Transcript

Solar Energy Development Programmatic EIS Scoping Meeting held in Phoenix AZ, June 24, 2008

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UNITED STATES DEPARTMENT OF ENERGY AND BUREAU OF LAND MANAGEMENT

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SOLAR ENERGY DEVELOPMENT
PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT (PEIS)
PUBLIC SCOPING MEETING

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TUESDAY, JUNE 24, 2008

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Phoenix, Arizona

Facilitator:
Karen Smith
Argonne National Laboratory

DOUG DAHLE
National Renewal Energy Lab. (NREL)

BRAD RING
Department of Energy

LINDA RESSEGUE
Bureau of Land Management

JOANIE LOSACO
Bureau of Land Management

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MS. SMITH: I want to welcome you to the 6th public scoping meeting for DOE and BLM's solar energy development programmatic EIS. And this is a great turnout. Thank you very much for coming.

We are going to have a series of presentations for you this evening and we'll have a brief question and answer period. And then we'll try to get quickly as possible to the part where you guys get to come up and make your comments.

So I'd like to introduce the first person to speak this evening is Joanie Losaco. She's with BLM with the Arizona State office and she's the Deputy State Director for public affairs. And here's your microphone.

MS. LOSACO: As Karen said I'm the Deputy State Director for communications for BLM in Arizona and I have the privilege of welcoming this full house tonight to BLM Arizona.

This is the 6th of, I believe, 11 of these type meetings that are going on across the West. And we're very glad that you could come and I'd like to thank all of the folks from Department of Energy and Bureau of Land Management.

I was here early and I know how much work they put into setting this up. They've done a fantastic job.

So, I've been asked to present a welcome on behalf of BLM so let me read that to you now. You almost didn't get to hear this because I thought I lost my glasses.

As part of our ongoing efforts to increase domestic energy production and ensure greater energy security, the Department of Energy and the Bureau of Land Management have initiated a joint solar energy development programmatic environmental impact statement.

Our agencies believe that preparing a programmatic EIS is a critical step in evaluating the extent to which public lands

with high solar energy potential may be able to help meet the nation's energy for renewable energy -- the nation's need for renewable energy, excuse me.

The BLM already has 130 applications in the pipeline for solar rights of way and the energy potential of these sites alone is enormous. 70 billion watts of electricity or enough to power 20 million average American homes on a sustained basis.

The joint programmatic environmental impact statement that will be overseen by the Department of Energy's Argonne National Laboratory will assess the environment, social and economic impact associated with solar energy development on BLM managed public lands in six Western States; Arizona, California, Colorado, Nevada, New Mexico and Utah.

So, with that I will turn it back to Karen and thank you very much, we appreciate your interest and we hope that you

will continue to be involved in this process. Thank you.

MS. SMITH: Thank you, Joanie. The next individual speaking is Brad Ring. He's with the US Department of Energy in the Golden Field Office and he's a project manager there. He'll be talking about DOE's interest with respect to this EIS.

MR. RING: Thank you very much for coming today. It really is a pleasure to see everyone here and you -- everyone taking part in this process.

I just have a short overview of the DOE -- Department of Energy and the solar program and how it relates to this programmatic environmental impact statement.

The DOE goals really are to add energy supply from diverse sources and to make better use of renewable sources. And specifically we're here for the solar program.

If we do this with the renewable sources are solar, right away you have

improved quality of the environment and reduces the greenhouse gas emissions.

There's also another key point to this and that's national security. If we can -- through this diverse energy source supply of energy we can get a secure sustainable emission free domestic energy supply and that's important for our Country.

The solar program under the Department of Energy -- that is our mission. We're right in line with the Department of Energy. And this year in 2008 our budget was about 170 million. That has been a stepped increase in the last few years. It's broken down into two categories; Research and development of 152 million; Market transformation of 18 million.

The research and development then is further broken down into photo voltaic, research and development and then concentrating solar power. The photo voltaic is 126 million for this year. The

concentrating solar power has been -- is 26 million. Market transformation the 18 million. Over 2 million is for this programmatic environmental impact statement. The remainder goes to the solar American initiative which funds photo voltaic's, water heating, other activities that 25 solar American cities development of codes and standards, solar American showcase's training, solar decathlon. Those are transformation activities that are critical for solar power to take hold in this country.

The solar program within the Department of Energy, we break it into generally two different technologies. There is lots of sub technologies within those areas. When we break them into these two and one of them is photo voltaic which most people are aware of which converts the solar radiation directly into electricity.

The only problem with it at this point -- well there's been major breakthroughs

in development is that it's relatively high cost. The costs are coming down. We track this based on levelized cost of energy, where the cost of energy that's supplied to the residential or power markets.

Concentrating solar power is the other technology that we're looking at and it as it states it concentrates the solar energy into a fluid, either a salt, water or a gas and makes it into a conventional steam cycle generally. There are a few other applications that don't fit within that but that's a general technologies.

DOE why are we co-leading the preparation of this environmental impact statement? We really want to focus on utility scale and utility scale means bringing power to tens of thousands of homes. To do that requires intense solar radiation. And the 6 States in this programmatic EIS are the best sources of solar power.

