, Field Manager, Bureau of Land Management Caliente Field Office
Jim May, Argonne National Laboratory

Attachment 1
Lincoln County, Nevada
Specific Comments to Draft Supplemental Programmatic
Environmental Impact Statement for Solar Energy
Development in Six Southwestern States

Document Review Form
Supplemental Solar Energy Development PEIS

Reviewer's Names: Connie Simkins, (775) 726-3511, jcciac@co.lincoln.nv.us; Cory Lytle, (775) 962-5165, clytle@lincolnnv.com; Jeremy Drew, (775) 883-1600, Jeremy@rci-nv.com; Mike Baughman, (775) 883-2051, mikebaughman@charter.net

Reviewer's Organization: Lincoln County, Nevada

Primary Disciplinary Area (e.g., ecology, land use planning, regulatory oversight):
Local Interest, County Infrastructure, Land Use, Grazing, Wildlife, Water, Socioeconomics

Section or Chapter Number: Chapter 1, Introduction

EIS Section	Page/Line	Comment/Suggested Revision
GENERAL COMMENT		<p>Lincoln County believes the Supplemental PEIS has taken significant steps towards encouraging development within the designated SEZs, which is the County's preference. The County questions the need for a "variance process" for development outside of the SEZs at this time, especially in Nevada, for the following reasons:</p> <p>The "Reasonably Foreseeable Develop Scenario" (RFDS) for Nevada reported in Table 1.6-1 calls for 1,701 MW or 15,309 acres of solar development on BLM-administered lands over the next 20 years. Based on the assumptions used in this calculation, the County believes this is more than adequate to meeting Nevada's solar demand.</p> <p>Table 1.7-2 reports "Approved Solar Projects on BLM-Administered Lands as of August 15, 2011". The table listed 3 projects in Nevada totaling 1,057 MWs on 8,091 acres.</p> <p>Subtracting the approved Nevada Solar Projects from the RFDS leaves a demand for 644 MW on 7,218 acres of BLM-administered land.</p> <p>In addition, Section 1.7.2 reports that there are 25 pending solar applications within Nevada.</p> <p>Yet, the Supplemental DEIS currently identifies 60,395 acres of BLM-administered public lands as solar SEZs under the "Modified SEZ Alternative", plus allowances for modifying or developing new SEZs, plus allowances for a "variance process".</p>

EIS Section	Page/Line	Comment/Suggested Revision
		<p>Lincoln County believes that the “Modified SEZ Alternative” has provided more than adequate lands for solar development within SEZs per its own RFDS analysis. As such, a moratorium on “variance applications” specific to Nevada should be implemented until:</p> <ol style="list-style-type: none"> 1. All 25 pending applications are processed, and 2. Competitive offerings for development within the SEZs have been offered <p>Such a moratorium will not curtail solar development in the event that a better development area is identified because a new SEZ could be established or an existing SEZ could be modified. This approach would allow BLM Nevada to catch up on pending solar applications, while providing time and focus for the SEZ-approach to get up and running. There is ample SEZ area to meet the RFDS within Nevada and there is no reason to spend more time, money and resources developing/processing additional “variance applications” until the SEZ approach is in place.</p>
1.4	1-5 /32-34	<p>Lincoln County understands that withdrawal of SEZ areas from mineral entry and applications for new rights-of-way may be necessary to prevent the filing of nuisance mining claims in areas planned for competitive leasing for solar development. Any such withdrawal or segregation of SEZs must not prohibit other ongoing multiple uses such as permitted grazing by livestock, public access and recreation.</p>
1.5	1-6/19-21	<p>Under the current definition of “utility-scale solar development” (20 MW or more), it is possible that projects utilizing current technologies could be as large as 200 acres and not qualify as “utility-scale”. This is a significant disturbance area on public lands, especially in fragile desert ecosystems. The County suggests the definition of “utility-scale” be expanded to include any project that will impact more than 40-acres of public lands.</p>
1.6	1-7/23-28	<p>The calculation of the “Reasonably Foreseeable Development Scenario” (RFDS) is likely an over-estimation of solar demand as it doesn’t take into consideration what percentage of each State’s renewable energy portfolio standard has already been satisfied. The Final EIS should adjust the RFDS to account for this.</p>
1.7.2	General Comment on “Pending Applications”	<p>Lincoln County would prefer that pending solar applications (regardless of whether they are in or out of SEZs) be processed under the provisions of the ROD for the PEIS, particularly if they are early in the NEPA</p>

EIS Section	Page/Line	Comment/Suggested Revision
		<p>process.</p> <p>The June 30, 2009 date seems to be the more appropriate cut-off date, rather than the date of issuance of the Supplemental PEIS.</p> <p>This approach ensures a more consistent process, and better achieves the goals of the PEIS.</p>
1.7.2	1-10/16-18 and 32-36	<p>Lincoln County is in full support of the BLM's discretion to deny pending solar right-of-way applications that are insufficient or in zones of "High Potential for Conflict". This should include rights-of-way that are not supported by local and State governments, or where there has been a lack of local coordination by the project proponent.</p>
1.7.2	1-11/14-15	<p>"Pending applications on lands proposed as exclusion areas for utility-scale solar energy development in the Final Solar PEIS <i>are likely candidates for denial.</i>" The language <i>in bold italic text</i> should be stricken and replaced by "...shall be denied." Another sentence should be added for pending applications on lands proposed as variance areas. One suggestion would be "Pending applications on lands proposed as variance areas for utility-scale solar energy development in the Final Solar PEIS will have to meet the requirements of the variance process unless a Draft EIS has already been published."</p>
1.7.2	1-12/11-12	<p>This sentence indicates that in Nevada there are 25 "pending first-in-line solar applications". There should be a moratorium on any new "variance applications" until decisions have been made on these 25 pending applications.</p>
1.8.2	1-14/22-29	<p>The Final Solar PEIS and rulemaking should propose that BLM be authorized to utilize revenues from leasing of SEZs to undertake any additional NEPA compliance activities required by BLM to authorize construction and operation of solar projects within SEZs. In addition, the Final Solar PEIS and rulemaking should propose that BLM be authorized to utilize revenues from leasing of SEZs to design and implement measures to mitigate unavoidable impacts of solar development and operation upon other public land multiple-uses within or adjacent to solar projects.</p>
1.8.2	1-14/31-35	<p>The protracted schedule for the proposed rulemaking would effectively result in no leasing of SEZs for up to two years. To mitigate this excessive delay, BLM should commit to undertake an expedited rulemaking process which would result in a final rule completed by late Spring</p>

EIS Section	Page/Line	Comment/Suggested Revision
		2012, or soon after the Solar PEIS ROD is anticipated to be issued.
1.8.2	1-15/32-36	If SEZs are to be leased on a competitive basis, then a system of land use authorization similar to that under BLM's geothermal leasing program should be adopted in lieu of Right-of-Way authorizations. Lincoln County agrees with the requirement for the submission on a POD, and recommends that the FSPEIS make clear that said POD would include measures to avoid or minimize impacts and mitigate unavoidable impacts. BLM's geothermal leasing program uses competitive leasing revenues to process land use authorizations for projects, not cost-recovery fees. In like fashion, SEZ lease revenues, not cost-recovery fees, should be used to process land uses authorizations and complete NEPA compliance for projects located within said competitive lease areas.

Section or Chapter Number: Chapter 2 – BLM Alternatives

EIS Section	Page/Line	Comment/Suggested Revision
GENERAL COMMENT		
2.1	General Comment on the "No Action Alternative"	Lincoln County does NOT support the "No Action Alternative"
2.2.1.1	Entire Section	This section fails to address the necessary changes in land use authorizations which would result if BLM implements a competitive leasing process. The Final Solar PEIS should describe a land use authorization process similar to that currently used by BLM for geothermal lease areas. In the case of geothermal lease areas, no right-of-way authorizations are required within individual or unitized lease areas. In addition, cost recovery fees are not required for geothermal project developers as such costs are paid for from the BLM proceeds of competitive geothermal leases. A similar program must be described here and elsewhere in the Final Solar SEIS for development within SEZs.
2.2.1.1	2-3/12-14	If it is anticipated that all ROW applications for solar projects will be Category 6, full cost-recovery applications, then where is the permitting time/cost savings attributable to the Solar PEIS? The extensive analyses completed for the Solar PEIS should enable BLM to complete processing of land use authorizations

EIS Section	Page/Line	Comment/Suggested Revision
		for projects within SEZs in an expeditious and cost effective manner. Said anticipated savings in permitting time and cost must be discussed in the Final Solar PEIS.
2.2.1.1	2-5/21-28	The process and timeframes described here are apparently not being applied uniformly by BLM. Lincoln County is aware of an application for solar development in northern Delamar Valley which has been pending for 3 years without any apparent action by either the proponent to provide, or the BLM to require a Plan of Development (see Table A-1; NVN 086350). The Final Solar PEIS should provide a table of the status and schedule for BLM action on all pending applications for solar projects in the six-state study area.
2.2.1.1	2-5/35-45	Lincoln County does NOT support the “Notification of Livestock Grazing Operators” provision of the right-of-way authorization process. Every effort should be made to minimize impacts on existing valid uses of public lands. Rather than simply notifying the permittee that part of, or their entire permit may be canceled, the BLM and/or project proponent should work with the permittee collaboratively to develop a project that minimizes its impact on the operation. This is yet another reason that Lincoln County supports development only within SEZs because it will minimize or eliminate this sort of conflict with existing valid uses of public lands.
2.2.1.1	2-6/22-24	Lincoln County supports the BLM’s requirement for all renewable energy developers to hold a Performance and Reclamation Bond.
2.2.1.1	2-9/34-40	This section of the final SPEIS should include the following text, “To avoid or minimize impacts of solar development on U.S. Air Force combat flight training; such development within the Dry Lake Valley North SEZ should be limited to a height of 200 feet.
2.2.1.2	2-13/36-37	Lincoln County does NOT support the following statement, “Development of an adaptive management and monitoring plan will be coordinated with potentially affected natural resource management agencies.” This does not allow for coordination and consultation with local governments that may be affected (either positively or negatively) with the plan. This sentence should be altered to include “...with potentially affected natural resource management agencies, <i>state environmental and wildlife agencies, and any affected units of local government.</i> ”
2.2.1.2	2-14/1-4	Lincoln County is pleased to see that the BLM is working collaboratively with ARS and USGS to develop monitoring strategies, and encourages this partnership in

EIS Section	Page/Line	Comment/Suggested Revision
		the future.
2.2.2	General Comment on the “Modified Solar Energy Development Alternative”	<p>Lincoln County remains in favor of the “Modified SEZ Alternative” over the “Modified Solar Energy Development Alternative – BLM Preferred Alternative”. BLM’s preferred alternative would be more palatable with a higher level of emphasis on development within SEZs and more requirements for coordination and consultation with local government. With the current expansive “Variance Area” and process, it appears that the BLM Preferred Alternative is much more favorable to industry than local government and public land users. Alternatively, a “Modified SEZ Alternative” that includes the process for developing new SEZs seems to be the most logical solution.</p> <p>The County believes some of the particular provisions of this alternative need to be revised to encourage and require closer coordination and consultation with local government (see various section-specific comments and suggestions).</p> <p>The County DOES support the SEZ concept, but does NOT support the variance process at this time (see general comments under Section 1.0 for more detailed discussion).</p> <p>The County believes that the variance process, specific to Nevada, should be suspended until the 25 pending solar applications are processed, and development within the SEZs is given an opportunity to succeed. Per this document, the BLM/DOE has identified significantly more acreage within SEZ designations than should be required over the next 20 years per the BLM’s RFDS analysis.</p>
2.2.2.1	General Comment on the “Proposed Right-of- Way Exclusion Areas”	Lincoln County supports the concept of Right-of-Way Exclusion Areas.
2.2.2.2	2-15/41-46	Lincoln County fully supports BLM’s decision to drop the Delamar Valley and East Mormon Mountain SEZ as well as the reduced and reconfigured Dry Lake Valley North SEZ to include only that portion within the western half of the Ely Springs Cattle Allotment.

EIS Section	Page/Line	Comment/Suggested Revision
Table 2.2-1 “Revised Areas for Exclusion under the BLM’s Modified Solar Energy Development Program Alternative”	2-16 and 17	Lincoln County generally supports the Solar Exclusion areas, and offers the following suggestions:
	13. and 14.	This should include Big Game Migratory Corridors and Winter Ranges identified by State Wildlife Agencies. It is our experience that the BLM Land Use Plans do not always have the most current information in this regard.
	17.	National Recreational Trails and National Back Country Byways should also include an offset, similar to that for National Historic and Scenic Trails listed under 18.
	26.	This list should include the Delamar Valley SEZ, East Mormon Mountain SEZ, and portions of the Dry Lake Valley North SEZ that have been dropped for consideration as SEZs. Lincoln County does NOT believe that these areas are suitable for solar development due to the high potential for resource impacts (especially cumulative impacts with other foreseeable projects) and conflicts with existing multiple uses.
2.2.2.2.2	2-19/45-46	Lincoln County supports Secretarial-level land use authorization decisions as described here.
2.2.2.2.3	2-24/14-16	If a ROW lease authorization is issued as a result of competitive leasing, then the normal cost-recovery process and fees applicable to ROW authorizations should not apply. Rather, as with BLM’s competitive geothermal leasing process, lease revenues should be used by BLM to cover costs of authorizing solar project related land uses within solar lease areas. This approach to authorizing land uses authorizations within solar lease areas must be described fully in the Final Solar PEIS.
2.2.2.2.3	2-24 / 39-41	Lincoln County supports the development of regional mitigation plans, and supports the concept for such a plan that is specific to the County. The County is formally requesting to be involved in the development of this plan as a Consulting Agency, and supports inclusion of the plan in the Final PEIS.
2.2.2.2.3	2-25 / 6-7	Lincoln County supports the concept of developers funding conservation priorities identified in regional mitigations plans, as long as the regions are properly defined such that mitigation takes place in spatially and ecologically similar areas. For example, the County would not support funds derived from development in the Dry Lake Valley North SEZ to be used for mitigation in Clark County.
2.2.2.2.3	2-25 / 30-33	Counties should be included in this bullet point.

EIS Section	Page/Line	Comment/Suggested Revision
2.2.2.2.3	2-26/13-15	This bullet-point appears to be in conflict with the text in Section 2.2.1.1, Page 2-3, Lines 12-14 which states that all ROW applications for solar projects will be Category 6, full cost-recovery applications. If all applications will be treated by BLM as Category 6 for purposes of cost-recovery, then where is the permitting time/cost savings attributable to development within SEZs. The extensive analyses completed for the Solar PEIS should enable BLM to complete processing of land use authorizations for projects within SEZs in an expeditious and cost effective manner. Said anticipated savings in permitting time and cost must be confirmed and discussed in the Final Solar PEIS.
2.2.2.2.4	2-26 / 42-45	Lincoln County understands that withdrawal of SEZ areas from mineral entry and applications for new rights-of-way may be necessary to prevent the filing of nuisance mining claims in areas planed for competitive leasing for solar development. Any such withdrawal or segregation of SEZs must not prohibit other ongoing multiple uses such as permitted grazing by livestock, public access and recreation.
2.2.2.2.5	General Comments on “Proposed Identification Protocol for New SEZs”	Lincoln County agrees that provisions should be made to allow for identification of new SEZs or to alter existing SEZs. However, as currently written the protocol does not make enough allowances for early coordination and consultation with local government. The following section-specific comments, and those offered under Appendix D, attempt to provide some ideas on how to improve this process.
2.2.2.2.5	2-28 / 21-24	The petition process should require any petitioner to contact and coordinate and consult with State and Local governments during the petition process. In fact, the petition application should require input from both entities. This will encourage early and continued coordination between the proponent/petitioner and permitting agencies, and will also help to avoid conflicts in developing new or altering existing SEZs.
2.2.2.2.5	2-28 / 36-38	Reviewing the need for new solar SEZs at a minimum of every 5 years seems excessive. Given the provision for outside entities to petition for new or altered SEZs, the BLM should revise this requirement to coincide with larger RMP updates or on an “as needed basis”. This would save time and effort for both the BLM and all interested parties.
Figure 2.2-1	2-29	Lincoln County supports the general concept, but would recommend re-ordering the steps by switching Step 3 to

EIS Section	Page/Line	Comment/Suggested Revision
		<p>Step 2, so that environmental screening criteria have a higher priority. It makes no sense to explore a site's technical and economic feasibility if it is going to be disqualified in the next step by environmental constraints.</p> <p>In terms of Step 3, bullet #3 is essential to the process. Locally relevant screening criteria and considerations MUST be implemented for this process to work as intended. Local input and criteria will also help with the technical and economic feasibility criteria, particularly in regards to infrastructure access and local permitting.</p> <p>The current Step 2 "Establish Technical and Economic Feasibility Criteria" should include an additional bullet for "Ability to obtain State and Local Permits", this bullet should also be added to current Step 3 "Apply Environmental Screening Criteria"</p>
2.2.2.3	General Comments on "Proposed Variance Areas..."	<p>Lincoln County questions the need for a "variance process" for development outside of the SEZs at this time, especially in Nevada, for the following reasons:</p> <p>The "Reasonably Foreseeable Develop Scenario" for Nevada reported in Table 1.6-1 calls for 1,701 MW or 15,309 acres of solar development on BLM-administered lands over the next 20 years. Based on the assumptions used in this calculation, the County believes this is more than adequate in terms of meeting Nevada's solar demand.</p> <p>Table 1.7-2 reports "Approved Solar Projects on BLM-Administered Lands as of August 15, 2011". The table listed 3 projects in Nevada totaling 1,057 MWs on 8,091 acres. Subtracting the approved Nevada Solar Projects from the RFDS leaves a demand for 644 MW on 7,218 acres of BLM-administered land. In addition, Section 1.7.2 reports that there are 25 pending solar applications within Nevada.</p> <p>Yet, the Supplemental DEIS currently identifies 60,395 acres of BLM-administered public lands as solar SEZs under the "Modified SEZ Alternative", plus allowances for modifying or developing new SEZs, plus allowances for a "variance process".</p> <p>Lincoln County believes that the "Modified SEZ Alternative" has provided more than adequate lands for</p>

EIS Section	Page/Line	Comment/Suggested Revision
		<p>solar development within SEZs per its own RFDS analysis, and that doesn't account for permitted solar projects, or those in the planning pipeline. As such, a moratorium on "variance applications" specific to Nevada should be implemented until:</p> <ol style="list-style-type: none"> 3. All 25 pending applications are processed, and 4. Competitive offerings for development within the SEZs have been processed <p>Such a moratorium will not curtail solar development in the event that a better development area is identified because a new SEZ could be established or an existing SEZ could be modified. This approach would allow BLM Nevada to catch up on pending solar applications, while providing time and focus for the SEZ-approach to get up and running. There is ample SEZ area to meet the RFDS within Nevada, there is no reason to spend more time, money and resources exploring additional "variance applications" until the SEZ approach is in place.</p>
2.2.2.2.6	2-30/entire section	<p>This section does not recognize the ability to export solar energy between states in the six-state study area. The Final Solar PEIS should seek to balance supply and demand for renewable energy within the aggregated six-state study area not within individual states.</p>
2.2.2.3	2-33 / 10-12	<p>Under the current definition of "utility-scale solar development" (20 MW or more), it is possible that projects utilizing current technologies could be as large as 200 acres and not qualify as "utility-scale". This is a significant disturbance area on public lands, especially in fragile desert ecosystems. The County suggests the definition of "utility-scale" be expanded to include any project that will impact more than 40-acres of public lands.</p>
2.2.2.3.1	2-33 / 30-31	<p>Lincoln County disagrees with the statement that "Variances may be needed in the near-term because the lands identified as SEZs might be insufficient to accommodate demand for utility-scale solar development." Per the discussion offered under "General Comments" (above 2 entries) the SEZ area within Nevada is more than sufficient to meet solar demand as calculated by the BLMs RFDS analysis. Even if the designated SEZ area is too small to meet demand, this document provides for development of new SEZs. At least in Nevada, this statement seems to be unwarranted.</p>
2.2.2.3.1	2-33 / 45-46	<p>Lincoln County supports the concept of at least two pre-</p>