Solar power as a minimum at this

point, give or take, the minimum amount requires about 5 acres for each megawatt. So you can see right away a 250 megawatt facility would require about 2 square miles. It would take quite a bit of land for that kind of power generation. And BLM fits right in with this where they manage 119 million acres of federal lands in these 6 State area.

What results do we expect? It's really the identification of land that is appropriate for solar deployment both from a technical standpoint and from an environmentally sound standpoint.

Establishing the policies that will apply to projects supported by the Department of Energy. Those best management practices that would come out of this. Those would include the identification of important sensitive or unique habitats in the vicinity of the projects and try to the extent feasible minimizing or mitigate the impacts to these habitats.

It doesn't take away from the fact that each specific project will have its own environmental analysis conducted that will be a complete type of analysis.

And the last thing that we're looking at is for better or more accurate models for predicting the potential for solar energy, development and also looking at the power provided, creation of jobs and the -- how to mitigate the climate change that's going on at this time.

Very short presentation but thank you again, everyone for coming.

MS. SMITH: Thank you. The next speaker is Linda Resseguie. She's with the BLM Washington DC office and she is BLM's manager for the solar PEIS.

MS. RESSEGUIE: I have to say of the meetings we've held so far this is the first one standing room only, so that's great.

The Bureau of Land Management is an agency within the Department of the Interior

that manages 258 million surface acres. And the map that Karen is showing you simply shows the distribution of BLM's lands across the Western United States.

And on volume if it's too loud, not loud enough, someone in the back will let me know I trust? Okay.

About 46 percent of BLM's surface acres, over 119 million acres are located in the 6 State study area for the solar energy programmatic PEIS. 12 million of those are in Arizona. And this is simply a zoom in of the 6 States study area.

The BLM's multiple use mission is to sustain the health and productivity of the public lands for the use and enjoyment of present and future generations. The bureau accomplishes this by managing such activities as outdoor recreation, livestock raising, mineral development and energy production, and by conserving natural, historical and cultural resources from the public lands.

Solar energy is one of many energy resources now being developed or being considered on federal lands. To ensure the best balance of uses and resource protections for America's public lands, the BLM undertakes extensive land use planning through a collaborative approach with local State tribal governments, the public and stakeholders.

The result is a set of land use plans that provides the framework to guide decisions for every action and approved use on our public lands. Many of BLM's existing land use plans however do not specifically address solar energy development.

There are two points to cover about BLM being involved in the PEIS. The first is executive order 13212 which directs federal agencies to expedite their actions as necessary to accelerate the completion of energy related projects. Also the energy policy act of 2005 sets a goal for BLM to approve 10,000 megawatts of non-hydro power

renewable energy on the public lands by 2015.

As I mentioned, BLM must manage the public lands for variety of resource uses including energy production. The federal energy mix managed by BLM already includes oil and gas, helium, coal, geothermal, wind and bio mass. And soon it will include utility scale solar.

BLM has previously estimated that as much as two thirds of the public lands that it manages may have high potential for solar power energy production.

Utility scale solar energy projects on public lands are authorized by BLM as rights of ways in accordance with the requirements of the federal land policy and management act of 1976.

All activities proposed on public lands including rights of ways must be consistent with the terms, conditions and decisions in an improved land use plan. Before BLM can approve a solar energy

development project, it must assess the direct, indirect, accumulative impacts of such development and must consider other resource values, sensitive areas and public concerns all completed through a NEPA process.

As Joanie mentioned we have already received more than 130 applications for utility scale solar mainly in Sothern California, Nevada but also in Arizona. And although this meeting is not about specific projects, you will have an opportunity to comment on specific projects as they are processed.

Solar applications which have already been filed with BLM will continue to be processed on a case by case basis through a site specific NEPA analysis.

These pending applications will move forward on a parallel process with the programmatic EIS. But new applications for solar energy development will be deferred or not accepted until completion of the

programmatic EIS.

What are BLM's programmatic goals? Under BLM current solar energy development policy, applications are filed by companies and are processed on a first come first serve basis. Again, each with its own site specific individual NEPA process.

BLM believes that by looking programmatically at issues associated with solar energy development, we will be able to develop a more comprehensive, consistent, and efficient program approach by which to address solar energy proposal's on public lands.

The programmatic EIS will identify public lands best suited to solar energy development. Mitigation strategies and best management practices to guide future solar energy development and possible additional transmission quarters on BLM lands needed to specifically facilitate solar energy development.

BLM believes that this programmatic

EIS will be key in advancing the understanding about the impacts of solar energy development and how best to deal with those impacts. And that the resulting decisions will better foster and support the nations need for environmentally sound solar energy development.

BLM expects to amend land use plans in the 6 State area to adopt the solar energy decisions made as a result of the programmatic EIS. These meetings are an important part of the BLM planning process as well as the NEPA process.

We include a proposed planning criteria in the federal register notice of May 29th and we are asking for your comments on those criteria during this scoping process. Thank you.

MS. SMITH: Thank you, Linda. The next speaker is Doug Dahle. He's with the National Renewable Energy Laboratory in Golden, Colorado and he's a senior program

manager there. Here you go Doug.

MR. DAHLE: Thank you.

MS. SMITH: NREL is assisting DUE and BLM in the preparation of the solar EIS. They bring all the expertise to define the solar resources and the technologies. They made the big posters in the back. And Doug's going to provide an overview of resources and technologies.

MR. DAHLE: Welcome. Thanks for coming out this evening to share your thoughts about what we're doing.

What I'm going to cover this evening is basically three basic topics.

I'm going to give you a brief introduction of the solar technologies that are being considered in this 6 State study area.

I'm going to show you basically the geographical information base solar resource that we use in modeling and identifying high potential areas within that 6 State area.

And then a couple comments about some of the federal policies. One in particular that has a huge impact on facilitating deployment.

This is sort of the collection of the -- it's hard to see but it's that big parabolic solar trough. We talked -- Brad talked about the idea that there was two basic technologies. Photo voltaics and concentrating solar power.

We would characterize there's two sort of categories within that and those that are dispatch-able, we'll talk about that a little bit more. Basically what that means is it actually can deliver energy after the sun has gone down through thermal storage.

In the upper left is a picture of the 150 megawatt Kramer Junction facility that was built in Mohave Desert. We consider that commercial technology today. They've been installed in the early 80's and have been running consistently since then. This is a

linear focus technology.

The lower right is a -- the second one from the bottom on the right is a fairly new technology developed in Australia and it's called Compact Linear Fresnel Lense Reflector. Instead of the parabolic trough where you have a parabola and tube in all the direct sun hits that tube and the entire thing rotates from East to West.

This actually has a technology where the tube that's being hit by sunlight is fixed and the mirrors which are flat and actually less expensive to build, rotate East to West and heat that fixed tube which is filled with water and creates high pressure steam. That's another linear focus.

The one in the middle, the third one from the left is called the power tower. If anybody's had the chance to drive I-40 near Daggett California, the power tower goes back to actually the late 70's and early 80's. This is an interesting technology. They

either -- what this has -- the situation here, this is a point focusing situation where they have hundreds of what are called heliostats. And it's basically a flat mirror, two axis and attracts the sun and focuses all its energy in the top of that tower in the receiver. Either heating steam directly or more recently the heat molten sol which allows again that thermal storage and we'll talk about that a little bit more.

The other point focusing solar technology is the one on the far right. It's called dish sterling engine. In this case it -- parabolic dish focuses all its energy in a point -- about a six inch diameter point. Heats hydrogen and runs a sterling engine. It's not your internal combustion but basically it's a piston type action four cylinder sterling engine and directly produces power. This is not one of those that actually you can store. It basically directs energy, the 25 kilowatt systems.

The next two I'll talk about is the second one from the left is called concentrating photo voltaic. And this is where they actually use lenses either refractive or reflective and basically taking that solar energy and kind of focusing it down into a very small area. And in fact what it creates is, believe it or not, the equivalent of 500 suns.

The benefit here is that you don't need as much photo voltaic material to generate the same amount of power. And the most expensive part of photo voltaic actually is the cells. Silicon cells -- silicone, things like that.

The last one we'll talk about is in the lower right and that's basically your conventional flat plate photo voltaic systems. Throughout all these we're talking about in terms of the study is basically utility scale systems in the 10 megawatt or larger. What we're not talking about is distributed PV or

solar systems.

In the case of these parabolic trough and the Linear Fresnel Lense, industry isn't even interested unless you're building a 50 or 100 megawatt plant in the -- so the distribute generation, the rooftop stuff is a great approach. But the bottom line we're focusing on utility scale development on public lands. Slide.

Dispatch-able power I talked about before, here's that large plant in Southern California and what we're hoping -- we're delighted to see that this particular plant actually uses gas -- it's a gas hybrid system. Basically when the sun goes down they're trying to meet the peak of Southern Californians and this delivers power to Southern Californians. And they run a gas turban to generate steam to hit that peak which is usually 7:30, 8 o'clock in Southern California and that's a huge thermal system.

The nice thing about it is some of

the R&D money that DOE's providing to NREL is focused a lot and it has been the last couple years on thermal storage. We have a huge boost in funding this year to expand the thermal storage to address the dispatch-able without using fossil fuels.

As I mentioned the central receiver, this -- one of the first ones that was ever built out in Daggett, had a huge benefit in terms of the fact that they use molten salt in this particular technology. And one of the record breaking events was back in the early 90's, they had several days of really intense sun and they were able to store this molten sol and they were able to generate 24 hours a day for about 5, 6 days until the clouds had come in for several days and they just could not generate enough power to keep up the storage.

But, the fact that it could deliver that kind of power over -- everybody thinks with solar, when the sun goes down it's gone.

Well that's not true in the dispatch-able systems. The thermal storage is the trick. Next slide.