EIS Section	Page/Line	Comment/Suggested Revision
	2-34 / 5-9	<p>application meetings before solar rights-of-way or “variances” are filed. However, the second meeting should be held in close proximity to the proposed project (i.e. the “variance” meeting to coordinate with local stakeholders for projects in Lincoln County should be held in Lincoln County, not Reno or Las Vegas).</p> <p>It should be a requirement that local government is present for at least one pre-application meeting to ensure early coordination and consultation. However, it would be much better if a project proponent seeking a “variance” be required to consult with the local government and State as part of the variance application process. This ensures early coordination and will limit projects that have major obstacles from costing time and money during the pre-application hearing process.</p>
2.2.2.3.1	General Comment on the “Variance Application Process”	<p>Lincoln County generally agrees with the factors that BLM will consider as part of the application process and/or Plan of Development. In fact, this may be a list that needs to be incorporated into the new or revised SEZ development process.</p> <p>In addition, the County suggests adding the following requirements for the POD and for BLM consideration:</p> <ul style="list-style-type: none"> • Any power purchase agreement for the power that will be generated • Documentation that the project proponent has coordinated with State and local (County and/or municipal) government, and that local government is willing to provide required special use permits <p><i>This should be required of the developer for any new renewable energy right-of-way in order to avoid pitting local government against the project proponent and/or BLM due to a lack of early coordination. This will save time, money and effort for everyone in the long-term and result in less waste at all levels of government, and a much better end product with buy-in at all levels.</i></p>
2.2.2.3.1	2-38 / 16-20	<p>Lincoln County agrees that the BLM should be coordinating with appropriate government agencies; however, some of this coordination should also be the responsibility of the project proponent as suggested in the previous comment.</p>
2.2.2.3.1	2-39 / 37	<p>Lincoln County does not agree with the statement</p>

EIS Section	Page/Line	Comment/Suggested Revision
		<p>“Communication with any potentially affected grazing permittee/lessee” as it does not meet the County’s no net loss of grazing AUMs position.</p> <p>As described in Section 2.2.2.1 this means alerting the permittee/lessee that some or their entire grazing permit may be suspended. The County suggests changing this statement to “Coordination and consultation with any potentially affected grazing permittee/lessee to avoid, minimize or mitigate loss of grazing capacity.”</p> <p>Replacing valid multiple uses with a singular use does not accomplish the BLM’s multiple use mandate, and effort should be made to accommodate both forms of valid uses on public lands.</p>
2.2.2.3.2	2-40 / 10-15	Lincoln County supports the BLM’s authority to deny applications, the same authority should be afforded to SEZ petitions.
2.2.2.3.2	2-40 / 20	Lincoln County supports conducting these efforts at the State or field office level and would stress the importance of including the field office in order to facilitate direct coordination and consultation with local government.
2.3	2-42/33	This sentence should be revised to read, “Avoiding or minimizing potential negative environmental, <i>social, cultural, and economic impacts.</i> ”
Figure 2.3-4	2-47	This map is somewhat misleading in that it doesn’t appear to account for the Solar Exclusion Areas.
Table 2.3-2	2-52 Rangeland Resources and Recreation	Identified impacts on these two multiple uses alone is why Lincoln County is much more favorable of the “Modified SEZ Alternative”. There is too much potential for impact from the current “Modified Program Alternative” when the “Modified SEZ Alternative” provides ample development potential.
Table 2.3-1	2-53 Military and Civilian Aviation	Lincoln County is fully supportive of the DOD operations within Lincoln County and suggest that the BLM adopt any height limitations suggested by the DOD.
Table 2.3-2	2-53 Geologic Setting and Soil Resources	It is imperative that the project footprint is minimized to the greatest practical extent.
Table 2.3-2	2-54 Vegetation	It is imperative that the project footprint is minimized to the greatest practical extent.
2.3.1.3	2-68/35-43	If a ROW lease authorization is issued as a result of competitive leasing, then the normal cost-recovery process and fees applicable to ROW authorizations

EIS Section	Page/Line	Comment/Suggested Revision
		should not apply. Rather, as with BLM’s competitive geothermal leasing process, lease revenues should be used by BLM to cover costs of authorizing solar project related land uses within solar lease areas. This approach to authorizing land uses authorizations within solar lease areas must be described fully in the Final Solar PEIS.
2.3.1.7	2-70/18-29 Table 2.3-3	This section and related Table 2.3-3 do not recognize the ability to export solar energy between states in the six-state study area. The Final Solar PEIS should seek to balance supply and demand for renewable energy within the aggregated six-state study area not within individual states.
2.3.2.7	2-75/entire section	This section does not recognize the ability to export solar energy between states in the six-state study area. The Final Solar PEIS should seek to balance supply and demand for renewable energy within the aggregated six-state study area not within individual states.
2.3.4	2-79/Table 2.3-4	The description here of the Modified SEZ Alternative to meet projected demand for solar energy development does not reflect the ability to export solar energy between states in the six-state study area. The Final Solar PEIS should seek to balance supply and demand for renewable energy within the aggregated six-state study area not within individual states.

Section or Chapter Number: Chapter 3, DOE Alternatives

EIS Section	Page/Line	Comment/Suggested Revision
GENERAL COMMENT		
3.1	General Comment to “No Action Alternative” for DOE	Lincoln County does NOT support the “No Action Alternative” as it relates to the Department of Energy (DOE).
3.2	General Comment to “Action Alternative – DOE’s Proposed Programmatic Environmental Guidance”	Lincoln County DOES support the “Action Alternative” as it relates to the DOE. The only caveat to this support is an increased emphasis on early and continued local involvement in solar projects. The following section specific comments would strengthen the involvement of local and state entities in the solar development process in order to achieve the goals of the “General Mitigation Measures” and ensure incorporation of needed site and project-specific components.
3.2.1	3-1/35-36	Lincoln County DOES support “siting facilities in predetermined solar development zones” such as BLM designated SEZs, as long as the designation process

EIS Section	Page/Line	Comment/Suggested Revision
		includes approval from local and State government.
3.2.1	3-1/42-43	Lincoln County supports “...early correspondence between the applicant and appropriate permitting or interested government agencies” and would go one step further to make such correspondence mandatory for any solar project.
3.2.1	3-2/5-7	<p>Lincoln County supports making “...early contact with local officials...” “...to explore all applicable regulations and address concerns unique to solar power generation projects”.</p> <p>In addition, “early contact” should be more clearly defined. For public land projects, local officials (County and State) should be contacted and coordinated and consulted with prior to initiation of the EIS process, and ideally, prior to submission of an application for right-of-way, variance, SEZ designation, etc.</p> <p>“Local officials” should also be clearly defined to include the appropriate County (Planning Department and/or County Commission) and State (Energy Office, Department of Wildlife and/or Conservation) officials.</p>
3.2.2	3-2/19-22	Lincoln County supports this statement, with the caveat that the term “Emphasize” be changed to “Require” and the inclusion of “holders of existing land use authorizations and permits”.
3.2.2	3-2/24-29	Lincoln County supports these two statements.
3.2.3	3-2/34-37	Lincoln County fully supports these two statements.
3.2.3	3-2/39	Lincoln County fully supports the provision to “Avoid siting projects on prime or unique farmland” and would further support the inclusion of “...and rangelands.”
3.2.3	3-2/41-46	Lincoln County fully supports avoiding impacts to the listed areas and would further support the inclusion of the statement “...lands identified as incompatible for renewable energy development by local government.”
3.2.3	3-3/1-18	Lincoln County fully supports all of the statements as listed, and would suggest adding at least one more statement addressing coordination with the Department of Defense and/or FAA to coordinate development of projects in or near areas important for training and airspace.
3.2.4	General Comment on “Water Resources and	Lincoln County supports the statements as listed, and would stress the importance of minimizing project footprints to the greatest practical extent.

EIS Section	Page/Line	Comment/Suggested Revision
	Erosion Control”	
3.2.5	General Comment on “Biological Resources”	Lincoln County supports the statements as listed.
3.2.5	3-4/20-22	Lincoln County generally supports this statement; however, it should include state wildlife agencies in addition to state environmental agencies for early consultation.
3.2.5	3-4/25-26	Lincoln County generally supports this statement; however, wildlife migration corridors should be added to the list of “environmentally sensitive areas”, alternatively the sentence could read “...critical wildlife habitats <i>and migration corridors</i> ”
3.2.5	3-4/37 and 40	The word “Consider...” should be changed to “Require...” for these two statements.
3.2.6	General Comment on “Air Quality”	Lincoln County generally supports the listed statements, and would emphasize the need for early coordination and consultation with local government, particularly County or municipal planning departments, to avoid conflicts with fugitive dust from solar development and operation with residential or other developed areas.
3.2.8	General Comment on “Visual Resources and Aesthetics”	Lincoln County generally supports the listed statements, and would emphasize the need for early coordination and consultation with local government, particularly County or municipal planning departments, to avoid conflicts with visual resources and aesthetics.
3.2.9	General Comment on “Socioeconomics”	A new bullet should be added as follows, “Ensure that purchased materials, supplies and equipment required to construct and maintain solar projects use the host local jurisdiction as the point of delivery to facilitate said jurisdiction securing full sales and use tax benefits for said purchases.”
3.2.9	3-6 / 8	Lincoln County agrees with the statement to “Site facilities to maximize local, regional, and state-wide economic benefits” and believes the best way to do so is through early and continued coordination and consultation of siting projects with local and state entities (such as County Commissions, County Planning Departments, County/Regional/State Development Authorities, State Energy Offices, etc.). This would be a good addition to this statement.
3.3.1	3-7 / 36-41	This paragraph describes environmental mitigation recommendations and at one point in line 39 describes “...potentially applicable mitigation measures...”. It

EIS Section	Page/Line	Comment/Suggested Revision
		is unclear if the DOE will require project proponents to develop mitigation measures or not. Development of mitigation measures to “avoid, minimize, and mitigate” environmental impacts should be required beginning with project scoping and continuing throughout the public NEPA process. Mitigation planning and implementation efforts conducted after the project is approved and permitted have a track record of poor success.

Section or Chapter Number: Appendix B, Solar Energy Zones Dropped from Further Consideration

EIS Section	Page/Line	Comment/Suggested Revision
B.3.1.3	B-20/12-15	Lincoln County does not support retaining the lands that composed the Delamar Valley SEZ as solar variance area. This area has now been extensively evaluated through the NEPA process and an individual solar project could not be sited in Delamar Valley which would effectively avoid the many environmental and land use issues which characterize this former proposed SEZ. Rather than being retained as a solar variance area the lands that composed the Delamar Valley SEZ should be identified as a solar exclusion area in the Final Solar PEIS. Furthermore, Lincoln County will not support proposed projects in this area because of issues stated in the Draft PEIS.
B.3.2.3	B-26/13-16	Lincoln County does not support retaining the lands that composed the East Mormon Mountain SEZ as solar variance area. This area has now been extensively evaluated through the NEPA process and an individual solar project could not be sited in the former East Mormon Mountain SEZ which would effectively avoid the many environmental and land use issues which characterize this location. Rather than being retained as a solar variance area the lands that composed the East Mormon Mountain SEZ should be identified as a solar exclusion area in the Final Solar PEIS. Furthermore, Lincoln County will not support proposed projects in this area because of issues stated in the Draft PEIS.

Section or Chapter Number: Appendix C, Action Plans for Solar Energy Zones to be Carried Forward

EIS Section	Page/Line	Comment/Suggested Revision
GENERAL COMMENT		<p>Lincoln County supports eliminating 48,148 acres of the Dry Lake North SEZ from further consideration, and supports maintaining a solar SEZ designation in the western portion of the Ely Springs Cattle Grazing Allotment. However, the County would rather see these two SEZ designated as solar development exclusion areas than “Solar Variance Areas”. Finding portions of these previously designated SEZs that are acceptable for solar development (and minimize impacts) will be most difficult, and require more time and money from all involved parties.</p> <p>In particular, any portion of the previously designated SEZ located between the Robber Roost Hills and Ely Springs Range (east of the new SEZ boundary) MUST be defined as exclusion area as development in this area would disrupt a major mule deer migration corridor.</p>
GENERAL COMMENT		<p>Within the remaining Dry Lake North SEZ, Lincoln County fully supports any design limitations, including development height restrictions, requested by the Department of Defense in an effort to minimize impacts to their aerial training missions in the area.</p>
C.4.3.3	C-191/8-9	<p>For reasons stated in its comments on the DPEIS, Lincoln County stands by its recommendation that the Dry Lake Valley North SEZ be limited to 10,000 acres all within the Ely Springs Cattle Grazing Allotment. Limiting the SEZ to this size will further avoid/minimize impacts to the environment, wildlife, existing authorized public land uses and DOD military training operations in the area while simultaneously providing sufficient land area for solar development commensurate with meeting Nevada’s RFDS. The Draft Solar SPEIS offers no rationale for proposing the Dry Lake Valley North as an area in excess of 10,000 acres and, if the SEZ is not further reduced in size, such a rationale must be included in the Final Solar PEIS. Furthering the argument for limiting the Dry Lake Valley North SEZ is the fact that Lincoln County will require an approved Special Use Permit or in some cases, a full Development Agreement for any potential solar projects. Proposed projects in locations that conflict and negatively impact Lincoln County resources will be denied.</p>
C.4.3.3	C-19/11-14	<p>Lincoln County does not support retaining the lands that have been eliminated from the Dry Lake Valley North SEZ as solar variance area. This area has now been extensively evaluated through the NEPA process and an individual</p>

EIS Section	Page/Line	Comment/Suggested Revision
		solar project could not be sited in the lands eliminated from the Dry Lake Valley North SEZ which would effectively avoid the many environmental and land use issues which characterize this location. Rather than being retained as a solar variance area the lands eliminated from the Dry Lake Valley North SEZ should be identified as a solar exclusion area in the Final Solar PEIS.
C.4.3.5.3	General to “Rangeland Resource” Section	Lincoln County supports re-evaluating the impacts to rangeland resources, and in particular existing grazing operations. The re-evaluation should include coordination with the permittees and the N-4 Grazing Board to best identify potential impacts.
C.4.3.5.4	General to “Recreation” Section	Lincoln County supports re-evaluating the impacts to recreation. The re-evaluation should include coordination and consultation with the recreational interests and the County to best identify potential impacts. Efforts should be made to ensure a no net loss of access to public lands adjacent to the SEZ.
C.4.3.5.8	C-194/26-41	<p>The Final Solar PEIS should clarify that the long-term monitoring of water resources and related stakeholder committee and performance of groundwater modeling analyses would not be required for photovoltaic projects which require very little water during construction and operations.</p> <p>This section discusses preparing a planning-level water resource inventory and groundwater model. This particular hydrographic basin has recently been subject to water right hearings specific to groundwater applications filed by the Southern Nevada Water Authority (SNWA). The Nevada Division of Water Resources (NDWR) has likely already prepared a water resources and water right inventory, and SNWA has already developed a regional groundwater model. These existing resources should be utilized to the practical extent to avoid duplication of efforts.</p> <p>Additionally, existing water rights holders, including the Lincoln County Water District, SNWA and Vidler Water Company should be contacted regarding the feasibility of leasing existing water rights rather than developing new water rights to serve future solar facilities. This may be another incentive to developing within the SEZ rather than filing for a variance.</p> <p>This section includes a great deal of discussion on</p>

EIS Section	Page/Line	Comment/Suggested Revision
		identification of jurisdictional water and ephemeral drainages. Will the SEZ be revised to avoid such areas? The County would recommend doing so if this analysis is going to be completed rather than waiting for a tiered EIS process.
C.4.3.5.9	General to “Ecological Resources” Section	The County is generally supportive of additional data gathering, which should include identifications of vegetation areas dominated by white sage. Any data gathering for wildlife species should be closely coordinated with the Nevada Department of Wildlife.
C.4.3.5.9	C-195/33-35	The reduced area of the Dry Lake Valley North SEZ has avoided wetland/riparian habitat so there should be no requirement for preliminary evaluations of surface water in this area.

Section or Chapter Number: Appendix D, Proposed Identification Protocol for New Solar Energy Zones

EIS Section	Page/Line	Comment/Suggested Revision
Appendix D	Entire Section	In addition to a process for identifying new solar energy zones, the Final Solar PEIS should include a protocol for identifying new solar energy exclusion areas. Appendix D could be easily modified to include a process for identification of new solar exclusion areas.
GENERAL COMMENT		<p>Lincoln County generally supports the concept of revising existing SEZs or developing new SEZs, ONLY IF there are provisions that mandate early and close coordination and consultation of SEZ development with both the State and County.</p> <p>The process currently included in Appendix D DOES NOT adequately require local involvement in developing or revising SEZs.</p> <p>Within the 5-step process identified in Appendix D, local involvement MUST occur within the first 3 steps, not relegated to step 4 or 5, which would require developers to invest too much money before any required consultation with local government. The County does not want to be in a position of opposing a project that has already had significant resources invested; every</p>

EIS Section	Page/Line	Comment/Suggested Revision
		effort must be made to avoid this scenario.
D.1	Comments General to “Assessing the Need for New SEZs”	<p>The BLM shouldn't be required to assess the need for developing new SEZs on a 5-year interval if the existing SEZs haven't reached capacity, particularly given the petition provision.</p> <p>The petition process as currently written completely undermines all of the time, effort and energy that has gone into developing the PEIS. Petitions should only be considered if there is a compelling reason why the proponent cannot develop a project within an existing SEZ.</p> <p>Any petition should be required to gather formal comments from both the County and State of Nevada regarding suitability of the proposed SEZ location. Comments should include the support or opposition of the commenting agency to the proposed site, and any foreseeable constraints to development in the SEZ. This input should be required as part of the petition so that BLM can assess local support or opposition to the project. It also ensures that the proponent is coordinating and consulting with local government early in the process, thereby eliminating the scenario described in the above General Comment.</p>
D.2	Comments General to “Establishment of Technical and Economic Feasibility Criteria”	Lincoln County generally agrees that such feasibility information and criteria should be established; however, the County questions the logic of this being the second step in the process. If an SEZ is going to be screened out in the following step because of environmental limitations it seems like a waste of resources to complete this step first. Only environmentally feasible sites should be considered before further technical and economic feasibility work is completed or required.
D.3	Comments General to “Apply Environmental Screening Criteria”	Lincoln County would suggest this become Step #2 in the process.
D.3.1	Program Exclusion Areas	Lincoln County believes that all of the area of the proposed 67,000 acre Dry Lake Valley North SEZ, except the western 10,000 acres within the Ely Springs Cattle Allotment already identified by Lincoln County as suitable for utility scale solar development should be identified as an Exclusion Area.
D.3.3	Comments	Lincoln County believes this is one of the most

EIS Section	Page/Line	Comment/Suggested Revision
	General to “Additional Locally Relevant Screening Criteria”	important steps in the process, and the current language in this section is not strong enough to ensure adequate local input. Please refer to the following comments for suggestions on improving this step of the process.
D.3.3	Page D-5 / Line 32	<p>This section currently reads, “State and field offices undertaking efforts to identify or expand SEZs <i>may</i> choose to identify and apply additional screening criteria based on local conditions and institutional knowledge in consultation with other local, State and federal authorities and Tribes.”</p> <p>The “may” should be changed to “shall”. Coordination with the listed stakeholders is absolutely imperative to developing an SEZ that is feasible and supported by the local community.</p> <p>Additional criteria should be added to require the State and/or field office to determine the general level of support or opposition of the SEZ by the local and state government, and part of the screening criteria should be determining if a project in the area could obtain all necessary local and state permits. This needs to be identified early in the process to avoid wasting time, money and resources.</p> <p>A pre-NEPA scoping meeting (similar to the proposed pre-applications meetings in the Variance Process) should also be held in the local community where the new or altered SEZ is to be located, in an effort to gain all possible “institutional knowledge”. This also encourages early community engagement and buy-in as part of the process.</p>
D.3.3	Page D-5 / Line 43-46	This sentence should include “potential interference with existing authorized land uses”. This is a key item to analyze since solar development alters public land use from multiple use management to sole use.
D.4.1	General Comments Regarding “Identification of Disturbed Sites”	Lincoln County supports the identification of disturbed sites for SEZs and solar development in general. This limits the disturbance of fragile desert ecosystems. That being said, areas that have burned and crossed an ecological threshold due to invasion of noxious or invasive weeds should be considered “disturbed sites”.