Here's sort of a depiction of what -- the value of dispatch-able power. You're probably aware that the most expensive power in the summertime, I'm sure as all the public service has a similar thing where they have peak demand. Dollars per kilowatt is most expensive during the summertime, heavy air conditioning loads, things like that. And they typically -- this is sort of a depiction of typically the major utility where they do have this peak in the middle of the summer -- middle of the day but often the residential loads drive the overall daily system peak.

So you have something early in the morning and usually after the sun goes down. What the dispatch-able power by having thermal storage that's depicted by the green is it allows you to actually carry that power and deliver the high value, high quality resource

to the utility through past the day's sunlight.

The next area of concentrating solar power, this is the non dispatch-able technologies. This is the one I talked about earlier it's called the Dish Sterling. This is the one that focuses on a small area about a six inch diameter, heats up the hydrogen, runs a piston motor, directly produces power.

The other concentrating solar power is the concentrating PV. This is basically again, the similar dish it's actually 60 foot in diameter. Focuses on a small amount of solar cells, 500 cells. And they're basically not commercial at this point but a lot of pilot development, in fact our brother, sister labs and Sandia National lab that gets a lot of the R&D as well as NREL is working with these technologies with developers of these particular technologies to get them to a commercial scale. Next slide.

This slide, basically is just sort

of an expansion of that concentrating PV in the systems in their three different types, one refractive. Refractive which is at -- reflective if you will that concave parabolic focus on photo voltaic.

The other one that I showed in the very first slide was called refractive which is basically similar to you seeing a lens on a florescent tube. It's got the little diamonds. The idea there is to scatter light to reverse that. You take this refractive lens over the PV and focus the energy into a point on the PV cell. This is actually -- this particular technology, the refractive technology, there's about four of them that were built for a 5 megawatt PV system that Arizona Public Service operates and has been for the last 10 years.

The last is a reflective and optical rod. Very new technology, same situation--it creates this 500 sun affect on cells. The key thing here again is trying to

reduce the amount of solar cells necessary to generate a certain amount of power. Next slide.

The key is you saw Linda's map that showed all the BLM lands. This is the overlay. Actually a first step in a lot of our screening showing the solar resource.

And what we're talking about for this study is a term called 5 kilowatt hours per meter square per day. That's a measure of the solar insulation on any given surface.

What we do in the modeling that we work with Argon in the study also is we take a layer of transmission systems. And we take a layer of land exclusions. And we take a layer of land slope. A lot of these big systems like the parabolic trough or the Compact Linear Fresnel Reflector or not so much the power job. But basically they need very low slope lands so it is very little horizontal construction.

But that's the solar resource for

the BLM lands in this study. Next slide.

This is the flat plate systems tracking or fixed. The one on the left--we're excited, this is the United State's largest photo voltaic system every built at Nellis Air Force Base. And Nevada power is buying the power through a lot of incentives, believe it or not. Tax incentives, financial incentives from Nevada power, renewable energy certificates. A lot of under this - each of these States by the way in the 6 State region have what's called a renewable portfolio standard which says a certain amount of the investor owned utilities in that State must arrive percentage by sometime of renewable power.

In the case of this particular project, they had a solar set aside and got significant incentives. This thing actually produces power at 2 cents a kilowatt hour because of all the financial incentives. Normally it would be in the area of 10, 12

cents optimistically.

What this does is basically -- most solar systems, PV, are set at a tilt equal to the azimuth of where it's located in terms of its latitude.

These actually also track - they're a single access tracking so they stay at that azimuth level and then they track East to West to increase the power production. It's been operating now for about a year and a half very effectively.

Again we're talking about the large scale -- utility scale. I'm just going to show you one in Portugal, the previous record holder. And this is the flat plate that is fixed at a particular angle equal to azimuth. And interesting enough you notice here the vegetation is not having to be scrubbed clear, rolling hills, things like that so it actually works in that kind of environment. Next slide.

The solar resource here for photo

voltaic is called the global solar resource. What that is, is for photovoltaics they operate on not only the direct normal solar resource which is about 80 plus percent of sunlight. It also uses the diffuse sunlight which is scattered off of clouds, scattered off the atmosphere so it maximizes the amount of solar that's actually accepted by the photo voltaic cells. Next slide.

This is sort of getting into some of the federal policy now. One of the things that has had a huge impact on driving the development of solar in this Country is called the solar investment tax credit that was provided by the federal government. It was renewed in the energy policy act of 2005. It's now 30 percent of the investment -- the cost of this solar system can be basically at -- it's a tax credit not a tax write-off. It's a tax credit. Huge benefit.

The -- what I'm showing here is basically the levelized cost of energy which

is all the cost of operating over a 25 year life, 30 year life, the construction cost, the site preparation costs. All those costs go into -- bottom line is, what's the levelized cost of energy and what does this thing produce in terms of cents per kilowatt hour.

Typically without this investment tax credit we're seeing today the best technology even though the steel prices are going up and driving up the actual installation cost. Something in the area of 15, 16, 17 cents without the investment tax credit.

The systems that have been built recently using that investment tax credit are now in the 12, 13, maybe high end 14 cent range which is very competitive with utility scale power today from whatever source. I don't know what you pay here in Arizona but I know in Southern California 13 cents is basically what they pay industrial, commercial and residential. So it's a huge impact in

terms of facilitating solar development. Next slide.

One of the models that we'll be using as part as the study is called the ReEDS model. And what it is it's a very sophisticated linear model that was developed by NREL. Hundreds of variables and it looks at, if you will, 350 different discreet regions based on the utility system, the transmission systems, regional transmission, operators, independent system operators, all these -- the ways power is distributed throughout the country. And basically looking at what's there now. Fossil, coal, gas, oil, nuclear, it's basically trying to see where can we -- based on the citing work that we're going to do. It uses that as an input saying how much more solar power can you actually get into the grid considering the existing systems that are out there.

This shows basically to that affect that we talked about the investment tax

credit. In the 20 year study period what we were projecting with this model, we've run it numerous times, is something on the area of 6 gigawatts of power. That's 6,000 megawatts. That's not anything consequential. But going to the next slide with the investment tax credit we're looking at more like 40 gigawatts based on the economic feasibility of solar with that investment tax credit.

Unfortunately it expires at the end of this calendar year and we are hopeful that Congress will see the light and make that happen. Because it has a huge impact with all these 130 applications, I don't think they're going to move very far-- if that expires I don't think you're going to see a lot of development. And that's all I have. Thanks.

MS. SMITH: Thank you Doug. I don't know if everybody knows but the fans did come on. It's getting better down here so we have a whole slew of seats in the front row and it's not as awful as it was a few minutes

ago. It's getting less awful every second.

Okay. So now you've heard from DOE and BLM regarding their perspectives on why they're preparing the EIS, their objectives. And you've heard from NREL overview of the solar energy resources in the 6 State study area. And the technologies that are going to be considered in the scope of the EIS and those are technologies considered to be commercially viable over the 20 year horizon that's being evaluated in the EIS.

And now I'm going to quickly go through some slides just to make sure everybody has a common understanding of the process that the agencies are embarking upon and are inviting you to participate in. So we're just going to cover a couple of basics on the National Environmental Policy Act. NEPA.

So first of all we're talking about preparing an environmental impact statement. Just so everybody is on the same page, an EIS

is a document that the agencies prepare to evaluate the potential environmental and social economic impacts of some proposed action. And the document first describes what the proposed action is and it assesses the purpose -- describes the purpose and need for the proposed action. It then assesses the potential, environmental impacts, socio-economic impacts, cultural impacts of the proposed action and then ways that those impacts might be mitigated.

It also has to evaluate reasonable alternatives to the proposed action and the impacts of those alternatives. It has to look at short and long term impacts, cumulative impacts, commitment of resources that might be incurred by the action.

And then importantly it's supposed to describe the public concerns associated with the proposed action and how those concerns were incorporated into the analysis.

Why is this EIS being prepared?

Well NEPA requires that federal agencies prepare an EIS when they propose to undertake a major action that could significantly impact the human environment.

And both agencies have determined that their proposal to develop these very broad programs that are going to govern their decisions over the next 20 years for solar energy development in a 6 State study area. Those constitute major actions so they determine they needed to prepare an EIS.

And we're talking about this and we refer to it as a programmatic EIS and that is distinct from a regular EIS. A regular EIS is one that would be prepared when you have a very specific action and a very specific location.

You know all the components of the project and you have a very clear understanding of the activity that you're assessing. And that's not the case here. Instead the agencies are actually looking to

develop broad programs. They're going to use the NEPA process to understand and define the elements of the program. They're not going to look at individual sites. They're not looking at individual projects. Instead they're going to take a higher level look at what are the types of impacts that generally can be incurred by these technologies.

And then similarly what are the--in general terms--the ways those impacts can be mitigated. So it's just clear, everyone's going, this is not looking at individual projects or sites but rather the establishment of a program.

What is scoping? Well scoping is the first opportunity in a NEPA process for you the public to become engaged with the agencies. And this is the point where the agencies are trying to collect information to help define what their studies going to consider. And in the kinds of things here, that's what the agencies are seeking input on.

So they'd like your input on their proposed action which will describe alternatives that should be considered, the significant issues that need to be analyzed in terms of potential impacts or resources, key resources in the study area.

They want your information on possible mitigation measures that could be applicable. As well as if you're aware of data -- possess data that will be relevant to the analysis they'd love to have that shared with them so they can incorporate it into their studies.

And then finally they're very interested in understanding who their stake holders are. Who is interested in this activity in this study area and what are their concerns.

Now we talked a lot about the proposed action and alternatives so I'll give you a thumbnail sketch of these. And this information comes right out of the notice of

intent that was published on May 29th kicking off this EIS.

NEPA requires that agencies evaluate the option of taking no action at all. That's called the no action alternative and this document would assess no action. But to maybe best understand what no action is let's talk about what the proposed action is and as we've said, both agencies are proposing to develop their own agency specific programs that are going to guide their decisions for the next 20 years with respect to solar energy development.