Thank you for your comment, Doris Lawless.

The comment tracking number that has been assigned to your comment is SEDDSupp20089.

Comment Date: January 26, 2012 19:10:26PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDSupp20089

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Attachment:

Comment Submitted:

I am requesting an extension of the public comment for the Solar PEIS Supplement in order to provide sufficient time to analyze the effects of adding such an expansive area to the project. One major reason is the effect it will have on our National Park. I am in favor of Solar Power. We need to end Oil and coal, but let's not ruin another part of our environment while extending our solar option.
What is the impact on the environment? What other process can be used?
Or are we just enhancing the wealth of the persons or companies that are proposing this project?

Thank you for your comment, Shaun Gonzales.

The comment tracking number that has been assigned to your comment is SEDDSupp20090.

Comment Date: January 26, 2012 19:18:44PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDSupp20090

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Privacy Preference: Withhold address from public record
Attachment: Comments on the Supplement.docx

Comment Submitted:

26 January 2011

Department of Interior and Department of Energy
Washington, D.C.

Re: Supplement to the Draft Solar Programmatic EIS

Please consider the following comments in response to the Supplement for the Draft Solar Programmatic Environmental Impact Statement (PEIS).

I support the Federal Government's intent in the Supplement to the Draft Solar Programmatic EIS (Supplement) to steer utility-scale solar energy development away from our most treasured and ecologically sensitive public lands. I believe the proposals in the Supplement, including the variance process and exclusion zones should be strengthened in the interest of responsible land stewardship, but also to support a more sustainable solar energy industry. I also believe it is incumbent upon the Departments of Interior and Energy to analyze alternatives that provide incentives for distributed generation and steer clean energy generation to already-disturbed lands.

Alternatives:

However, the scale of proposed renewable energy development on public lands, combined with other uses (fossil fuels, transmission lines, transportation, hunting, motorized recreation, hiking, camping, etc) place an unsustainable burden on our public lands. The Federal government's overarching emphasis on utility-scale renewable energy generation is irresponsible in light of these demands. For this reason, the Department of Energy (Energy) should consider a distributed generation alternative, including policies that could increase distributed clean energy generation such as Property Assessed Clean Energy (PACE) financing, and utilizing public buildings and parking lots for distributed generation deployment. In addition, both Department of Interior and Energy should strengthen their partnership with the Environmental Protection Agency's RE-Powering America's Land initiative to encourage energy development on already-disturbed lands.

Solar Energy Zones:

I support the removal of the Pisgah and Iron Mountain solar energy zones from the Draft Solar PEIS. The Pisgah SEZ fell within an "ecologically core" area, as identified by the Nature Conservancy's Mojave Desert Ecoregional Assessment, and subsequent surveys of plant and wildlife for the proposed Calico Solar power project. Along these lines, I believe that the Riverside East SEZ should be re-examined since industrial development in parts of the SEZ could disproportionately impact microphyll woodland. Such habitat is prevalent in the eastern portion of the SEZ. According to the US Fish and Wildlife Service, although such woodland constitutes only 0.5 percent of the desert land mass, it is believed to support approximately 80% of all bird nests in the Colorado/Sonoran deserts. These impacts should be closely examined.

Exclusion Zones:

Interior should designate all desert tortoise connectivity corridors (identified in Figure 2.2-2 of the Supplement) as exclusion zones. Particularly, the Ivanpah Valley (located in the eastern Mojave Desert, spanning Nevada and California near the city of Primm, Nevada) has exhibited robust desert tortoise populations, as well as other special status plants and wildlife, and is not suitable for further solar energy development. Interior has already permitted two projects (BrightSource Energy's ISEGS project, and First Solar's Silver State North) in the Ivanpah Valley. The ISEGS project alone is expected to impact hundreds of desert tortoises through displacement, translocation, and death. The Ivanpah Valley serves as a critical genetic linkage for the tortoise, but this linkage is narrow due to geography and development. For these reasons, Interior should add the entire Ivanpah Valley to its list of exclusion zones to prevent disrupting this ecological feature.

The Pisgah Valley should also be designated as an exclusion area. This area is identified as "ecologically core" in the Nature Conservancy's Mojave Desert Ecoregional Assessment, and hosts a diverse array of plant and wildlife.

Variance Process:

Although I believe all desert tortoise connectivity corridors should be treated as exclusion areas (not suitable for any solar development), in absence of such a requirement I would strongly support Option #2 for the Desert Tortoise Variance Process Requirements (section 2.2.2.3.1, page 2-35). In order to prevent further decline of this Federally protected species, it is imperative that we maintain tortoise habitat connectivity and genetic linkages, as noted in the revised recovery plan drafted by the US Fish and Wildlife Service. The condition regarding siting projects where native vegetation is "degraded", however, seems subjective and should be clarified because even land with "degraded" vegetation can still serve as a functional genetic linkage for tortoises. The maintenance of a suitable connectivity corridor at least three miles wide is a crucial aspect of this proposed requirement.

The rules established in the Solar PEIS should apply to all solar energy applications, and not just those submitted after October 28, 2011. Utility-scale solar facilities inherently require large amounts of land disturbance, and without requirements holding all developers to a variance process that maintains a healthy ecosystem, the intent of the Programmatic EIS is weakened.

Shaun Gonzales

Thank you for your comment, Kathleen Jennings.

The comment tracking number that has been assigned to your comment is SEDDSupp20091.

Comment Date: January 26, 2012 19:33:05PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDSupp20091

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Attachment:

Comment Submitted:

Please extend the review period for the draft PEIS to allow sufficient time for citizens to review the entire report--the proposed use of Morongo Basin land in particular is of great concern and deserves thorough understanding of the impact if approved.
Thank you

Kathleen Jennings

Thank you for your comment, Patricia Brennan.

The comment tracking number that has been assigned to your comment is SEDDSupp20092.

Comment Date: January 26, 2012 19:57:42PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDSupp20092

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Comment Submitted:

Dear BLM folks,

As a citizen who wants both robust protection of America's wildlife and their public land habitats as well as encouragement of solar power generation, I am writing to encourage you to strengthen protections for wildlife and natural resources in the current draft of the Solar Program's environmental impact statement.

The solar energy zones--areas identified with few if any wildlife and natural resource conflicts--are such a superb idea. As a person with deep, territorial roots in Arizona, I commend you for both the Brenda and Gillespie SEZs that currently have maps on <http://solareis.anl.gov/maps/index.cfm>. They are the right way to go. The PEIS says that projects located in solar energy zones will have priority for development and I want your assurance that that will be so. Developing more designated SEZs -- giving both developers and citizens a clear, uncontested path to progress -- is the way to go. Excluding areas up front that have already been studied and found unsuitable because of wildlife and resource conflicts makes the most sense for everyone.

But the "variance process" is NOT the way to go. Reconsidering sensitive areas when more suitable areas have been agreed upon by both BLM and local citizens will only create expensive, contentious processes and slow action on solar development. Variances, if they are used at all, should be the exception and not easily obtained.

Also, please give priority to melding the great idea put forward by your own Tucson field office manager in this December 2011 interview:

"The[Restoration Design Energy Project] program is aimed at identifying BLM land that has already been used for other purposes, such as mining or sand and gravel operations. Then it is developing a "how-to" guide that shows those leasing BLM land how best to approach siting, location and use of land that already has been used for other purposes. The point is to preserve pristine land while making further use of land that already has been disturbed in one way or another, Bellow says. "

I think that immediate focus should be put on these "badlands" -- brownfields, old mining sites, abandoned gravel pits--as appropriate and probably less contentious SEZs that are begging for new productive uses. This gets us all an automatic "two-fer": badlands get a new lease on life as productive lands plus more sensitive and valuable natural resources and wildlife habitat will remain "out of the loop" of consideration for development.

So, one more time in a nutshell: keep up and speed up the great SEZ identification work like Brenda and Gillespie; lose or downplay the "variance" idea; and give those badlands greater priority for SEZs.

Thanks for considering my comments.

Yours sincerely,

Patricia B.M. Brennan [great granddaughter of territorial pioneers]
31 Sheldon Street
Providence, RI 02906
401-272-1759
carabadang@gmail.com

Thank you for your comment, judith marchyn.

The comment tracking number that has been assigned to your comment is SEDDSupp20093.

Comment Date: January 26, 2012 20:12:13PM

Supplement to the Draft Solar PEIS

Comment ID: SEDDSupp20093

First Name: judith

Middle Initial:

Last Name: marchyn

Organization:

Address: 8744 Star Lane

Address 2:

Address 3:

City: Joshua Tree

State: CA

Zip: 92252

Country: USA

Privacy Preference: Don't withhold name or address from public record

Attachment:

Comment Submitted:

Please extend the public comment period for the

Thank you for your comment, Katja Irvin.

The comment tracking number that has been assigned to your comment is SEDDSupp20095.

Comment Date: January 26, 2012 20:29:16PM

Supplement to the Draft Solar PEIS

Comment ID: SEDDSupp20095

First Name: Katja

Middle Initial:

Last Name: Irvin

Organization:

Address:

Address 2:

Address 3:

City:

State: CA

Zip: 95116

Country: USA

Privacy Preference: Don't withhold name or address from public record

Attachment:

Comment Submitted:

I support the preferred solar zone alternative for solar development applications. Also, "variances" for solar development outside of solar energy zones should be limited and additional exclusion areas should be added to ensure that our most important habitat and ecosystems are protected from solar development.

Thank you for your comment, Paul Smith.

The comment tracking number that has been assigned to your comment is SEDDSupp20096.

Comment Date: January 26, 2012 20:41:14PM

Supplement to the Draft Solar PEIS

Comment ID: SEDDSupp20096

First Name: Paul

Middle Initial: F

Last Name: Smith

Organization: Tourism Economics Commission

Address: 6847 Adobe Road

Address 2:

Address 3:

City: Twentynine Palms

State: CA

Zip:

Country: USA

Privacy Preference: Don't withhold name or address from public record

Attachment: 012612PEIScomments.docx.pdf

Comment Submitted:

TOURISM ECONOMICS COMMISSION

29 PALMS

6847 Adobe Road

Twentynine Palms, CA 92277

760.361.8566

**CONTACT: Paul Smith, Chair
Tourism Economics Commission
760.361.8566
pfslaw29@gmail.com**

**To: US Bureau of Land Management
Supplemental Draft Solar PEIS COMMENTS
Argonne National Laboratory
9700 S. Cass Avenue, EVS/240**

Submitted Electronically vis: <http://solareis.anl.gov/involve/comments/index.cfm>

January 26, 2012

To whom it may concern:

The Tourism Economic Commission is a nonprofit public interest association which has studied the economic impacts of the supplemental solar PEIS on business in the California Desert. Its members include people in the hotel business, real estate brokerage, restaurant, real estate rental, insurance, contracting, and the residential retirement community.

The Solar PEIS and its supplement will cause substantial economic damage to California desert businesses. The PEIS establishes a variance process that will allow development of solar industrial projects outside of solar energy zones in excess of 20 million acres. The variance lands are mapped for the energy companies' convenience in applying for permission to construct their sites.

The sites will contain large and prominent industrial equipment which will interfere with the wide open unobstructed desert views which tourists enjoy in the desert. These developments will prohibit entry by the public, damage soils for perpetuity, eliminate important wildlife habitat, destroy cultural resources, release substantial amounts of carbon dioxide stored in the soil, and seriously handicap one of our most important mitigations against climate change effects, namely wildlife corridors. These variance areas abut national park lands, federal wilderness areas, and military facilities.

The establishment of these variance areas is an implicit invitation by the federal government to the solar industry to construct their industrial solar facilities in the areas. Economic studies support the economic damage. (see Joshua Tree National Park Visitor Study, Fall 2010, University of Idaho, cited as "Jette, C., A. Blotkamp, Y., Le., S. J. Hollenhurst. 2011. Joshua Tree National Park: Winter 2010, National Park Service, Fort Collins, Colorado", available on line at <http://www.psu.udioahpo.edu>). Tourism

visitation to Joshua Tree National Park is described in that report in detail. A separate economic analysis was performed by Professor Daniel Stynes of Michigan State (copy submitted).

This University of Idaho study concludes that Joshua Tree National Park was visited by 1.3 million visitors in 2010 with an economic effect on the local communities of over \$58 million. Professor Stynes indicates that the local economic effect is \$64 million. The University of Idaho report identified the ratings which visitors assigned to their Park visitor experience as follows:

Views without development	90%
Clean air	89%
Natural quiet, sounds of nature	87%
Desert plants/wildflowers	83%
Native wildlife	81%
Access to rock formations	78%
Solitude	73%
Dark, starry night skies	65%
Access to historical/cultural sites	52%

The message of course is that visitors find the above values very important to their reason for visiting this important desert National Park. Note that the above tourism value judgments are based on the natural values of the desert – values which would be seriously injured by the huge scale of solar development contemplated by the PEIS. Desert science tells us what is at stake.

Jim Andre, director of the University of California's Granite Mountains Desert Research Center tells us "This area is treasured by scientists throughout the world for its unparalleled pristine quality among deserts, one of the last functional ecosystems left on planet earth." And wildlife biologist Laura Cunningham indicates "This site is rich in life and needs to be preserved, not industrialized." Tourists understand these values and do not want to be surrounded and obstructed by huge solar fields and towers.

There would also be large impacts on property values which are not discussed in the PEIS. Numerous studies prove that wilderness enhances property values. The resulting decline in property values from solar development would unfairly injure property owners, and of course reduce property tax revenues to our cities and counties.

The PEIS does not deal with the economic impacts to the following business communities

- Tourism
- Attraction and retention of residents
- recreational opportunities
- property values

The PEIS opens over 20 million acres in the West for imprudently planned solar development. There are many national park units in this area and it is important to remember the collective economic impact of national parks:

- The National Park System produces nearly 270,000 private sector jobs
- There were 281 million recreational visits to our National Parks in 2010
- The amount of economic value to the public for each dollar invested in our national parks is \$4 (not a bad bargain)

- National parks contributed \$13.2 billion to our national economy in 2010, not including indirect spending.

The PEIS is fatally incomplete by its failure to deal with the above economic values. It is also defective in that it fails to deal with the potential for other methodologies to deal with energy and climate change:

- Conservation technology to reduce energy consumption
- Generation of renewable energy on a smaller scale at locations near to the point of use and which do not interfere with other important societal values
- "rooftop" energy generation
- If the above measures are not sufficient to meet our long-term renewable energy goals, then as a last resort large scale industrial solar plants should be located on disturbed and degraded land that offers little carbon sequestration, wildlife habitat and connectivity, and other natural values.