And these programs are going to include policies and mitigation strategies that are related to solar energy development in the 6 State Study Area. In the case of DOE this means that this program they would design would be relevant and would apply to projects that are going to be funded by DOE in the future. And these could be projects on BLM administered lands as well as DOE funded

projects on other federal lands, State lands, private lands, even tribal lands.

Conversely BLM's program that they're developing is going to apply to the decisions BLM will make about projects on BLM administered lands specifically. And in the case of BLM they're proposing to amend the land use plans in the 6 State study area to adopt this new program.

So backing up then, no action. That's the proposed action. So then backing up no action the agencies will not undertake steps to develop these comprehensive programs that will apply uniformly across the study area and rather will continue to evaluate solar energy projects the way they do today on a case by case basis.

Now at this time BLM has identified a third alternative that they're going to evaluate. Right now DOE has not identified a third alternative. BLM's third alternative has been called the limited development

alternative. And under this BLM would contemplate solar energy development projects but they would be limited to those projects for which there's currently an approved application that BLM determines have complete plans of development.

So that's a much smaller a level of solar energy development on BLM administered lands. Far less development then would occur under either the proposed action or the no action alternative.

Okay. So you're going to have multiple opportunities through the course of the EIS to be involved. The first opportunity is scoping. It began on May 29th and is going to extend through July 15th.

And then we're anticipating releasing a draft EIS for your review and comment in the Spring of 2009 and then a year later, a final EIS, Spring of 2010.

Want you to know about public information center that we've developed. It's

on the internet, there's the URL for it. And if you haven't had a look at the site I encourage you to go. There's a lot of good information about this particular EIS. About solar energy resources and technologies. And we're going to -- we also post EIS related documents. The NOI is up there. The slides you're seeing tonight. The posters NREL has created. All those things are available on the website. And we'll keep adding documents as the project progresses.

Other project related information announcements and notification or news about where meetings are being held, a schedule is maintained up there. And importantly for this phase there's an online comment form where you can submit your scoping comments. I'll tell you about that a little bit more.

And then if you want to sign up for an email notification list then you'll get automated emails that give you updates on the project, tell you about meetings, tell you

when documents become available.

If you've registered online for the meeting or if you gave us your email address when you signed in tonight, we're going to automatically enroll you in that email list unless you tell us you would rather not be.

Okay. So at this point we're going to take a quick break. About five minutes to do some questions and answers. And the intent of this is just to -- if you have any questions about what you've heard, do you want clarification on the things that the folks from the agencies have told you. Here's an opportunity, we'll spend a little bit of time on that. We're not going to get into comments. So -- that periods coming up later but rather just questions for clarification and the agencies will answer. And you guys need to turn that one on.

Does anybody have a question that they'd like to ask? Okay.

Q: Good evening. A question I

have is why not also consider wind resources in geothermal since they have elements in common--specifically the need to transmit generated electricity to the grid?

MS. RESSEGUIE: Thanks. We're on, right? Well BLM did complete a programmatic environmental impact statement for wind energy in 2005. So they have been through the process. And that -- if you're interested in that particular one, that website is still active and has all the information about the process that was gone through and the resulting decisions and the record of decision that implemented the outcome.

And we are currently doing one for geothermal as well. And that programmatic EIS I believe is in the draft stage. I think the draft EIS was just issued this week, last week. Very recently. And again, there is a website for that if you wanted to -- but each of these is being perused as its own programmatic environmental impact statement.

But we are -- we've completed wind, we're working on geothermal. We're starting solar.

MR. DAHLE: One thing I would add is, you see the website up here for solar? The website for the wind if you're interested is basically, substitute solar for wind. It's windeis.anl.com. It's worth taking a look at. Are you guys working on the geothermal as well?

MS. SMITH: No, but I think I might have a bookmark for it so if somebody's interested we could try to find that website tonight.

Any other questions?

Q: Yes. Regarding the specifically solar technologies, will this be limited to these technologies only? Or would a solar technology central plant size that doesn't fit specifically into any of these be allowed?

MR. DAHLE: Basically as Linda had identified, the answer is yes. If there is a

technology that can produce cost of power that's competitive and with regard to the investment tax credits, it's very general in terms of solar technology so that would apply. The application is then submitted to BLM once the study period is over, just as the right away applications have been done so far. I'm curious to see if there is another one out there. This is basically where we focused our interest and intention. But always looking for a new way to skin the cat kind of thing.

MS. SMITH: And I guess I would just add, the caveat is that if it's a technology that hasn't -- doesn't fit within the parameters of the technologies assessed in the EIS, new analysis will be required. But individual projects are going to get their own analyses. So, you know, we can't say they're all -- any technology that's solar will necessarily fit within the scope of what's been studied.

MS. RESSEGUIE: And Karen I also

wanted to say that, if there is a technology that is close to being commercial and the developer wants it to be included in this PEIS, we need to know about it right away. Otherwise as Karen said, it won't be considered and the PEIS won't apply to it particularly if any of the elements are different from the existing technologies that are being studied.

MS. SMITH: It's not that the EIS wouldn't be applicable all it's just that those elements that are completely different from anything that would be analyzed in the EIS would require an equal measure of analysis, so.

Q : In a general sense for the technologies that require water, what would the demand be? To the extent that they do.

MR. DAHLE: Yes. The parabolic trough systems which are the ones that are most common right now, of note there's a 64 megawatt plant that just came online in

Southern Nevada. Arizona Public Service has contracted for 250 megawatt plant, huge size.

The general use of water, and this is using a wet cooled system which is the convention so far. It's pretty substantial. For a hundred megawatt plant you're looking at 750 acre feet per year of water mostly lost through the evaporation of a wet cooled.

One of the things that is being developed right now and it's actually convention cooling towers that you see in any kind of power plant. Because basically these are steam turban power blocks in terms that it's thermal to electric, is dry cooling.

So now you're looking at a cooling tower. You saw that plant in Mohave. It's pretty low. I think the power block is 20 feet high. It's a very serious consideration obviously in this part of the Country in terms of water and we've heard that a lot in every one of these meetings. The dry cooling does exist. It has not been done in terms of

implementation and I think it's certainly something that we'll be looking at in the study as in a way to mitigate water use.

MS. SMITH: Joanie, you were so effective before in getting the fan turned on and it seems to have switched off. Can you try again with your magic?

Any other questions? All right.

Q: To what extent is the interconnector transmission piece of this in the programmatic?

MR. DAHLE: My sense of it -- it's really sort of a conventional issue. The interconnect is basically something that's applied with whoever's going to -- the interconnection is really key to the success of the project and the fact that somebody's going to buy this power. So a power purchase agreement. Invest your own utility, Arizona Public Service for example is going to buy the power from this large plant that would be starting construction I think in a year.

The interconnection agreement is like permitting of any kind of project. I don't think it's really necessarily meets the environmental socio-economic, maybe. But I just don't think it fits within this scope of the EIS.

MS. RESSEGUIE: And I'll disagree just a little bit. One of the things we are going to look at as we identify through the screens that Doug explained, the BLM lands with the best potential for solar energy development is whether or not we also need to identify transmission corridors so that, that -- so that those sites can be developed.

Of course identifying the corridors is not the same as building a transmission line but that is part of the PEIS process, is to see if additional quarters do need to be identified so that solar energy can be developed on the best lands.

MR. DAHLE: One other aspect about -- maybe this is a part of your question is --

the development of this is typically private. And one of the things -- one of the screens that we use when we worked with the industry on sort of the exclusions and things like that was. Obviously -- and I would guarantee it. A lot of the applications are fairly new transmission lines. The private developer is required to build that line to the high transmission which is a lot lower voltage.

So if it's the interconnection in terms of building, you know, distribution to the transmission that would be something that would be considered in terms of having to, if you will, right away to get firm that site. So that maybe -- maybe that's closer to your question. That would diffidently be considered.

MS. SMITH: Yes. Yes that would. Okay. One more?

Q: Is there any synergy between the wind PEIS in terms of results that came out it versus what you anticipate for -- Oh.

I'm sorry. Is there any synergy between the wind PEIS in terms of the analysis that was done that could be used to help further the solar study? In other words, you know, are you looking at the same areas? Are there some considerations that would help -- one of your first comments was that you wanted to accelerate solar energy projects.

I guess I have questions about a two year period to do a study and, you know, I'm wondering what happened with the wind PEIS, you know, are there any synergies from that that can help this process?

MS. RESSEGUIE: The wind PEIS -- I did look this up recently because it was a question that I had. Took about the same time; about 22 months. And while I don't expect that we're going to tier to the wind PEIS, we do have all that information and to the extent that it can be used and incorporated rather than reinvent it. We intend to do so.

MS. SMITH: I saw one more questions and I think we'll move on.

Q: This process of course applies to the federal lands but to what extent are the private lands already being used for this or is it the economics of it require federal public lands?

MS. SMITH: Can you repeat that a little?

Q: Yes. To what extent are private lands already being used for these activities? The focus of this of course is on federal lands but is it economic -- the sun shines everywhere and there's lots of private land in there. Is federal land vital to the success to this or can it operate and is it operating on private lands?

MS. RESSEGUIE: Okay. Doug says he can help.

MR. DAHLE: Actually one of the plans -- there was a power purchase agreement just signed by Pacific Gas Electric for this

compact linear Fresnel lens. It's 180 megawatt plan the entire system is being built on private lands.

To the best of my knowledge the 250 megawatt plant that's going to be built in Arizona is also on private lands. The benefit to obviously the private land owners, obviously some revenues whether it's a lease or whatever or the percentage of generation. But the -- and also the Mohave plants the ones that go back to the 80's were also on private lands.

So it actually has occurred and one of the things that -- if you look at it from the perspective of the industry I've got a choice between private land here and BLM where I have to go through the NEPA process. It's kind of a no brainer if you will.

But I think that the reality -- it's not like the private lands drying up but the BLM and public lands are so much more extensive in terms of area of land that's just

above all.

MS. SMITH: Okay. I think we're going to move on so we can get to your comments.