Sincerely,



Paul F. Smith

Tourism Economics Commission

Attached submittal: Economic Analysis by Professor Stynes

**CONTRIBUTION
OF
JOSHUA TREE NATIONAL PARK
TO
LOCAL ECONOMY
(December 6, 2011)**

A presentation dealing with economic variables and money market generation model at the National Parks Economic Symposium by:

**Daniel Stynes, Ph.D.
(Recreation and Tourism Resources)
Professor Emeritus
Department of Community, Agriculture,
Recreation & Resources Studies
Michigan State University**

Daniel Stynes
Michigan State University



Contribution of Joshua Tree NP to Local Economy

EXPERIENCE YOUR AMERICA

Outline

- Economic Impacts of National Parks
 - National estimates
 - MGM2 model
 - Joshua Tree
- Implications for Marketing/Promotion
 - Audiences
 - Visitor Market Segments
 - Spending Opportunities

2

NPS Impacts Economy thru

- Commercial Activities in Parks
- Visitor Spending on Trips
- NPS Payrolls
- NPS Operating Expenses
- NPS Construction
- Induced Development

3

National Economic Significance of NPS Visitor Spending, 2010

- 281 Million Visits
- \$ 12.13 Billion Visitor spending in local gateway regions
- 258,000 Jobs
- \$9.8 Billion Labor Income
- \$16.6 Billion Value Added

4

Delimitations – Estimates Don't include

- Visitor spending outside local area
 - Airfares, car rentals, en route spending
- Purchases of durable goods,
- Spending at home
- Spending by non-visitors

5

National Economic Significance of NPS Visitor Spending, 2010				
Sector/Spending category	Sales (\$Millions)	Jobs	Labor Income (\$ MM)	Value Added (\$MM)
Direct Effects				
Lodging	3,120	32,202	1,002	1,715
Restaurants & bars	2,929	47,007	1,071	1,508
Grocery stores	253	4,247	129	209
Amusements	1,214	21,323	534	810
Gas stations	405	6,443	208	333
Local Transportation	422	8,118	212	263
Other retail	783	14,432	402	658
Wholesale Trade	472	2,344	180	310
Manufacturing	2,137	3,609	222	506
Total Direct Effects	11,734	139,728	3,961	6,313
Secondary Effects	19,346	118,691	5,851	10,310
Total Effects	31,080	258,416	9,812	16,623

6

National Payroll Impacts, 2010

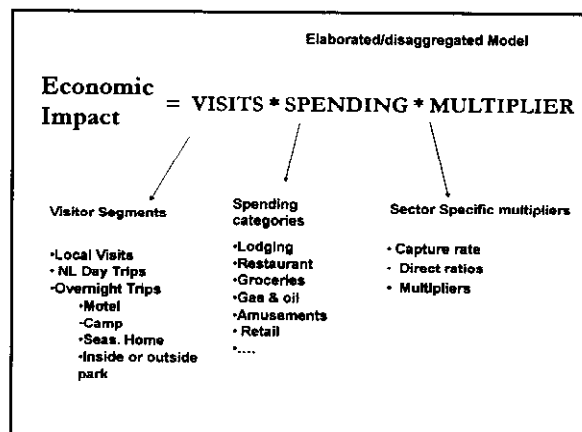
- 26,000 NPS employees
- \$ 1.62 Billion payroll
- 38,000 Jobs in gateway regions including induced effects of park payrolls

7

Impacts are Estimated Using Regional Economic models

- First must estimate spending = sales
- Translate sales into associated jobs, income
- Trace multiplier effects as spending circulates thru local, state, or national economies
- MGM2 is a spreadsheet model that carries out these calculations. We use it to estimate impacts of park visitor spending at 356 parks every year

8



MGM2 Inputs and Outputs

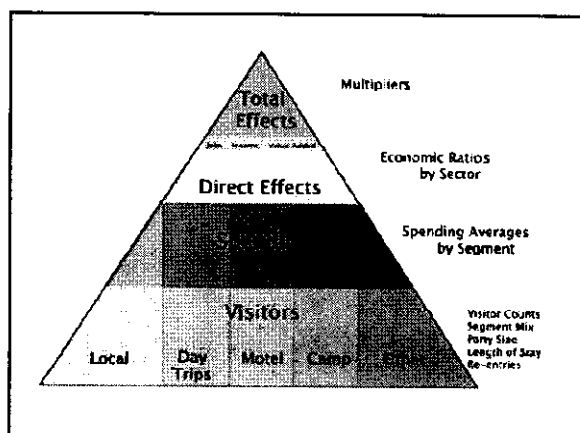
INPUTS

- Visits
- Conversion Factors
- Segment Mix
- Spending Averages
- Multipliers
 - Tax rates
 - Margins and Local Production

OUTPUTS

- Sales
- Income
- Jobs
- Value Added
- Direct & Secondary Effects
- Taxes (optional)

10



Joshua Tree 2010 Economic Impacts

Analysis of VSP by Phil Cook, Visitor Services Project, University of Idaho

12

Visitor Spending Impacts

- 1.44 Million visits in 2010,
 - 287,765 overnight stays
- \$58.8 million visitor spending within 30 miles of park (\$6.4 million inside park)
- Local impact
 - 732 jobs,
 - \$23.4 million labor income
 - \$37.9 million value added

13

Joshua Tree Payroll Impacts, 2010

- 140 NPS employees
- \$ 8.0 Million payroll
- Payroll Impact
 - 162 jobs
 - \$8.8 Million Labor Income
 - \$9.6 Million Value Added
- Payroll + Visitor Spending
 - 900 Jobs

14

Local Region

- VSP spending question asked visitors to report spending in the park and in communities of Joshua Tree, Yucca Valley, and Twentynine Palms
- Economic region is defined as two county area
 - San Bernardino and Riverside counties

15

Visitor Segments

Characteristic	Segment					
	Local	Day trip	Motel	Camp	Other OVN	All visitors
Visitor segment share (park entries)	8%	43%	24%	15%	10%	100%
Average visitor group size	2.2	2.5	2.7	2.9	2.4	2.6
Length of stay (days or nights)	1.0	1.0	1.9	2.7	2.5	2.3
Re-entry rate (park entries per trip)	1.1	1.1	1.5	1.7	1.3	1.3
Percent primary purpose trips	100%	62%	77%	88%	57%	71%

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Spending Averages (\$ per party per trip)

Trip Spending	Segment				
	Local	Day Trip	Motel	Camp	Other OVN
Motels	0	0	246.08	0	0
Camping fees	0	0	0.49	31.30	0
Restaurants & bars	1.76	8.86	90.95	11.33	6.22
Groceries	0	4.34	27.83	26.88	3.42
Gas & oil	8.17	14.45	37.00	39.56	18.34
Local transp.	0	9.40	27.22	0	0.83
Admissions & fees	0	8.70	16.42	8.83	3.61
Souvenirs	0	7.94	19.38	13.52	3.08
Total	10.93	53.69	465.37	131.42	33.5
Inside park	0	13.12	14.3	46.75	6.41
Outside Park	10.93	40.56	451.07	84.67	27.09

EXPERIENCE YOUR AMERICA

Average Spending (\$ per party per day/night)

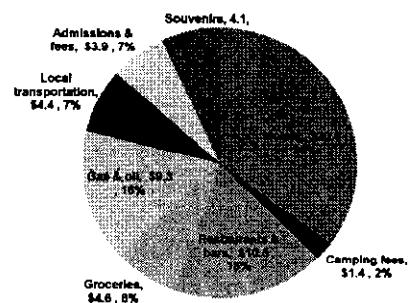
Expenditures	Segment				
	Local	Day Trip	Motel	Camp	Other OVN
Motels	0	0	130.28	0	0
Camping fees	0	0	0.26	11.40	0
Restaurants & bars	1.76	8.86	48.15	4.13	2.49
Groceries & takeout food	0	4.34	14.74	9.79	1.37
Gas & oil	9.17	14.45	19.59	14.41	6.54
Local transportation	0	9.40	14.41	0	0.33
Admissions & fees	0	8.70	8.69	3.22	1.44
Souvenirs & other	0	7.94	10.25	4.92	1.23
Total	10.93	63.69	246.37	47.87	13.49

18

JOTR Party Nights and Spending by Segment, 2010

Segment	Party Days/Nights (000's)	Pct	Spending (\$000's)	Pct
Local	49,360	7%	\$540	1%
Day Trip	226,792	34%	\$12,123	21%
Motel	189,197	24%	\$39,221	67%
Camp	114,650	17%	\$5,484	9%
<u>Other OVN</u>	<u>117,125</u>	<u>18%</u>	<u>\$1,669</u>	<u>3%</u>
Total	666,024	100%	\$58,937	100%

19

Total Spending \$58.8 Million (\$ Millions, %)

20

Local Economic Impacts of Visitor Spending

Sector	Sales (\$000's)	Jobs	Labor Income (\$000's)	Value Added (\$000's)
Direct Effects				
Motels	20,619	197	6,496	11,602
Camping fees	1,369	16	548	709
Restaurants & bars	10,480	176	3,930	5,591
Groceries	1,167	18	618	1,003
Gas & oil	2,065	22	1,060	1,719
Local transportation	4,443	79	2,364	2,943
Admissions & fees	3,883	61	1,838	2,811
Souvenirs & other	2,067	39	1,083	1,761
Wholesale trade	1,011	6	383	657
<u>Local maint</u>	<u>1,678</u>	<u>2</u>	<u>103</u>	<u>190</u>
Total Direct Effects	48,779	606	18,421	28,987
Secondary Effects	15,987	125	4,976	8,894
Total Effects	64,767	732	23,397	37,881

21

Limitations

- Accuracy rests on accuracy of the primary inputs
 - Visit counts, segment mix
 - Conversion factors
 - - party size, length of stay, re-entry rate
 - Spending averages (16% sampling error)
 - Multipliers

22

Uses of Economic Impact Info

- Political Justification & Leverage
- Fostering Local Partnerships
- Evaluation of Management, Policy and Marketing Decisions (inside & outside park)
- Understanding relationships between the park and the surrounding region

23

Using MGM2 Results

- Public Relations/News Releases
- Evaluation of Alternatives (GMP)
- Fostering Partnerships
- Developing a regional perspective

24

Target Audiences

- Political – national, state, local
- Partners – businesses, friends, ...
- Visitors
- General Public

25

Regional Perspective

- Importance of partnerships
 - Park-gateway communities
 - Park concessions
 - Local Businesses
 - Local & regional tourism orgs
 - Other public recreation providers
- Packaging visitor experiences

26

Keep in mind

- Most visitors stay outside the park
- Many visit multiple attractions on the trip
- Limited spending opportunities inside parks
- Visitor experience is the total trip package
 - Lodging, Food, Amusements, Recreation, Transportation, Information, Souvenirs
 - Inside and outside the park
 - NPS, partners, local communities, businesses

27

Visitor Market Segments

- Geographic Segments and Trip Types
 - Local Residents
 - Day Trip Market
 - Overnight Trips
 - National/International markets
- Trip Purpose Segments
 - General Sightseers
 - Activity oriented
 - Park as Primary vs Secondary Purpose
 - Special Events

28

More Information

- MGM2 Website
 - <http://web4.canr.msu.edu/mgm2>
- My broader economic impact website
 - Linked from MGM2
- E-mail : stynes@msu.edu

29

Thank you for your comment, George Hague.

The comment tracking number that has been assigned to your comment is SEDDSupp20097.

Comment Date: January 26, 2012 22:33:51PM

Supplement to the Draft Solar PEIS

Comment ID: SEDDSupp20097

First Name: George

Middle Initial: B

Last Name: Hague

Organization:

Address: 26711 Ironwood Ave

Address 2:

Address 3:

City: Moreno Valley

State: CA

Zip: 92555

Country: USA

Privacy Preference: Don't withhold name or address from public record

Attachment:

Comment Submitted:

What Alternative sites have been identified?

Germany puts solar panels along major roadways. Is that one of your alternative sites?

Why are not the roofs of the millions of square feet of warehousing being used? Many of the roofs have the ability to handle the load. Why are not all new warehousing roofs being required to handle the additional load of solar?

What will you do when it is found that your methods of producing energy are outdated and should be discarded?

Your environmental document must list all other energy project in the both Riverside and San Bernardino Counties.

Impacts of transmission lines need to be fully explained.

Impacts from maintenance of those transmission lines and solar project needs to be fully explained.

Thank you for your comment, Stephen Merritt.

The comment tracking number that has been assigned to your comment is SEDDSupp20098.

Comment Date: January 26, 2012 22:49:12PM

Supplement to the Draft Solar PEIS

Comment ID: SEDDSupp20098

First Name: Stephen

Middle Initial: B

Last Name: Merritt

Organization:

Address: 7995 Sunset Road

Address 2:

Address 3:

City: Joshua Tree

State: CA

Zip: 92252

Country: USA

Privacy Preference: Don't withhold name or address from public record

Attachment:

Comment Submitted:

I request a 3 month extension of the public comment period in order to have an opportunity to respond to the Solar PEIS Supplement

Thank you for your comment, Michael Connor.

The comment tracking number that has been assigned to your comment is SEDDSupp20099.

Comment Date: January 26, 2012 23:52:54PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDSupp20099

First Name: Michael
Middle Initial: J
Last Name: Connor
Organization: Western Watersheds Project
Address: P.O. Box 2362
Address 2:
Address 3:
City: Reseda
State: CA
Zip: 91335
Country: USA
Privacy Preference: Don't withhold name or address from public record
Attachment: 01-26-12-WWPCCommentsSolarSDEIS.pdf

Comment Submitted:

See attached letter submitted by Western Watersheds Project. We are also submitting two research papers. Thank you.



Michael J. Connor, Ph.D.
California Director
P.O. Box 2364, Reseda, CA 91337-2364
Tel: (818) 345-0425
Email: mjconnor@westernwatersheds.org
Web site: www.westernwatersheds.org

Working to protect and restore Western Watersheds

January 26, 2012

Solar Energy Draft PEIS
Argonne National Laboratory
9700 S. Cass Avenue-EVS/240
Argonne, IL 60439

Filed electronically through: <http://solareis.anl.gov>

**COMMENTS ON THE SUPPLEMENT TO THE DRAFT PROGRAMMATIC
ENVIRONMENTAL IMPACT STATEMENT FOR SOLAR ENERGY DEVELOPMENT
IN SIX SOUTHWESTERN STATES**

To whom it may concern:

Western Watersheds Project thanks you for the opportunity to comment on the Department of Interior Bureau of Land Management ("BLM") and Department of Energy ("DOE") joint Supplemental Draft Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States ("SDEIS").

Western Watersheds Project works to protect and conserve the public lands, wildlife and natural resources of the American West through education, scientific study, public policy initiatives, and litigation. Western Watersheds Project has over 1,600 members nationwide with offices in Arizona, California, Idaho, Montana, Utah, and Wyoming. Western Watersheds Project, as an organization and on behalf of its members, is concerned with and active in seeking to protect and improve wildlife habitats, riparian areas, water quality, and other sensitive resources and ecological values.

Western Watersheds Project recognizes that global climate change poses new challenges to our already stressed public lands. Scientists consider the challenges of conserving biodiversity to be even larger than mitigating the negative effects of global climate change.¹ While climate change threatens biodiversity and entire fragile ecosystems, our response to climate change also threatens our public lands and their wildlife. Thus, responsible siting of energy projects requires the use of comprehensive, ecologically sound, science-based analysis in determining power plant

¹ University of Copenhagen (2012, January 20). Biodiversity crisis is worse than climate change, experts say. ScienceDaily. Retrieved January 26, 2012, from <http://www.sciencedaily.com/releases/2012/01/120120010357.htm>

locations. This is best achieved by focusing energy developments on private or severely altered lands that are located close to points of use to minimize new disturbance or further fragmentation of fragile, native ecosystems. The ecological impacts from renewable energy project development should be fully mitigated with significant and lasting actions.

Western Watersheds Project has actively participated in the NEPA process for this program proposal. We submitted scoping comments from our Boise, Idaho Office on July 7, 2008, from our California Office on July 15, 2008, and additional scoping comments from our California Office on September 10, 2009. Western Watersheds Project submitted comments on the DPEIS on May 2, 2011.

1. INTRODUCTION

In our comments on the DPEIS we urged the BLM to set out a Purpose and Need that addresses the Secretary's clear mandate to protect and enhance the Nation's water, wildlife, and other natural resources on the nation's public lands, to consider a range of alternatives in the PEIS including alternatives that meet energy needs but require no or minimal use of public lands, and to fully analyze the environmental impacts of current management and any proposed energy zones. We asked the BLM to consider the following five alternatives:

- (A) A climate change alternative that would exclude all public lands from solar energy development to provide maximum flexibility and opportunity for species and their habitats to survive climate change impacts;
- (B) An alternative that would use presence of an endangered, threatened or candidate species as an exclusion in the screening criteria so that SEZ are not designated on habitat for endangered, threatened or candidate species;
- (C) An alternative that constrains the range of technologies that could be used, to promote technologies that minimize water use and environmental footprints;
- (D) An alternative that focuses development on private land; and,
- (E) A distributed energy alternative.

Because these issues and alternatives have not been addressed in the SDEIS we are attaching and re-submitting our comments on the DPEIS comments as part of this comment letter on the SDEIS.

2. RANGE OF ALTERNATIVES

The selection and clear presentation of alternatives is the "the heart" of the NEPA process. NEPA requires the agencies to evaluate and compare a range of reasonable alternatives.

The BLM proposed three alternatives in the DPEIS: (1) A **no action** alternative that continues the issuance of right-of-way ("ROW") authorizations for utility-scale solar energy development on BLM administered lands on a project-by-project basis. (2) The **proposed action** under which approximately 22 million acres of BLM-administered lands would be available for

solar energy ROW applications of which approximately 677,400 acres (2,741 km²) would be in solar energy zones (“SEZ”), where the BLM would prioritize development; and (3) A **solar energy zone alternative** that restricts applications to the SEZs only.

In the SDPEIS, the BLM now considers variations on the original alternatives. The BLM has dropped the Bullard Wash, Iron Mountain, Pisgah, Delamar Valley, East Mormon Mountain, Mason Draw and Red Sands SEZ; and, has reduced the sizes of the proposed Riverside East, De Tilla Gulch, Fourmile East, Los Mogotes East, Amargosa Valley, Dry Lake, Dry Lake Valley North and Afton SEZ reducing the acreage of the proposed SEZ to about 285,000 acres (1,153 km²). The BLM now calls its Preferred Alternative the “Modified Solar Energy Development Program Alternative.” Under this alternative, the BLM proposes categories of lands to be excluded from utility-scale solar energy development, identifies SEZs “where the BLM would prioritize development”, proposes a process to identify additional SEZs, and allows for utility-scale solar development in variance areas outside of SEZs through what it calls a variance process. The second action alternative restricts applications to the modified SEZs only.

As with the alternatives considered in the DPEIS, all three alternatives considered in the SDPEIS would result in similar levels of industrial-scale solar power plant development on the Nation’s public lands. The “no action” alternative would allow development to continue as it currently proceeds. The preferred alternative purports to restrict development to SEZ but allows for new SEZ to be developed and establishes a variance for proposed projects outside the SEZ. Alternative (3) the modified SEZ alternative purports to restrict solar power plant development to the designated SEZ, but SEZ can be expanded, added, or reduced in the future. BLM has not considered a single alternative that would avoid the whole-scale destruction of hundreds of square miles of important public lands and that would avoid impacted a multitude of special status species, recreational opportunities, visual resources, and host of other resources of these multiple-use lands.

NEPA requires agencies to rigorously explore and objectively evaluate all reasonable alternatives. BLM’s analysis of a limited number of similar action alternatives makes this a grossly inadequate range of alternatives.

3. IMPACTS ANALYSIS AND POTENTIAL MITIGATION MEASURES

Relevant New Publications

Please consider and incorporate into your NEPA analysis the content and findings from the following publications that have appeared since the DPEIS was originally released. We have attached copies or provided a URL where the documents are available:

Hagerty, B. E, Nussear, K. E., Esque, T. C. and Tracy, C. R. 2011. Making molehills out of mountains: landscape genetics of the Mojave desert tortoise. *Landscape Ecol.* 26: 267–280.

- Murphy R. W., Berry K. H., Edwards, T., Leviton, A. E., Lathrop, A., and Riedle, J. D. 2011. The dazed and confused identity of Agassiz's land tortoise, *Gopherus agassizii* (Testudines: Testudinidae) with the description of a new species and its consequences for conservation. *ZooKeys*, 113: 39-71.
[Available at: <<http://www.pensoft.net/journals/zookeys/article/1353/the-dazed-and-confused-identity-of-agassiz>>]
- Lovich, J. E. and Ennen, J. R. 2011. Wildlife Conservation and Solar Energy Development in the Desert Southwest, United States. *BioScience*, 61(12): 982-992.
- U.S. Fish and Wildlife Service. 2011. Revised recovery plan for the Mojave population of the desert tortoise (*Gopherus agassizii*). U.S. Fish and Wildlife Service, Pacific Southwest Region, Sacramento, California. 222 pp. Dated May 6, 2011. Released August 25, 2011.
[Available at: <<http://www.fws.gov/endangered/recovery/index.html#plans>>]

Selection of Solar Energy Zones

In response to concerns expressed by Western Watersheds Project and other organizations and concerned members of the public, the BLM has dropped the Bullard Wash, Iron Mountain, Pisgah, Delamar Valley, East Mormon Mountain, Mason Draw and Red Sands SEZ. It has also reduced the sizes of the proposed Riverside East, De Tilla Gulch, Fourmile East, Los Mogotes East, Amargosa Valley, Dry Lake, Dry Lake Valley North and Afton SEZ reducing the acreage of the proposed SEZ. While we certainly support the BLM's proposal to eliminate some of the SEZ and some of the acreage of others, even these eliminated areas do not seem to be safe from being industrialized under the proposed variance nor indeed do they seem to be safe from re-designation as SEZ down the road. The BLM must make it clear that once an area has been deemed unsuitable for energy development or as a SEZ it is taken off the table for the foreseeable future.

The SEZ that the BLM has removed from further consideration "had substantive resource conflicts." SDPEIS at 2-80. The SDEIS does not explain how the BLM managed to select these areas in the first place since the SEZ were supposedly areas of low resource conflict. In order to minimize potential adverse impacts, the BLM should drop the remaining proposed Solar Energy Zones too because they were not selected as areas with low resource conflicts at all, but were selected based on slope, proximity to utility corridors (which invariably pass through valleys and over bajadas) and existing land use designations. This resulted in the BLM effectively targeting desert tortoise habitat in California, Nevada, and Arizona. FLPMA § 201 [43 U.S.C. 1711] (a) requires the Secretary to prepare and maintain on a continuing basis an inventory of all public lands and their resource and other values (including, but not limited to, outdoor recreation and scenic values), giving priority to areas of critical environmental concern. This inventory shall be kept current so as to reflect changes in conditions and to identify new and emerging resource and other values." BLM needs to follow the law, develop an inventory of the public lands that is adequate for the job at hand, and then make a determination as to whether any of those lands lack resource conflicts. Without this comprehensive approach the BLM is simply making an arbitrary decision to sacrifice public resources for private gain.

Variance & Desert Tortoise

The proposed variance that would allow developers to build power plants on public lands outside the SEZ completely undermines any credibility behind the BLM's argument for designating SEZ in the first place.

The criteria suggested for allowing a variance to be considered are arbitrary, subjective, and based on unsubstantiated data. For example, for the connectivity criteria, the BLM provides a small map (FIGURE 2.2-2 Desert Tortoise Conservation Areas and Proposed Connectivity Areas) ostensibly showing "connectivity areas" but provides no explanation of how this map was developed, nor does it provide larger scale maps that would actually help the public understand where these connectivity areas are. We suggest the BLM provide more a more detailed explanation of the underlying science and a more detailed presentation of the results of the analysis. The BLM should also explain to what extent power plants that they have already authorized, such as the ISEGS plant, have compromised this connectivity. Without that, there is no baseline from which to determine the impacts.

The BLM is responsible for preparing and maintaining, on a continuing basis, a current inventory of the public land and its resources (FLPMA, 43 U.S.C. 1701 Sec.201 (a)). This inventory information, along with monitoring data collected under a variety of programs, shall be used to evaluate the current status and trends of plants and animals and their habitats on BLM-administered lands, and to respond to FWS and/or NMFS Federal Register Notices of species status review (e.g., 90-day, 12-month, 5-year, and annual candidate reviews). BLM Manual 6840 at 1B1a. The BLM should therefore repeat the connectivity exercise for all special status species found in the western states such as bighorn sheep that will be affected. Without this information, the BLM cannot provide assurance that its action will "minimize the likelihood of and need for listing of these species under the ESA." *Ibid.* at .02.

The BLM also provides a series of cut-offs decided by results of desert tortoise surveys. These are inadequate for many reasons. For one thing, the USFWS no longer considers population numbers as targets but rather relies on determining trends – is a population stable, declining or increasing? For another, just because current numbers in a particular area may be low does not imply that the population is unimportant. The population may be of considerable genetic significance (Murphy *et al.*, 2011²; Brittan *et al.*, 1997³). The area may provide connectivity but have no resident tortoises (see for example, Hagerty et al, 2011 identifying "least cost" pathways for potential gene flow; see Dr. Hagerty's thesis for a more detailed treatment of this issue⁴).

² Murphy, R. W., Berry, K. H., Edwards, T. and McLuckie, A. M. 2007. A Genetic Assessment of the Recovery Units for the Mojave Population of the Desert Tortoise, *Gopherus agassizii*. *Chelonian Conservation and Biology* 6(2): 229–251.

³ Britten, H. B., Riddle, B. R., Brussard, P. F., Marlow, R. and Lee, Jr., T. E. 1997. Genetic delineation of management units for the desert tortoise, *Gopherus agassizii*, in the northeastern Mojave Desert. *Copeia* 1997: 523-530.

⁴ Hagerty, B. 2008. Ecological Genetics of the Mojave Desert Tortoise. Ph.D. Dissertation. University of Nevada, Reno. 244 pp.

Utah & Greater Sage-grouse

The SDEIS states, “To meet the objectives of BLM's sage-grouse conservation policy, the Solar PEIS has excluded specifically identified sage-grouse habitat (currently occupied, brooding, and winter habitat) located on BLM public lands in Nevada and Utah.” SDEIS at 2-18. However, although we raised repeated concerns over greater sage-grouse, none of the proposed Utah SEZ has been modified to remove sage-grouse habitat.

Mitigation

In our previous comments and scoping comments, we proposed that BLM allow the retirement of grazing allotments as compensatory mitigation for impacts to special status species and their habitat. Senator Feinstein recently successfully authored legislation authorizing a similar process throughout the California Desert Conservation Area. The PEIS should include language for all alternatives that will programmatically modify all subject RMPs to allow for buyout and voluntary relinquishment of grazing allotments for conservation purposes. This will both reduce cumulative effects and provide opportunities for meaningful mitigation of impacts.

Western Watersheds Project thanks you for the opportunity to provide comments on the Supplement. We look forward to seeing these and our earlier recommendations incorporated in the next iteration of this document.

Sincerely,

A handwritten signature in black ink, reading "Michael J. Connor", followed by a long horizontal line extending to the right.

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Working to protect and restore Western Watersheds

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**COMMENTS ON THE DRAFT PROGRAMMATIC ENVIRONMENTAL IMPACT
STATEMENT FOR SOLAR ENERGY DEVELOPMENT IN SIX
SOUTHWESTERN STATES**

To whom it may concern:

Western Watersheds Project thanks you for the opportunity to comment on the Department of Interior Bureau of Land Management ("BLM") and Department of Energy ("DOE") joint Draft Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States ("DPEIS").

Western Watersheds Project works to protect and conserve the public lands, wildlife and natural resources of the American West through education, scientific study, public policy initiatives, and litigation. Western Watersheds Project has over 1,600 members nationwide with offices in Arizona, California, Idaho, Montana, Utah, and Wyoming. Western Watersheds Project, as an organization and on behalf of its members, is concerned with and active in seeking to protect and improve wildlife habitats, riparian areas, water quality, and other sensitive resources and ecological values.

Western Watersheds Project recognizes that global climate change poses new challenges to our already stressed public lands. However, while climate change threatens biodiversity and entire fragile ecosystems, our response to climate change also threatens our public lands and their wildlife. Accordingly, WWP supports responsible development of power plant projects. Responsible development requires the use of comprehensive, ecologically sound, science-based analysis in determining power plant locations. This is best achieved by focusing energy developments on private or severely altered lands that are located close to points of use to minimize new disturbance or further fragmentation of fragile, native ecosystems. The ecological impacts from renewable energy project development should be fully mitigated with significant and lasting actions.

Western Watersheds Project has actively participated in the scoping process. We submitted scoping comments from our Boise, Idaho Office on July 7, 2008, from our California Office on July 15, 2008, and additional scoping comments from our California Office on September 10, 2009.

In our comments on the DPEIS we have followed the general approach of the DPEIS documents, and address the overall evaluation first followed by some comments on the individual state analyses. Because the mission of Western Watersheds Project is to protect public lands and their resources most of our comments are directed to the BLM.

1. INTRODUCTION, AND PURPOSE AND NEED

Western Watersheds Project does not believe that the best use of any of our Nation's multiple-use public lands is for single-use, industrial-scale energy development, nor do we believe industrial-scale energy development on public lands to be consistent with the Federal Land Policy Management Act ("FLPMA"). We do believe that the federal government should look to ways it can promote distributed energy, and use of brown fields, and other degraded areas within urban areas for industrial production to ensure that as many diverse wildlife habitats and areas of connectivity persist to facilitate changes species distribution due to climate change. That approach best protects and enhances the Nation's water, wildlife, and other natural resources as required by Secretarial Order 3285A1.

FLPMA mandates the BLM to manage the public lands "in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values" and to "manage the public lands under principles of multiple use and sustained yield." The utility-scale solar energy developments envisioned in the PEIS would require landscape level conversion of desert lands into vast industrial tracts. These tracts will be permanently and irreversibly degraded, and will no longer be available for multiple-use. Although the life of the solar power plants themselves is only expected to be 20-30 years, the character of these public lands will be permanently changed. FLPMA's mandates should be the primary driver for this planning process.

The DPEIS cites a number of Executive Orders, Congressional acts, and federal agency orders and policies that it states establish requirements for the agencies related to renewable energy development and that provide the drivers for specific actions being taken or being proposed by these agencies to facilitate solar energy development. DEIS at 1-2.

Executive Order 13212: Signed by President Bush on May 18, 2001 this Executive Order states "For energy-related projects, agencies shall expedite their review of permits or take other actions as necessary to accelerate the completion of such projects, while maintaining safety, public health, *and environmental protections*. (Our emphasis added).

Energy Policy Act of 2005: Section 211 of the Act states, "It is the sense of the Congress that the Secretary of the Interior should, before the end of the 10-year period beginning on the

date of enactment of this Act, seek to have approved non-hydropower renewable energy projects located on the public lands with a generation capacity of at least 10,000 megawatts of electricity.”

This is a recommendation by Congress, not a mandate. There is no obligatory requirement for the Secretary to do so, nor is there language in the Energy Policy Act that allows the Secretary to short-change environmental protections or identify large slabs of public lands for industrial development. The repeated claim made in the DPEIS that the Energy Policy Act requires the Secretary to approve 10,000 megawatts of new energy plants is simply untrue.

Energy Independence and Security Act of 2007: Section 603 of the Energy Independence and Security Act of 2007 requires the DOE to assess methods to integrate electric power from utility-scale solar facilities into regional electricity transmission systems, to identify transmission system expansions needed to move solar-generated electricity to growing electricity demand centers, and to consider methods to reduce the amount of water consumed by concentrating solar power systems. There is no mandate to use public lands for industrial solar development.

Secretarial Order 3285A1: This amended secretarial order dated February 22, 2010 sets a policy of “Encouraging the production, development, and delivery of renewable energy is one of the Department’s highest priorities. Agencies and bureaus within the Department will work collaboratively with each other, and with other Federal agencies, departments, states, local communities, and private landowners to encourage the timely and responsible development of renewable energy and associated transmission *while protecting and enhancing the Nation’s water, wildlife, and other natural resources*. (Our emphasis added). It also calls for development of a strategy for “identifying and prioritizing the specific locations in the United States best suited for large-scale production of solar, wind, geothermal, incremental or small hydroelectric power on existing structures, and biomass energy (e.g., renewable energy zones).”

National Environmental Policy Act (“NEPA”) Sec. 1502.13 requires that an EIS specify the underlying purpose and need to which the agency is responding in proposing the alternatives including the proposed action. NEPA review cannot be “used to rationalize or justify decisions already made.” 40 C.F.R. § 1502.5; *Metcalf v. Daley*, 214 F.3d 1135, 1141-42 (9th Cir. 2000). The statement of purpose and need is closely tied to the alternatives reviewed in a NEPA process since “the stated goal of a project necessarily dictates the range of ‘reasonable’ alternatives.” *City of Carmel*, 123 F.3d at 1155. The Ninth Circuit reaffirmed this point in *National Parks Conservation Assn v. BLM*, 586 F.3d 735, 746-48 (9th Cir. 2009) (holding that “[a]s a result of [an] unreasonably narrow purpose and need statement, the BLM necessarily considered an unreasonably narrow range of alternatives” in violation of NEPA).

According to the DPEIS:

The scope of this PEIS is limited to utility-scale solar development, in part, because the Energy Policy Act of 2005 and DOI Secretarial Order 3285A1 require that the BLM take steps to facilitate development at that scale (see Section 1.1). The development of distributed generation, small-scale solar energy

facilities, such as roof-top mounted PV systems, is not included in the scope of this PEIS. While such solar energy development will be an important component of future electricity supplies (and is the focus of separate DOE initiatives; see Section 2.5.1), current research indicates that development of both distributed generation and utility-scale solar power will be needed, along with other energy resources and energy efficiency technologies (NREL 2010c). One analysis of available roof space concluded that up to 23% of required electricity supplies could be met with roof-top PV systems, although integrating PV into the electric grid at levels that high could be challenging (Denholm and Margolis 2008). On a per watt basis, small-scale PV systems are more expensive than utility-scale systems (NREL 2010c). DPEIS at 1-4;

The DPEIS states that BLM has identified utility-scale solar energy development as a potentially critical component in meeting the applicable orders and mandates discussed in Section 1.1. However, the DPEIS provides no meaningful justification as to why utility scale solar on public land is a critical component in meeting the listed Executive Orders, Congressional acts, and federal agency orders. It provides no justification for eliminating other alternatives off the bat such as distributed generation, promotion of small-scale facilities, and facilitating the use of private lands (even though Secretarial Order 3285A1 expressly requires “agencies and bureaus to work collaboratively with ... private landowners to encourage the timely and responsible development of renewable energy and associated transmission.”). The citations provided such as NREL 2010c are not primary references, not comprehensive, and not up to date.

The Purpose and Need section ignores the large amount of public land that is already being developed for solar power plants and the expected amounts of energy that would be generated. In the California Desert Conservation Area alone current solar energy project planning and development that is underway would produce over 19,100 MW from public lands, and a number of additional projects on public lands have been approved in Nevada.

Nor does the Purpose and Need section address the Secretary’s clear direction to protect and enhance the Nation’s water, wildlife, and other natural resources. Our public lands are the last, best places for native wildlife and rare plants. In the context of climate change, maintaining broad swaths of untrammeled landscapes connected by matrix habitat is the only approach to maintaining the flexibility needed to ensure that the greatest number of species will be able to move and adapt to changing conditions. Fragmentation through solar developments, and the accompanying transmission lines and roadways, reduces the chances of these species survival.

In sum, the BLM’s Purpose and Need section is overly narrow and constrained in violation of NEPA, and does not even meet the requirements of many of the orders, acts and policies that the BLM claims to be driving this process.

2. RANGE OF ALTERNATIVES

The selection and clear presentation of alternatives is the “the heart” of the NEPA process. NEPA requires the agencies to evaluate and compare a range of reasonable alternatives.

The BLM considers the following three alternatives in the DPEIS:

(1) A **no action** alternative that continues the issuance of right-of-way (ROW) authorizations for utility-scale solar energy development on BLM administered lands by implementing the requirements of the BLM’s existing solar energy policies on a project-by-project basis. Lands available for solar energy development would include those areas currently allowable under existing applicable laws and statutes (approximately 99 million acres in the six-state study area) and in conformance with the approved land use plan(s).

(2) The **proposed action**. A solar energy development program alternative that applies new program administration and authorization policies and design features for utility-scale solar energy development on BLM-administered lands to a subset of BLM administered lands that would be available for solar energy ROW applications (approximately 22 million acres. Within the available lands, the BLM would identify approximately 677,400 acres (2,741 km²) in solar energy zones, which are lands identified by the BLM as best-suited for utility-scale production of solar energy and where the BLM would prioritize development (as well as development of associated transmission infrastructure).

(3) A **solar energy zone (SEZ) alternative** that applies the same new program administration and authorization policies and design features to utility-scale solar energy development but restricts applications to SEZs only (up to approximately 677,400 acres in the six-state study area).

All three alternatives considered in the EIS would result in similar levels of industrial-scale solar power plant development in the desert and/or would not achieve the stated purpose and need:

Alternative (1) the “no action” alternative would allow development to continue as it currently proceeds. Since all approved projects are now being litigated, this is clearly not an efficient and effective approach;

Alternative (2) the preferred alternative is poorly and incompletely described. It consists of identifying solar energy zones (SEZ) where BLM staff would prioritize applications and an additional, enormous area that would be open for development but where applications would receive a lower priority treatment from staff. The DPEIS does not explain why the BLM even wants to propose opening up 100 times more land than it has identified any need for, nor has staff to handle. How is this going to help the BLM respond in a more efficient and effective manner to solar power plant applications? How does this alternative protect and enhance the Nation’s water, wildlife, and other natural resources? In fact, this alternative appears to have been thrown in at the last minute given the statement in the DPEIS that “Only those species that are known to occur in the SEZ regions are discussed in Appendix J because the need for an expanded species analysis by alternative was identified too late in preparation of the Draft PEIS to be accommodated in

this version of the document. It is anticipated that a discussion of all species with potential for impacts under each alternative will be developed between the Draft and Final PEIS.” DEIS at RG-8. How could the BLM not be aware of the need to consider the impacts of its proposed action on threatened and endangered species?

Alternative (3) the SEZ alternative is the DPEIS’ “Goldilocks alternative”. Unfortunately, although it purports to restrict solar power plant development to the designated SEZ, this SEZ alternative is effectively the same as the proposed action since BLM can expand, add, remove, or reduce SEZs in the future.

NEPA requires agencies to rigorously explore and objectively evaluate all reasonable alternatives. BLM’s analysis of a limited number of similar alternatives makes this a grossly inadequate range of alternatives.

The BLM has not considered the following alternatives:

- (A) A climate change alternative that would exclude all public lands from solar energy development to provide maximum flexibility and opportunity for species and their habitats to survive climate change impacts;
- (B) An alternative that would use presence of an endangered, threatened or candidate species as an exclusion in the screening criteria so that SEZ are not designated on habitat for endangered, threatened or candidate species;
- (C) An alternative that constrains the range of technologies that could be used, to promote technologies that minimize water use and environmental footprints;
- (D) An alternative that focuses development on private land; and,
- (E) A distributed energy alternative.

These five alternatives would promote responsible energy production, would minimize or avoid impacts to sensitive resources, and would protect and enhance the Nation’s water, wildlife, and other natural resources. BLM has ignored or unfairly dismissed these alternatives.

3. IMPACTS OF SOLAR ENERGY DEVELOPMENT AND POTENTIAL MITIGATION MEASURES

FLPMA § 201 [43 U.S.C. 1711] (a) requires the Secretary to prepare and maintain on a continuing basis an inventory of all public lands and their resource and other values (including, but not limited to, outdoor recreation and scenic values), giving priority to areas of critical environmental concern. This inventory shall be kept current so as to reflect changes in conditions and to identify new and emerging resource and other values.”

Despite this inventory requirement, the BLM states in the DPEIS that for its preferred alternative it was unable to obtain complete geographic information system (GIS) data across the six-state study area and thus could not map the exact footprint of the alternative nor calculate the exact acreage. DPEIS at 2-3. It has compounded this by failing to provide a quantitative analysis

of the cumulative effects of the preferred alternative on listed and candidate species. These obvious, gross deficiencies need to be rectified.

Based on data in Tables 2.2-1 and ES 2-1, the approximate areas by alternative are:

State	Total State Acreage	BLM-Administered lands (Acres)		
		No Action	Preferred Alternative	SEZ Alternative
Arizona	72,700,000	9,218,009	4,485,944	13,735
California	100,200,000	11,067,366	1,766,543	339,090
Colorado	66,500,000	7,282,061	148,072	21,050
Nevada	70,300,000	40,794,055	*9,084,050	171,265
New Mexico	77,800,000	12,188,361	4,068,324	113,052
Utah	52,700,000	18,182,368	2,028,222	19,192
Total	440,200,000	98,732,220	21,581,154	677,384

*The estimate for Nevada given in Table ES.2-1 is 9,587,828; we do not know which is the BLM's actual estimate.

The scale of the permanent degradation and loss of the public lands and public resources that could result from this PEIS process is unprecedented.

BLM is obligated under FLPMA to “minimize adverse impacts on the natural, environmental, scientific, cultural, and other resources and values (including fish and wildlife habitat) of the public lands involved.” 43 U.S.C. §1732(d)(2)(a). Other laws, including the Endangered Species Act, also entail the need for mitigations to minimize impacts. BLM is required to consider measures to mitigate potential environmental consequences in its NEPA analysis. 40 C.F.R. § 1502.16. The NEPA implementing regulations define "Mitigation" to include:

- (a) Avoiding the impact altogether by not taking a certain action or parts of an action.
 - (b) Minimizing impacts by limiting the degree or magnitude of the action and its implementation.
 - (c) Rectifying the impact by repairing, rehabilitating, or restoring the affected environment.
 - (d) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.
 - (e) Compensating for the impact by replacing or providing substitute resources or environments.
- [40 C.F.R. §1508.20]

The scale of the degradation and the potential massive loss of public resources will make development of appropriate mitigation measures extremely costly and difficult. All of the mitigation measures outlined in §1508.20 are applicable to various aspects of solar energy development.

In order to minimize adverse impacts, the BLM should drop many of the proposed study areas from further consideration as Solar Energy Zones. The BLM's siting approach, based on

slope, proximity to utility corridors (which invariable pass through valleys and over bajadas) and existing land use designations has effectively resulted in the targeting of desert tortoise habitat in California, Nevada, and Arizona. The BLM's preferred alternative opens 12 percent of "desert tortoise" habitat to solar development. DPEIS at ES-21. That BLM is even willing to entertain opening up 12 percent of the habitat of any listed species is problematic; that fact that this is the BLM's preferred action is simply outrageous. BLM should reconsider its siting criteria to promote avoidance of listed species.

Section 5.10.5.1 Siting and Design must be modified to include a requirement to avoid species habitat that provides important connectivity between populations, and to avoid habitat that provides important corridors for wildlife movement. Without this, the DPEIS will need to undertake an extensive analysis of impacts to habitat connectivity for all special status species.

High quality Mojave Desert shrublands and high quality sagebrush habitats or those that have good restoration potential should not be developed for solar energy in areas where ESA listed or candidate species and other Special Status Species or rare species occur. This applies in particular to desert tortoise, greater sage-grouse, and Gunnison sage-grouse which require landscape level conservation measures to promote recovery.

In order to compensate for the enormous habitat losses, and the additional direct, indirect, and cumulative impacts to sensitive resources caused by the presence of solar power plants and associated infrastructure, the acquisition of off-site compensation lands will be needed and the BLM will need to reduce the multiple impacts of all other consumptive uses authorized by any given land use plan. The BLM should use the PEIS to modify all subject land use plans to allow voluntary buyout of grazing permits. This would then provide a win-win situation for the developers and permittees. Developers could use buyout to offset site-specific impacts from their projects on wildlife, sensitive species, riparian zones, and other resources; permittees who would have their grazing privileges restricted would benefit from the ability to cash out. The ecological benefits of retiring allotments are high and this action may be easier to accomplish than other proposed management solutions. Livestock grazing is a landscape level impact, and the action area for livestock impacts tends to very large with a footprint indicated by the size of the allotment itself. Removing livestock removes direct and indirect impacts at a landscape level as well as reducing impacts on specific, sensitive resources such as riparian areas, cultural sites, and sensitive species and rare plant habitats. Removal of livestock benefits wildlife by removing negative interspecies interactions, reducing competition for forage, and reducing the risk of spread of invasive plants. Combined with the removal of range improvements, this measure would also help reduce the impacts of other threats such as OHV activities and unauthorized route use by eliminating "attractive nuisances", and would reduce subsidized predators such as ravens and coyotes that use those range improvements. It would also reduce trampling impacts to biological crusts and allow allotment lands to reach full potential as carbon sinks, thus helping to offset the loss of carbon sequestration from utility-scale developments. After the initial buyout, it would potentially reduce BLM costs associated with rangeland management and administration.

A combination of both acquisition of compensation lands and an overall reduction of impacts will be required to achieve a net decrease in cumulative impacts to sensitive and listed species to offset the habitat loss and other impacts.,

In addition, the Mojave Desert acts as a carbon dioxide sink on a par with grasslands and temperate forests.¹ In order to assure a net climate change benefit, the BLM should require that all solar energy projects demonstrate a clear net carbon dioxide reduction benefit. The loss of the project sites carbon dioxide sink capability should be factored into the mitigation calculations. Any requirement for the operation of gas-powered or other fossil fuel power plants to accommodate loads etc should also be factored into the calculation.

The BLM should clearly adopt a policy of “no net loss” of public lands whereby an equivalent acreage of private lands and inholdings are acquired by project developers and these compensation lands are conserved in perpetuity. Habitat quality of compensation habitat must be of an equal or better quality than the habitat lost to solar projects. This would protect and mitigate for impacts for common desert flora and fauna, and would be in addition to any habitat acquisition required to offset impacts to special status species.

4. IMPACTS AND CUMULATIVE EFFECTS

The National Environmental Policy Act (“NEPA”) requires agencies to take a “hard look” at the potential environmental impacts of its proposed actions. The PEIS must fully consider the direct, indirect and cumulative effects of the proposed policy and actions. Further, NEPA directs agencies to “rigorously explore and objectively evaluate all reasonable alternatives” [40 C.F.R. 1502.14] A consideration of alternatives that lead to similar results is not sufficient to meet the intent of NEPA. The PEIS must address all substantial questions raised by the public. The PEIS should present the environmental impacts of the proposal and the alternatives in comparative form based on the information and analysis presented in the sections on the Affected Environment (40 C.F.R. § 1502.15) and the Environmental Consequences (40 C.F.R. § 1502.16). This more sharply defines the issues, provides a clear basis for choice among options by the decisionmaker and the public, and ensures that the choice not be arbitrary and capricious.

Emissions and Climate Change Effects

The DPEIS repeatedly states or implies that the use of solar facilities to generate electricity “would displace air emissions that would otherwise be released from fossil fuel-fired power plants.” DPEIS at 8.1-163. There is no support in the DPEIS or elsewhere for this statement; the solar power plants proposed in the preferred alternative are apparently *in addition to*, not *in lieu of*, fossil fuel energy generation. Nowhere does the DPEIS discuss the fossil fuel-fired power plants that will be displaced by the construction of the proposed industrialized, decentralized solar power plants proposed here. Even if solar power plants were to displace coal fired plants, additional power generation or extensive storage facilities would be needed to offset

¹ Wohlfahrt, G., Fenstermaker, L. F. and Arnone, J. A. III. 2008. Large annual net ecosystem CO₂ uptake of a Mojave Desert ecosystem. *Global Change Biology*. 14(7): 1475-1487.

the imbalance between solar electric generation which is sunlight dependent and actual demand for power. The DPEIS does not explain how many new fossil-fuel power plants (and their emissions output) will be needed to ensure continuity of energy generation to match consumption.

Effects on Wildlife and Special Status Species

The DPEIS does not take the requisite hard look at impacts to the wildlife, vegetation, and threatened and endangered species in the massive action area for the preferred alternative. This is a major omission that merits recirculation of the DPEIS.

DESERT TORTOISE

The BLM's preferred alternative opens 12 percent of "desert tortoise" habitat to solar development. DPEIS at ES-21. First, this statement does not distinguish between the listed *Mojave* desert tortoise population and the candidate *Sonoran* desert tortoise. Second, this habitat consists largely of the essential matrix habit that connects desert tortoise populations and conservation areas. Third, this habitat includes peripheral desert tortoise populations that may be important in the species' response to climate change. Thus decisions made in this PEIS process could have highly significant consequences for both these taxa. Despite the requirements to do so, the PEIS does not provide quantitative estimates of the size of the impacted population. This is particularly problematic given the BLM's recent need to re-initiate consultation with te USFWS over impacts to desert tortoise at the Ivanpah Solar Electric Generating System project where it seriously underestimated the number of affected tortoises.

Mojave desert tortoises, listed as threatened under the ESA, occur in the affected areas of the following 8 SEZs: Amargosa Valley, Delamar Valley, Dry Lake, Dry Lake Valley North, East Mormon Mountain, Iron Mountain, Pisgah, and Riverside East. Sonoran desert tortoises, candidate species for ESA listing, may occur in the affected areas of the following 3 SEZs: Brenda, Bullard Wash, and Gillespie. These SEZ will directly impact desert tortoises in at least four of the six Recovery Units identified in the 1994 Recovery Plan², and may seriously compromise connectivity and gene flow between the Evolutionarily Significant Units of desert tortoise that occupy them.

The BLM needs to analyze the cumulative effects of development on desert tortoise for each alternative. It needs to determine the affected population size, fully analyze the cumulative effects of fragmentation, and fully analyze the impacts to connectivity between desert tortoise genetic units and between desert tortoise conservation areas. Unless additional safeguards are built in, we do not see how the USFWS will be able to avoid issuing a jeopardy finding over impacts to desert tortoise.

GOLDEN EAGLE

² Fish and Wildlife Service. 1994. Desert Tortoise (Mojave Population) Recovery Plan. U.S. Fish and Wildlife Service, Portland, Oregon. 73 pages plus appendices.

Golden eagle (*Aquila chrysaetos*) is a fully protected species under The Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c). The USFWS currently does not issue “take” permits for this species because the species is declining. Loss of foraging habitat that results in a decrease in productivity or nest abandonment is considered “take”. The DPEIS recognizes that golden eagles use many of the solar power development areas including most of the proposed SEZ as foraging areas.

McCrary et al. 1986³ studied a small, prototype thermosolar facility. They found that bird mortality occurred through collisions with structures such heliostats and from burning when birds flew through points where energy was focused from the heliostats. They cautioned that “Since Solar One is only a 10 megawatt pilot facility, future project designed to produce hundreds of megawatts will require several thousand heliostats and much taller receiver towers. The greater magnitude of these facilities may produce non-linear increases in the rate of avian mortality when compared to Solar One and extrapolations from this study should be made with caution. The removal of large tracts of desert from biological production for solar power generation and the ecological effects caused thereby should also be of concern.” Given the large areas that may be developed, the range of technologies, and the existing database we believe that there is ample information regarding the potential risk to golden eagles, and believe that this program will take golden eagles. BLM should propose avoidance of any take by restricting the areas open to development and by restricting the technologies used to those that do not require structures that may place eagles at risk.

GREATER SAGE-GROUSE & GUNNISON’S SAGE-GROUSE

High quality sagebrush habitats or those that have good restoration potential should not be developed for solar energy in areas where greater sage-grouse and Gunnison sage-grouse occur because these species require landscape level conservation measures to promote their recovery. The cumulative effects analysis does not quantify the impacts to the species populations, nor does it provide a quantitative analysis of the cumulative effect of the transmission lines and fences, and access roads that will be engender by each alternative. These deficits must be addressed.

FISH & AQUATIC SPECIES

Many aquatic species will be affected or may be affected by water drawdown and by water use. However, there is no analysis of the cumulative impacts of water use on fish and wildlife and their habitats within each SEZ.

Livestock Grazing

The DPEIS proposes “Wherever there are reductions in grazing use, opportunities for mitigating this loss through changes in livestock management or installation of range improvements should be considered.” DPEIS at 5-12. There is no analysis of the cumulative effects of this proposal on sensitive resources including wildlife.

³ McCrary, M. D., McKernan, R. L., Schreiber, R. W., Wagner, W. D. and Sciarrotta, T. C. 1986. Avian Mortality at a Solar Energy Power Plant. *Journal of Field Ornithology*. 57(2): 135- 141.

Water Resources

Water is one of the most precious desert resources, and maintaining surface waters and flows, and ground water supplies is essential for conserving desert ecosystem function. Developing large tracts of land for solar power plants impact surface waters and groundwater. Many of the desert basins are already in a serious water overdraft situation and the entire western United States is facing serious water shortages under all climate change scenarios. It is critical that the BLM ensures that solar development does not allow unacceptable impacts to both the quantity and quality of water resources and the ecosystems, habitat and species that depend on them. The BLM should require that any water needs for authorized power plants be completely offset by reductions in other uses within the basin.

The DPEIS analysis of the risks of hydrological disruption posed by large-scale power plants is inadequate. The DPEIS should include uniform mitigation and monitoring measures for the ephemeral washes on the public lands. The ecological condition of these washes is extremely important for multiple reasons, including the hydrologic health of the watershed (infiltration, erosion, downstream water quality), biodiversity (migratory corridors and habitats), and vegetation (the majority of vegetation occurs alongside of these supplemental water sources). In some states, such as California, state agencies assert jurisdiction and require mitigation for impacts to ephemerals streambeds. However, this is not true in Arizona. The BLM must require full mitigation in the form of purchase of replacement ephemeral streambed habitat.

5. CALIFORNIA PROPOSED SOLAR ENERGY ZONES

California gets the lion's share of the acreage of the proposed solar study areas. The maps depict four study areas within the FLPMA designated California Desert Conservation Area: Imperial East (12,830 acres), Iron Mountain (109,642 acres), Pisgah (26,282 acres), and Riverside East (202,295 acres). The maps also depict vast tracts of land sweeping across the Mojave and Colorado Deserts that are lands being considered open development in the DPEIS preferred alternative.

Development of these four solar study areas would result in a massive loss of habitat, major fragmentation of entire desert ecosystems and loss of connectivity. This is clearly incompatible with the purpose of the California Desert Conservation Area espoused in FLPMA, which is "to provide for the immediate and future protection and administration of the public lands in the California desert within the framework of a program of multiple use and sustained yield, and the maintenance of environmental quality". Contrary to the BLM's goal of facilitating siting of solar power plants, the proposed SEZ themselves are located in relatively resource rich locations. This makes them both controversial and inappropriate.

There is a considerable amount of solar energy power plant development already underway in California with 19,100 MW on public lands within the CDCA alone, and the goal of 10,000 MW mentioned in the Energy Policy Act and Secretarial orders has clearly been exceeded. Given the large amount of public land which is already slated for development for

solar power plants in California, the BLM should readdress its purpose and need, and reconsider the need for locating any Solar Energy Zones in the state.

Comments Specific to the Proposed Imperial East SEZ (California)

The proposed Imperial East SEZ includes 5,722 acres of public land. It is located in Imperial County in southeastern California, near the United States–Mexico border between I-8 and State Route 98, and just north of the All-American Canal.

We do not support the designation of the Imperial SEZ. There are multiple conflicts with cultural resources and wildlife and habitat resources associated with this proposed SEZ. It is located immediately east of a cultural ACEC (Lake Cahuilla – C) and immediately southwest of East Mesa ACEC.

Existing transmission lines in the area are inadequate to deal with the assumed output and “upgrades of existing transmission lines would be required to bring electricity from the proposed Imperial East SEZ to load centers; however, at this time the location and size of such new transmission facilities are unknown.” DPEIS at 9.1-3.

Cultural Resources: The Imperial East SEZ lies between Lake Cahuilla cultural ACECs C and D and is an area rich in important cultural resources. According to the DPEIS, “One archaeological survey has been conducted within the Imperial East SEZ in the northwest corner of the SEZ.” The size of this surveyed area is not provided but appears cover only a small proportion of the SEZ. The DPEIS recognizes that Lake Cahuilla ACECs C and D could be exposed to additional human traffic, resulting in an increased risk of loss of prehistoric resources. DPES at 9.1-6. The Specific Design Feature to deal with this issue is: “Once construction of solar energy facilities begins, the BLM would monitor to determine whether increases in traffic in the ACECs occurs and whether additional management measures are required to protect the resources in these areas.” This is inadequate since it only monitors for impacts. The emphasis should be on avoidance. The BLM should survey the entire SEZ for cultural significance prior to making any decision to designate this SEZ. It should establish clear measures to avoid any impacts to the adjacent and nearby ACECs.

Yuma Clapper Rail: The proposed Imperial East SEZ is immediately north of a “wetland” mitigation north of the All American Canal area that provides a nesting location for the endangered Yuma clapper rail (CNDDDB occurrence 17). The proposed SEZ includes 44 acres of potentially suitable habitat for the species. The Yuma clapper rail is a California fully protected species. This means that state agencies cannot issue take permits for the species. The SEZ area boundary should be altered to exclude actual and potential Yuma clapper rail habitat and to provide an appropriate buffer to eliminate potential impacts on the local hydrology.

Flat-tailed Horned Lizard: The proposed Imperial East SEZ includes significant amounts of occupied flat-tailed horned lizard habitat. The proposed SEZ falls within the BLM’s designated East Mesa Flat-tailed Horned Lizard Wildlife Habitat Management Area and is adjacent to the East Mesa ACEC. The DPEIS estimates that development of this SEZ will have indirect impacts on 9.0% of available potentially suitable habitat in the region. DPEIS at 9.1-133.

The USFWS's recent decision to withdraw its proposed listing decision for the Flat-tailed horned lizard relied in part on the assumption that "the overall acreage of potential impacts from development of energy facilities is likely to be small compared to the total range of the species". FWS 2011⁴ at 14228. Designation and development of this SEZ will clearly jeopardize this USFWS assumption. The proposed Imperial East SEZ boundaries should be reconfigured to avoid impacts to the flat-tailed horned lizard or the proposed SEZ should be abandoned.

Bighorn Sheep: The proposed Imperial East SEZ includes bighorn sheep habitat. According to the DPEIS (at 9.1-105), "Because it is a BLM sensitive species, the desert bighorn sheep is discussed in Section 9.1.12." However, there is no mention of bighorn sheep in section 9.1.12 let alone any discussion. Nor are bighorn sheep discussed anywhere else in the proposed Imperial East SEZ write-up with the exception of a mention in the cumulative effects section (DPEIS at 9.1-287) that projects may block bighorn sheep dispersal corridors. This inadequacy needs to be rectified.

Golden Eagle: The DPEIS recognizes that the fully protected golden eagle (*Aquila chrysaetos*) may forage on the proposed Imperial East SEZ. The USFWS currently does not issue "take" permits for this species because the species is declining. Loss of foraging habitat that results in a decrease in productivity or nest abandonment is considered "take". Required upgrades to existing transmission lines may exacerbate the risks of take.

Because there are multiple conflicts with cultural resources and wildlife and habitat resources associated with this proposed SEZ, BLM should withdraw the proposed Imperial East SEZ from further consideration.

Comments Specific to the Proposed Iron Mountain SEZ (California)

The proposed Iron Mountain SEZ includes 106,522 acres of public land. It is located in San Bernardino County in southeastern California in Ward Valley between an ACEC, the Chemehuevi Desert Wildlife Management Area (DWMA), and state highway 62.

We do not support the designation of the Iron Mountain SEZ. There are multiple conflicts with wildlife and habitat resources associated with this proposed SEZ. It is located immediately south of the Chemehuevi DWMA and provides patches of desert tortoise habitat that provide the connectivity between the Northern and Eastern Colorado Desert Tortoise Recovery Units. It is also habitat for several rare plants including multiple occurrences of Harwood's eriastrium and Harwood's milkvetch. Large-scale clearance and engineering construction within this site will severely disrupt essential hydrological processes.

The proposed SEZ includes the southern swathe of Ward Valley, well known to the public from the long-running controversy over the nuclear waste facility that was once proposed there. Northern Colorado Recovery Unit desert tortoise populations, bighorn sheep, raptors, hepatic tanager, rare plants including Harwood's eriastrium, and important cultural resources would be directly and indirectly impacted by any power plant projects in this area.

⁴ FWS. 2011. Endangered and Threatened Wildlife and Plants; Withdrawal of Proposed Rule To List the Flat-Tailed Horned Lizard as Threatened. Federal Register. 76(50): 14210- 14268. Tuesday, March 15, 2011.

The proposed Iron Mountain SEZ overlies the Chocolate Mountains - Turtle Mountains - Ward Valley connectivity area, an essential habitat connectivity linkage which provides habitat for species occupation and movement between ecotypes in the region (Spencer *et al.*, 2010). It provides important connectivity and linkage matrix for the desert tortoise, bighorn sheep and other species.

Since designation of the proposed Iron Mountain SEZ is opposed by many state agencies including the California Energy Commission we do not understand why the BLM has continued to waste public resources and not dropped the proposed SEZ from further study. Because there are multiple conflicts with cultural resources and wildlife and habitat resources associated with this proposed SEZ, BLM should immediately withdraw the proposed Iron Mountain SEZ from further consideration.

Comments Specific to the Proposed Pisgah SEZ (California)

The proposed Pisgah SEZ includes 23,950 acres of public land. It is located in San Bernardino County in southeastern California, about 100 mi (160 km) northeast of Los Angeles. The proposed Pisgah SEZ would be sandwiched between two ACECs, the Ord-Rodman DWMA to the west and the Pisgah ACEC to the east, and the Cady Wilderness Study Area to the north.

We oppose the designation of the proposed Pisgah SEZ. This is a resource rich area and there are multiple resource conflicts which make this area highly unsuitable as a SEZ. Desert tortoise, bighorn sheep, Mojave fringe-toed lizard, raptors, rare plants including white-margined beardtongue, small flowered androstephium and Emory's crucifixion-thorn, other sensitive species and cultural resources would be directly and indirectly impacted by utility-scale projects. A recent study has cautioned identification of this area because of multiple impacts to desert tortoise and bighorn sheep movement.⁵ The SEZ is adjacent to known pockets of high desert tortoise density, and this area provides the only connectivity between tortoises in the Southern Mojave and Central Mojave populations as identified by Murphy et al, 2007⁶, and it will impact connectivity between the West Mojave Recovery Unit and the eastern desert tortoise recovery units. The site is immediately adjacent to two ACECs and a Wilderness Study area, and includes part of the Pisgah Lava Flow Research Natural Area. Large-scale clearance and engineering construction within this site will severely disrupt essential hydrological processes. For all these reason, this sensitive and significant area should be removed from further consideration as a Solar Energy Zone.

Because there are multiple conflicts with cultural resources and wildlife and habitat resources associated with this proposed SEZ, BLM should immediately withdraw the proposed Pisgah SEZ from further consideration.

⁵ Bare, L., Bernhardt, T., Chu, T., Gomez, M., Noddings, C. and Viljoen, M. 2009. Cumulative Impacts of Large-scale Renewable Energy Development in the West Mojave. Effects on habitat quality, physical movement of species, and gene flow. Masters Thesis. University of California, Santa Barbara. 144 pp. Available at: http://fiesta.bren.ucsb.edu/~westmojave/images/Wemo_Final.pdf

⁶ Murphy, R. W., Berry, K. H., Edwards, T. and McLuckie, A. M. 2007. A Genetic Assessment of the Recovery Units for the Mojave Population of the Desert Tortoise, *Gopherus agassizii*. Chelonian Conservation and Biology 6(2): 229–251.

Comments Specific to the Proposed Riverside East SEZ (California)

The proposed Riverside East SEZ is the largest of the proposed SEZs in the six-state study area, with a total area of 202,896 acres. It sprawls along Interstate 10 from the Joshua Tree National Park/Desert Center area to Blythe, California.

There are multiple resource conflicts at this site in part because the study site is extremely large and ranges across the heart of California's Colorado Desert region.

We oppose the designation of the proposed Riverside East SEZ. The northeastern portion includes extensive occupied desert tortoise habitat. The entire polygon effectively divides the Northern Colorado Desert Tortoise Recovery Unit from the Eastern Colorado Desert Tortoise Recovery Unit, and development thus threatens to sever connectivity entirely. The proposed study area also includes bighorn sheep, raptor, and sensitive bat habitats, and would impact many rare plant species including Coachella valley milkvetch, jackass clover at Palen Lake, and Harwood's milkvetch. There are important cultural sites particularly those associated with the dry lakes. The polygon also includes Ford Dry Lake and development would impact off-road vehicle use. A number of ACECs are entirely surrounded and isolated by the proposed SEZ. Large-scale clearance and engineering construction within this site will severely disrupt essential hydrological processes.

Because there are multiple resource conflicts with this sprawling proposed SEZ, the BLM should remove this area from further consideration as a Solar Energy Zone.

6. ARIZONA PROPOSED SOLAR ENERGY ZONES

The BLM's preferred alternative opens 7,009 square miles of land in Arizona to solar development, an area 326 times the size of the SEZ-designated lands. DPEIS at ES-6, Table ES.2-1. No other state has such a large percentage of total BLM acres open to solar development as Arizona under the preferred alternative (49 percent), nor such a great disparity between the SEZ alternative and the preferred alternative.

The BLM anticipates that 214,000 acres will be developed within the next 20 years under the reasonably foreseeable development scenario (RFDS). DPEIS at ES-14. This is well within the SEZ acreage of 677,384 acres. DPEIS at ES-6, Table ES.2-1. It is therefore entirely unclear why the BLM's preferred alternative entails opening over ten times the amount of land necessary for solar development under its own projections; the ratio of land under the SEZ alternative meets the criteria the BLM specifies for the preferred alternative, that is "adequate amounts of land available to support the level of development projected in the RFDS and would provide a great deal of flexibility in siting both solar energy facilities and associated transmission infrastructure." DPEIS at ES-29. There is no justification as to why the BLM needs to designate so many acres as open to power plant development.

The SEZ-specific design features for the Arizona SEZs include the development of additional range infrastructure and changes to grazing management to mitigate the loss of AUM that may be associated with the solar developments. Range “improvements”/developments need a separate NEPA process to ensure against adverse effects.

We are concerned with the estimated fresh surface water and groundwater use the solar developments would entail. Arizona is facing serious water shortages under all climate change scenarios, including a tenuous allocation from the Colorado River. Allocating potable water for solar development, either through allowing surface water transfers or groundwater pumping, is giving away precious public trust resources for private development. We do not believe that the DPEIS does an accurate or thorough analysis of the risks of hydrological disruption the proposed action poses to Arizona’s public lands. The threats of drawdown are too easily dismissed in the DPEIS. See, for example, DPEIS at 8.1-62. Overdraft in the Brenda SEZ groundwater basin has already caused substantial ecological and geologic impacts from subsidence. If the BLM were proposing to allow solar development on existing in-holdings, urban-adjacent lands, or other areas that might already have infrastructural support for it, the agency could be requiring the use of non-potable water (effluent) in the generation of these “renewable” energy supplies. Given the slow rate of aquifer recharge, we don’t believe that the current proposals are truly “renewable.”

The DPEIS should be amended to reflect the current status of the Sonoran desert tortoise which is a candidate species for listing. 75 FR 78094-78146, December 14, 2010. The USFWS specifically identified the disturbance anticipated by the Sterling Solar Generating Facility, a solar development not included in the DPEIS and apparently not considered in the reasonable foreseeable development scenario on the Black Mountains desert tortoise population. The USFWS determination that the Sonoran desert tortoise warranted listing discussed the threats from new transmission lines and roads from solar development. The FWS makes plain that solar developments, combined with other threats in the species habitat, makes Sonoran desert tortoise eligible for endangered species status. In the finding, the agency acknowledges that new threats may elevate the species for full ESA protection. We believe that if the BLM goes forward with the locations listed in the DPEIS for Arizona, this alone may compel full listing of this taxon.

The BLM relies up the implementation of programmatic design features to reduce impacts to special status species and, presumably, finds these suitable reductions in the threat to Sonoran desert tortoise as well. However, desert tortoise is a highly mobile species, known to move across large distances and between mountain ranges. *See* Connor and Rosmarino, 2008. Thus, even if the solar installations are not directly on top of tortoise burrows, the impacts within the habitats of this species cannot be dismissed.

While the DPEIS minimizes the scale of the impacts to the Sonoran desert tortoise by isolating the acreage at each SEZ, it is important to acknowledge the range-wide threats this species faces, including the cumulative effects of solar development at other SEZs and on other solar project sites. Where the BLM discusses compensatory mitigation by improving habitats on acquired lands, we propose the agency consider retiring grazing allotments and reducing this known adverse effect in tortoise habitat.

The DPEIS does not include mitigation or monitoring measures for the ephemeral washes on the public lands proposed for development. The ecological condition of these washes is extremely important for multiple reasons, including the hydrologic health of the watershed (infiltration, erosion, downstream water quality), biodiversity (migratory corridors and habitats), and vegetation (the majority of vegetation occurs alongside of these supplemental water sources). Because the Arizona BLM does not measure or monitor rangeland health attributes in washes, the downstream impacts of the SEZ developments will go unquantified and unmitigated. The BLM must simultaneously develop land health standards and practices that will capture any consequences of the solar developments, with baseline data on the ephemeral wash environment collected before any development takes place. See, for example, the wetlands on the Bullard Wash SEZ; the ecological health of these important habitats would not be monitored under any existing monitoring protocols employed by the BLM. DPEIS at 8.2-68.

Comments Specific to the Proposed Brenda SEZ (Arizona)

The SEZ-specific design features for the Brenda SEZ in Arizona include the development of additional range infrastructure and changes to grazing management to mitigate the loss of AUM on the Crowder-Weisser allotment. DPEIS at 8.1-5. As we suggested in our earlier comments, the BLM should have considered simply allowing for relinquishment of those AUM as well. This is especially pertinent because the Crowder-Weisser allotment provides habitat for the Sonoran desert tortoise, a species that would be adversely affected by additional range developments and grazing concentration areas. By range “improvements,” the agency usually means additional water supplies, a cumulative impact that the DPEIS fails to analyze at this SEZ location. DPEIS at 8.1-7.

The DPEIS hints at potential compensatory mechanisms to balance acreage of habitat loss but does not commit to a mitigation program for the solar proposal. DPEIS at 8.1-148. It suggests improving the carrying capacity for tortoise on acquired lands or enhancing tortoise habitat on federal land, but it does not commit to any clear course of action to do so. The proposed action should have specific offsets and actions identified if the BLM expects the public to have any faith in these mitigation measures. For example, the BLM could have used the PEIS to modify all land use plans to allow voluntary buyout of grazing permits

The DPEIS posits a reduction in 315 AUM from the Crowder-Weisser allotment due to the footprint of the Brenda SEZ. DPEIS at 8.1-29. The DPEIS discusses absorption of the AUM on other parts of the vast acreage associated with this allotment. The DPEIS should acknowledge, and the BLM should clarify, that earlier assessments of the rangeland health of this allotment have specifically indicated, “The public lands [of the allotment] do not regularly produce sufficient amounts of forages to sustain a consistent livestock grazing program throughout the allotment.” Crowder-Weisser Standards and Guidelines Assessment. The active use on the allotment has been substantially lower than the permitted use for this reason. Therefore, the proposed action should be to simply eliminate the acreage associated with the solar development and adjust the AUM on the permit to the actual forage remaining on the allotment.

We're concerned about the "should" statements in the SEZ-specific design features tables (e.g. "Bouse Wash should be avoided... Tyson Wash should be spanned by the transmission line," DPEIS at 8.1-9). Because these are supposed to be mitigation measures for reducing the impact of solar development on wildlife resources, the DPEIS must use imperative language ("will" and "shall") to make these hard and fast commitments. Without this, the mitigation measures promised in the DPEIS are merely suggested remedies and the contingent effects analysis is meaningless.

We note that the DPEIS only assesses the impact of the acoustic environment on the human communities surrounding the Brenda SEZ. DPEIS at 8.1-14. It does not consider the acoustic impacts of the proposed developments on the native and migratory wildlife species of the region, an oversight that must be remedied before the final EIS. The sonic considerations are not even addressed in the species-specific analysis later in the chapter. See, for example, DPEIS 8.1-152.

In our scoping comments, we specifically raised the issue of invasive species infestation in the Brenda SEZ. The DPEIS does not respond specifically, but generally describes, "Noxious weeds could become established." DPEIS at 8.1-8. This ignores the site-specific information that problematic invasive weeds are already there. The DPEIS reports that no noxious weeds are present on the Brenda SEZ (DPEIS at 8.1-72) but does not consider whether weeds are nonetheless present, including *Brassica tournefortii*, a highly flammable and invasive pest plant. Moreover, while BLM does not report these species being on the proposed SEZ in August 2009, it does not describe whether they are present on the proposed transmission line footprint or within the cumulative impact area.

The DPEIS claims that there are no ground-disturbing activities associated with the project developments within the area of indirect effects. DPEIS at 8.1-146. This disregards the effects of hazardous waste spills travelling through the soil, affecting biological soil components, reductions to soil integrity and stability.

Section 8.1.11 of the DPEIS describes the impacts to wildlife and aquatic biota that could occur with the potentially affected area of the proposed Brenda SEZ. DPEIS at 8.1-79. We find it remarkable that the same justification is provided for nearly every species that the BLM considers: "Small overall impact." The reality is, cumulatively, the impact will be profound within the area that the SEZ is located, likely the complete obliteration of suitable habitat for many dozens of species and hundreds of individuals. The DPEIS should not minimize but rather disclose the extent and intensity of the proposal.

It is not clear from the DPEIS whether the BLM has considered the cumulative impacts of the Brenda SEZ in context of the "Quartzsite Solar Energy Project" in La Paz County, Arizona. The Quartzsite project was scoped in January 2010, and it is also located on a section of the Crowder-Weisser allotment very near to the proposed SEZ. The potential for this additional (and undescribed in the DPEIS) development in the same area is a present and reasonably foreseeable future action that should have been analyzed and disclosed. The Quartzsite project is likely to have serious visual impacts (given the extent of proposed infrastructure) and cumulative effects on wildlife species in the area.

Comments Specific to the Proposed Bullard Wash SEZ (Arizona)

The Bullard Wash SEZ is in a remote desert area, with the nearest major road approximately 5 miles away to the south and the nearest transmission line 5 miles to the north of the SEZ. DPEIS at 8.2-1. The extent to which this area has already been impacted by human activities is unspecified, but its remoteness and inaccessibility make it an inappropriate site for new, industrial development. The BLM should have considered lands that are already along roadway corridors or transmission lines in order to minimize the footprint of the solar development.

The Bullard Wash SEZ is situated in an area recognized for its remoteness and inaccessibility, as signified by the high number of Wilderness Areas and Areas of Critical Environmental Concern in the surrounding public lands. DPEIS at 8.219. The experience of visitors to these places and the integrity of the habitats for non-human species reflect the lack of industrialized landscapes, exactly the opposite of what the BLM is now proposing. The BLM must commit to limiting types of solar development at this SEZ to those which would not impact the viewshed. DPEIS at 8.2-21. Moreover, the experience of Wilderness is not only visual, but a feeling of solitude that cannot be calculated in spatial analysis. BLM has not conducted a social assessment to determine these impacts to human experience of the natural environment.

We note that the DPEIS only assesses the impact of the acoustic environment on the human communities surrounding the Bullard Wash SEZ. DPEIS at 8.2-14. This does not consider the acoustic impacts of the proposed developments on the native and migratory wildlife species of the region, an oversight that must be remedied before the final EIS. The sonic considerations are not even addressed in the species-specific analysis later in the chapter.

The Bullard Wash SEZ occurs on three perennial/ephemeral grazing allotments. DPEIS at 8.2-27. Similar to the Brenda SEZ, the BLM cannot posit a ratio-based reduction in AUM on these allotments scaled to acreage lost; desert vegetation is extremely patchy and a new “carrying capacity” estimate would need to be done before grazing is reauthorized on the newly-demarcated boundaries of each allotment. Where the DPEIS says, “Quantification of the impact on the grazing permittees would require a specific analysis...” (DPEIS at 8.2-28) it should more appropriately read, “A new EIS will be completed to determine a range of alternatives for the downsized allotments.”

The calculations of the impacts to groundwater inflows from the Bullard Creek SEZ’s groundwater basin from solar development are an issue not just for the geological stability of the area (subsidence), but because the contribution of groundwater to the nearby surface waters of the Havasu Lake and Bill Williams river also relates to the extent of riparian habitat available for imperiled species. The DPEIS does not address these “downstream” impacts of the proposed solar development. DPEIS at 8.2-64. Stating that withdrawals “should” be limited to prevent impacts to riparian areas is insufficient protection for these special habitats. DPEIS at 8.2-80.

Comments Specific to the Proposed Gillespie SEZ (Arizona)

The Gillespie SEZ is described in the PEIS as “undeveloped and rural” and “undeveloped scrubland characteristic of a semiarid desert valley.” DPEIS at 8.3-1. The proposed action would completely change the description of this landscape, converting the undeveloped character to an industrialized power generation station, permanently stripping these lands of their rural and desert valley character.

We note that the map included in the DPEIS does not address the designation of the nearby BLM lands. DPEIS at 8.3-2. The lands to the east to the east of the SEZ are within the Sonoran Desert National Monument, a place so special and remarkable that it was so designated in 2001. The proclamation describes this area as having “an extraordinary array of biological, scientific, and historic resources. The most biologically diverse of the North American deserts.... excellent habitat for a wide range of wildlife species.” Surely, the BLM does not expect the public to believe those values stop at the arbitrary boundaries of the monument? The Gillespie SEZ and the surrounding public lands are equally important to the ecological integrity of the region.

The DPEIS discusses mitigating the loss of 14.6 percent reduction in future ephemeral grazing authorizations in the Layton allotment as a result of development in the Gillespie SEZ. Table 8.3.1.3-1. It is unclear how the BLM determined this reduction; carrying capacity is not arbitrarily determined by acreage, but should be based on actual available resources. DPEIS at 8.3-30. This description also fails to correspond with descriptions later in the document that admit the Gillespie SEZ would affect four grazing allotments. DPEIS at 8.3-29.

It is similarly unclear why the BLM believes that it would be appropriate to mitigate impacts to grazing allotments with additional range developments. Range developments have profound impacts of vegetation, soils, and invasive species. We suggested, and BLM has ignored, that the agency facilitate the retiring of grazing allotments as a mitigation measure instead of increasing livestock impacts on the remaining, undeveloped lands.

The amount of water being discussed in the DPEIS is enormous. Table 8.3.1.3-1. The availability of this water has not been demonstrated. DPEIS at 8.3-56. Water availability in Arizona is extremely uncertain, and the idea that Arizona will give up a share of its precious water to produce electricity for export to California and the west-wide grid is highly speculative. The DPEIS fails to account for these transfers or substantiate its claims about available water resources in the Phoenix AMA.

Impacts to the riparian areas dependent on the same aquifer should be considered more thoroughly than the DPEIS currently considered them. The admissions in the cultural resources section of Table 8.3.1.3-1 are striking: “Development in the proposed SEZ would eliminate some traditionally important plants and some habitat of traditionally important animal species.” This conflicts with statements elsewhere in the DPEIS that downplay the significance of the effects on habitat.

It is clear from the map in Figure 8.3.3.1-1 that the areas being considered by the BLM for solar development would completely fragment and isolate the specially-reserved areas on BLM lands. The continuity and connectivity benefits of adjacent Wilderness, monuments, and

special resource management areas would be utterly undone by opening all the other BLM lands in the region. With industrialized solar development in the interstices, the value of the habits at each otherwise protected area is diminished. The preferred alternative would have isolating consequences for wildlife populations.

The statements in the DPEIS regarding the decommissioning and reclamation of the solar site are entirely unrealistic. The DPEIS states that the site would be reclaimed to its preconstruction state. 8.3-61. One only need to watch this video (http://www.youtube.com/watch?feature=player_embedded&v=5BGRD21H07Y) to understand how impossible it will be to ever restore the Sonoran desert to pre-industrialized state. (The video is taken in California at the BrightSource Energy development on BLM land.) The unlikelihood that this site can ever be “reclaimed” (and we note that BLM is using the language of the 1872 Mining Act rather than the contemporary “restoration”) is demonstrated by the inclusion of precipitation data later in the DPEIS. DPEIS at 8.3-65. The area averages 7.6 inches of rain annually. Id. Perennial vegetation in this desert is slow-growing and would take centuries to re-colonize the development site. This realistic time-frame should be made more explicit in the DPEIS. Statements such as “Re-establishment of desert scrub communities in temporarily disturbed areas would likely be very difficult and might require extended periods of time,” (DPEIS at 8.3-73) are misleading because the use of the descriptor “temporary” is inaccurate and the “extended periods of time” is vague. This is a permanent and wholesale destruction of native vegetation that will take centuries, if ever, to restore.

7. NEVADA PROPOSED SOLAR ENERGY ZONES

Seven SEZ have been proposed in Nevada: Amargosa Valley (32,699 acres), Dry Lake (16,516 acres), Delamar Valley (17,932 acres), Dry Lake Valley North (49,775 acres), East Mormon Mountain (7,418 acres), Gold Point (5,830 acres), and Miller’s (19,205 acres).

Four of these SEZ (Amargosa Valley, Dry Lake, Delamar Valley and, East Mormon Mountain) are in desert tortoise habitat.

Six of the seven SEZ are located within BLM grazing allotments: Millers (Monte Cristo Allotment), Gold Point (Magruder Mountain Allotment), Dry Lake (Dry Lake Allotment) Mormon Mountain (Gourd Springs and Summit Springs allotments), Dry Lake Valley (Wilson Springs, Simpson and Ely allotments), and Delamar (Buckhorn and Oak Springs allotments).

Three of the SEZ (Amargosa Valley, Dry Lake Valley North, and Delamar Valley) are situated in regions of the state with very limited ground and surface waters. These water-related issues make these areas unsuitable for further consideration.

Comments Specific to the Proposed Amargosa Valley SEZ (Nevada)

The proposed 31,625 acre Amargosa Valley SEZ is located in Nye County in southern Nevada near the California border. The proposed Amargosa Valley site lies between Death

Valley National Park and Ash Meadows National Wildlife Refuge and is part of the Death Valley regional groundwater flow system.

The 23,000 acre Ash Meadows National Wildlife Refuge provides habitat for 12 species listed under the Endangered Species Act. The refuge was established specifically to protect these threatened and endangered species. Most of the listed species are dependent on aquatic or wetland environments within the refuge. The refuge also includes the National Park Service administered Devil's Hole, the only known habitat for the Devil's Hole pupfish. On November 4, 2008, the Nevada State Engineer issued Order 1197 announcing that new applications to appropriate additional water from the Amargosa Desert basin within 25 miles of Devil's Hole would be denied due to concern over the effect of groundwater pumping on the water level in Devil's Hole. Based on the above, the Amargosa Valley study area should be eliminated from further consideration as a Solar Energy Zone.

The desert tortoise section does not discuss important information relevant to the analysis of impacts. The desert tortoise population in the local area (Amargosa Desert/Pahrump Valley) can be genetically delineated from other desert tortoise populations in Nevada, yet none of the established Nevada desert tortoise ACECs adequately conserves this population (Britten *et al.*, 1997⁷). The genetic lineation of the "Amargosa" desert tortoise sub-type has been confirmed and refined by Haggerty, 2008⁸.

The Amargosa desert tortoise subtype is also of scientific interest since it occupies the northern end of the species range. The limited occurrence, importance to genetic diversity and under representation of the sub-type in conservation areas underlies the need to conserve this desert tortoise population. This is especially important given the threats posed by global climate change. As the USFWS 2008 Draft Revised Recovery Plan noted, "Climatic regimes are believed to influence the distribution of plants and animals through species-specific physiological thresholds of temperature and precipitation tolerance. Warming temperatures and altered precipitation patterns may result in distributions shifting northward and/or to higher elevations, depending on resource availability (Walther et al. 2002). We may expect this response in the desert tortoise to reduce the viability of lands currently identified as "refuges" or critical habitat for the species." (USFWS 2008 at 133) The proposed Amargosa SEZ will block any northward shift of this population because it crosses the Amargosa Valley.

The cumulative effects analysis points out that there are 14,070 acres in the proposed SEZ that already have approved projects or projects under NEPA analysis. The SEZ estimates that another 25,300 acres would be developed over a 20 year analysis horizon. However, the DPEIS does not include any analysis of the potential impacts and effects of over 39,000 acres of desert tortoise habitat being destroyed.

⁷ Britten, H. B., Riddle, B. R., Brussard, P. F., Marlow, R. and Lee, Jr., T. E. 1997. Genetic delineation of management units for the desert tortoise, *Gopherus agassizii*, in the northeastern Mojave Desert. *Copeia* 1997: 523-530.

⁸ Haggerty, B. 2008. Ecological Genetics of the Mojave Desert Tortoise. PhD. Dissertation. University of Nevada, Reno. 244 pp.

Because of resource conflicts related to water resources, desert tortoise, other threatened and endangered species, and other special status species, BLM should remove the Amargosa SEZ from further consideration.

Comments Specific to the Proposed Dry Lake Valley North SEZ & Delamar Valley SEZ (Nevada)

The Dry Lake and Delamar Valleys are part of the White River Flow System. Groundwater in these two basins has been fully appropriated over-appropriated in down gradient basins. These proposed Dry Lake Valley North SEZ and Delamar Valley SEZ are inappropriate locations for solar energy project development due to the lack of groundwater. BLM should remove the proposed Dry Lake Valley North SEZ and the Delamar Valley SEZ from further consideration.

Comments Specific to the Proposed East Mormon Mountain SEZ & Dry Lake SEZ (Nevada)

The proposed Dry Lake SEZ is located on the Dry Lake playa. Playas are significant ecotypes that are underrepresented in conservation areas. Barren, usually alkaline desert playas (dry lakebeds), are found in closed basins in the Intermountain West. These basins are intermittently (once every few years) or seasonally (every year) flooded. Water is prevented from percolating through the soil by an impermeable subsurface layer and is left to evaporate. Salt crusts and high salt in the soils greatly affect species composition. While the appearance is barren, some species such as iodinebush, black greasewood, spiny hopsage, Lemmon's alkali grass, Great Basin wildrye, saltgrass, or saltbush occur around the margins of the playa. This system grades into salt-desert scrub and sagebrush habitats. Downwind of playas, active and stabilized sand dunes often form. Thus if the subsurface of a playa is disturbed, the playa's integral role in the ecosystem may irreversibly untangle.

Both the proposed East Mormon Mountain SEZ and the proposed Dry Lake SEZ include desert tortoise habitat. East Mormon Mountain is immediately adjacent to the Mormon Mesa DWMA and Beaver Dam Slope DWMA in the Northeastern Mojave Recovery Unit. Recent monitoring reports from USFWS indicate that the northern populations within the Northeastern Mojave desert tortoise Recovery Unit are low and appear to be declining. Because environmental stressors are indicated as a reason for this species decline, these SEZ should be withdrawn from further consideration as Solar Energy Zones.

Comments Specific to the Proposed Gold Point SEZ (Nevada)

The proposed Gold Point SEZ, totaling an area of 4,810 acres, is located in upper Lida Valley, a closed basin lying between MacGruder Mountain and Slate Ridge. The locale is currently pristine and remote from load centers, and a new transmission line would be needed to provide access from the SEZ to the transmission grid. There resident pronghorn herd that stays in the Valley year-round. No other active energy development projects have been proposed near this site. Because of its remoteness, pristine condition, lack of water, and other conflicts, BLM should withdraw the proposed Gold Point SEZ from further consideration.

8. UTAH PROPOSED SOLAR ENERGY ZONES

Three proposed SEZ have been identified in Utah: Escalante Valley (6,614 acres), Milford Flats South (6,480 acres), and Wah Wah Valley (6,097 acres).

The ground water situation in the region is critical with most of the basins currently over-appropriated and closed to new surface water and groundwater appropriations (Utah DWR 2010).

The three study areas lie within BLM grazing allotments. Escalante Valley is within Butte Allotment, Milford Flats South is within the Minersville allotment group, Wah Wah Valley is in Wah-Wah Watson Allotment.

Bald eagle, *Haliaeetus leucocephalus*, may occur on all the Utah SEZ. Bald eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c). Although the DPEIS mentions the loss of foraging habitat it fails to analyze risks from structures associated with solar power plants. This deficit must be addressed. The DPEIS recognizes that the fully protected golden eagle (*Aquila chrysaetos*) may forage on the proposed Utah SEZ. The USFWS currently does not issue “take” permits for this species because the species is declining. Loss of foraging habitat that results in a decrease in productivity or nest abandonment is considered “take”. Although the DPEIS mentions the loss of foraging habitat it fails to analyze risks from structures associated with solar power plants. Required upgrades to existing transmission lines may exacerbate the risks of take.

Comments Specific to Escalante Valley SEZ (Utah)

The proposed 6,614 acres Escalante Valley SEZ is located in Iron County in southwestern Utah.

This relatively remote site would need construction of extensive new access roads. New transmission lines or upgrades of existing transmission lines would be required to bring electricity from the proposed Escalante Valley SEZ to load centers. The size and location of these are not described further in the DPEIR. However, since these will have similar impacts to the SEZ itself, they must be described in the cumulative effects analysis.

The proposed Escalante Valley SEZ is within Butte grazing allotment and would remove about 20% of the allotment. The SEZ-Specific Design Features states “Consideration should be given to the feasibility of replacing all or part of the lost AUMs through changes in grazing management or in development of additional range improvements on public lands remaining in the allotment.” DPEIS at 13.1-5. We suggested in our scoping comments that the BLM should also allow for relinquishment of those AUMs. It is unclear why the BLM believes that it would be appropriate to mitigate impacts to grazing allotments with additional range developments. Range developments have profound impacts of vegetation, soils, and invasive species. We suggested, and BLM has ignored, that the agency facilitate the retiring of grazing allotments as a mitigation measure instead of increasing livestock impacts on the remaining, undeveloped lands.

If development of additional range improvements involves developing waters or constructing fences, the BLM must include the impacts of these foreseeable projects in the cumulative effects analysis.

The proposed Escalante Valley SEZ provides habitat for a number of candidate species and other special status species including the greater sage-grouse, western burrowing owl, the ferruginous hawk, the pygmy rabbit, the bald eagle, and the Utah prairie dog. The Escalante Valley SEZ and its affected area are completely within crucial pronghorn habitat. The cumulative effects must include an analysis of the expected new road construction, and new transmission lines and upgrades on each of these species.

Although it has not been surveyed, the BLM believes that the proposed Escalante Valley SEZ has a high potential for containing prehistoric sites in the dune area on the west side of the SEZ; it also has some potential for containing historic sites. The BLM states that “A cultural resource survey of the entire area of potential effects, including consultation with affected Native American Tribes, would first need to be conducted to identify archaeological sites, historic structures and features, and traditional cultural properties, and an evaluation would need to follow to determine whether any are eligible for listing in the NRHP as historic properties.” But this is yet another example of putting the cart before the horse. BLM needs to do these surveys and consultations prior to defining the SEZ, so that the agency can ensure that the SEZ is an area with low resource conflicts.

Comments Specific to Milford Flats South SEZ (Utah)

The proposed 6,480 acres Milford Flats South SEZ is located in Beaver County in southwestern Utah about 21 mi (34 km) northeast of the proposed Escalante Valley SEZ.

This SEZ would need construction of extensive new access roads (about 5 miles). About 19 miles of new transmission lines or upgrades of existing transmission lines would be required to bring electricity from the proposed Milford Flats South SEZ to load centers. The size and location of these are not described further in the DPEIR. However, since these will have similar impacts to the SEZ itself, these reasonably foreseeable projects must be considered in the cumulative effects analysis.

The proposed Milford Flats South SEZ is within the Minersville allotment group and would remove about 10-15% of the allotments. DPEIS 13.2-5. The SEZ-Specific Design Features states “Consideration should be given to the feasibility of replacing all or part of the lost AUMs through changes in grazing management or in development of additional range improvements on public lands remaining in the allotment.” DPEIS at 13.2-5. We suggested in our scoping comments that the BLM should also allow for relinquishment of those AUMs. It is unclear why the BLM believes that it would be appropriate to mitigate impacts to grazing allotments with additional range developments. Range developments have profound impacts of vegetation, soils, and invasive species. We suggested, and BLM has ignored, that the agency facilitate the retiring of grazing allotments as a mitigation measure instead of increasing livestock impacts on the remaining, undeveloped lands. If development of additional range

improvements involves developing waters or constructing fences, the BLM must include the impacts of these foreseeable projects in the cumulative effects analysis.

The proposed Milford Flats SEZ provides habitat for a number of list, candidate, and other special status species including the greater sage-grouse, western burrowing owl, the ferruginous hawk, the pygmy rabbit, the bald eagle, and the Utah prairie dog. The Milford Flats SEZ and its affected area are completely within crucial pronghorn habitat. The cumulative effects must include an analysis of the expected new road construction, and new transmission lines and upgrades on each of these species.

The BLM states that “A cultural resource survey of the entire area of potential effects, including consultation with affected Native American Tribes, would first need to be conducted to identify archaeological sites, historic structures and features, and traditional cultural properties, and an evaluation would need to follow to determine whether any are eligible for listing in the NRHP as historic properties.” But this is yet another example of putting the cart before the horse. BLM needs to do these surveys and consultations prior to defining the SEZ, so that the agency can ensure that the SEZ is an area with low cultural resource conflicts.

Comments Specific to Wah Wah Valley SEZ (Utah)

The proposed 6,097 acres Wah Wah Valley SEZ is located in Beaver County in southwestern Utah about 21 miles northwest of the proposed Milford Flats South SEZ.

The proposed Wah Wah Valley SEZ will have serious impacts on special status species particularly the greater sage-grouse. Transmission access to the proposed Wah Wah Valley SEZ currently does not exist. The nearest existing transmission line is a north-south running 130-kV about 42 miles east of the SEZ. As of February 2010, there were no ROW applications for solar projects within the SEZ. Because of the resource conflicts, the lack of transmission and the lack of demand, BLM should drop this SEZ from further consideration.

The proposed Wah Wah Valley SEZ will occupy about 2.6% of the Wah-Wah Lawson allotment. DPEIS 13.3-23. The SEZ-Specific Design Features states “Consideration should be given to the feasibility of replacing all or part of the lost AUMs through changes in grazing management or in development of additional range improvements on public lands remaining in the allotment.” DPEIS at 13.1-5. We suggested in our scoping comments that the BLM should also allow for relinquishment of those AUMs. It is unclear why the BLM believes that it would be appropriate to mitigate impacts to grazing allotments with additional range developments. Range developments have profound impacts of vegetation, soils, and invasive species. We suggested, and BLM has ignored, that the agency facilitate the retiring of grazing allotments as a mitigation measure instead of increasing livestock impacts on the remaining, undeveloped lands. If development of additional range improvements involves developing waters or constructing fences, the BLM must include the impacts of these foreseeable projects in the cumulative effects analysis. In this case, the effect on the permittee would be so small that BLM should simply decrease the authorized AUM pro rata.

The proposed Wah Wah Valley SEZ provides habitat for a number of candidate species and other special status species including the greater sage-grouse, western burrowing owl, the ferruginous hawk, the pygmy rabbit, the bald eagle, the golden eagle, and the Utah prairie dog. The Wah Wah Valley SEZ and its affected area are completely within crucial pronghorn habitat. The cumulative effects must include an analysis of the expected new road construction, and new transmission lines and upgrades on each of these species. The proposed transmission line that would be required to develop this SEZ passes through crucial greater sage-grouse brooding habitat. That conflict alone is sufficient to enough to invalidate any further selection of this proposed SEZ

Only one small, 2-acre survey for a gravel pit has been conducted within the proposed Wah Wah Valley SEZ; consequently, no archaeological sites have been recorded by the BLM. DPEIS at 13.3-231. Although it has not been surveyed, the BLM believes that the proposed Wah Wah Valley SEZ has the potential to contain significant cultural resources, although the potential is relatively low. The BLM states that “A cultural resource survey of the entire area of potential effects, including consultation with affected Native American Tribes, would first need to be conducted to identify archaeological sites, historic structures and features, and traditional cultural properties, and an evaluation would need to follow to determine whether any are eligible for listing in the NRHP as historic properties.” But this is yet another example of putting the cart before the horse. BLM needs to do these surveys and consultations prior to defining the SEZ, so that the agency can ensure that the SEZ is an area with low resource conflicts.

9. THE DPEIS IS FATALLY FLAWED AND WILL REQUIRE RECIRCULATION OF A REVISED DPEIS

The DPEIS is fatally flawed in a number of respects that will require the BLM to prepare a supplemental NEPA document for recirculation for public comment. The DPEIS provides no quantitative estimates of the numbers of affected individuals for the many threatened and endangered, and special status species that will be affected by the three alternatives. It fails to even list the threatened and endangered species that occur in the areas opened to development under the preferred alternative.

The BLM states in the DPEIS that for its preferred alternative it was unable to obtain complete geographic information system (GIS) data across the six-state study area and thus could not map the exact footprint of the alternative nor calculate the exact acreage. DPEIS at 2-3.

These deficiencies amount to failure to comply with provisions of the Endangered Species Act, FLPMA as well as NEPA. The BLM should prepare a revised Draft PEIS that reviews an adequate range of alternatives, that adequately describes the direct, indirect, and cumulative impacts, and that takes a hard look at those environmental impacts.

We thank you for the opportunity to provide these comments on the Draft PEIS, and we look forward to seeing our recommendations incorporated in the next iteration of this document.

Please continue to include Western Watersheds Project on your list of interested public for all future mailings.

Sincerely,

A handwritten signature in black ink, reading "Michael J. Connor", followed by a long horizontal line extending to the right.

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