So--how to provide scoping comments. There's three different ways to provide comments. One is tonight at this scoping meeting. Another is to submit comments via the project website and then third way is to send us something by mail.

And if you're submitting written comments here's the direct link to the online comment form. You can navigate to it from the home page pretty easily.

And if you have supplemental information that you'd like to attach you can attach up to 10 megabytes worth of information to your online comment.

Alternatively we've given copies of this paper comment form. It doesn't give you a lot of room but if you are succinct then this will work for you. You can fill it out

and give it to us this evening or fold it up and mail it to the address on the back.

Or if you have larger package of materials you can mail them to that same address. It's shown here, the address is on the comment card, it's on the website, multiple places.

Tonight if you're going to speak we've got some ground rules. We're going to call speakers in the order that they signed up. And then after those who've registered to speak have had a chance we'll open the floor to anybody else so that anyone who wants to talk will have an opportunity.

And when you come up to make a comment we're going to have you stand at the podium. We'd like you to state your name and affiliation if you have one. And we're going to limit comments to three minutes. And if there's time at the end after everybody's had an opportunity to speak, you might be given -- you will be given an opportunity to continue

your comments if you couldn't finish them in three minutes.

We would like to reiterate. We want you to limit the scope of your comments to the programmatic EIS not to provide comments on individual projects or sites.

And then if you have written copy of what you're providing tonight in comments, you want to hand that off. You can provide anything to people with a nametag.

All the proceedings tonight at the meeting are being captured by a court reporter and transcripts are going to be posted on the website at some point after the last scoping meeting. So all of this material is being recorded in that way.

Okay. So I have to do a few housekeeping things. We've got a nifty method for keeping time and I screwed it up last night so hopefully I won't tonight.

You have three minutes and at the end of two and a half minutes I'll flash the

yellow card from over here; that tells you, you have 30 seconds.

And then I'll show you the red card when you've hit your three minute limit. And last night I got those transposed at one point so we had to give the guy extra time. So if I screw up with the cards you get a bonus, I repay you. And I have a little stopwatch to keep everybody on track including myself.

And because we're having trouble with the temperature in this room usually I leave this projected but if people don't object. If you've had a chance to capture this contact information -- I'm going to turn this heat thing off. Okay. All right. Shut that down.

All right. The first person who registered to speak is Will White. Is Will White here? I'm sorry, I thought that was Will White getting up. That was somebody going elsewhere.

Okay. No Will White? All right.

The next speaker is Lane Garrett.

MR. GARRETT: Thank you. Lane Garrett with ETA engineering. I'm also representing quite a few different solar organizations and the industry here in Arizona.

We really don't like a delay of a couple months. This is, I mean -- a couple years. But on the other hand when we look at the real problems in Arizona, it's really transmission, transmission and transmission. As a State we're pretty well, pardon the word, constipated. And there's not a lot of available land for transmission that we have the rights.

So I would like to see the two years a lot of emphasis on where transmission lines can go and should go and work with corporation commission and other people who can make that happen.

Right now, yes. Private lands but I'd like to mention something else. Private

land is going to be a thousand -- couple thousand bucks an acre for a power plant. BLM land you're talking equivalent to grazing rights or maybe two or three times higher.

So you do have the advantage on BLM land that your cost per acre is less and that can be a couple tenths of a cent per kilowatt hour. So there's a lot of reasons for using BLM.

Then I would like to just comment on the ecology effects of using photovoltaics and trackers. Number 1 the drop line you get higher growth of grass. The rabbits love it, the rabbits flourish. Animals we have seen that shade themselves from the sun under the modules and the trackers.

Though if there's any affect on wildlife of anything that actually helps, for example I have a tracker on my side yard, we have a birds nest in it every year. They love it. Thank you.

MS. SMITH: Thank you. The next

individual signed up to speak is Joe McGuirk.

MR. MCGUIRK: I'm Joe McGuirk. I'm from Scottsdale Arizona. I consult to investors in solar energy plants and I think one of the questions I ask is what is the surety about solar projects moving ahead? I think there's a recognition of the asset that the BLM land represents and I think it's important to recognize that there are a number of fledgling new companies trying to develop technologies.

And that they are dependent on some assurance about support to do that. I think they look to the federal government in a sense and try to gain some sense of optimism about what -- how the federal government is going to help them. I think this is one activity that can do that.

They're very disappointed about this hiatus on consideration of individual projects during this two year study. And I think anything that can be done to work up a

contingency plan that accelerates the PEIS and reaches these conclusions. I think one of the goals of this group as was stated earlier tonight is to accelerate these projects.

And, so I would just urge this group to--in their study to look for ways to accelerate their study and to come up with some results that are going to help these entities that are really going to make solar energy work. And I thank you for having this meeting now. Thank you.

MS. SMITH: Thank you. The next individual signed up is Jim Pickles.

MR. PICKLES: Is that okay for Sound? Okay. Good evening. My name is Jim Pickles. I represent Ausra which is a large scale thermal energy company based in Palo Alto California with a regional office here in Phoenix.

Ausra already has a contract with Pacific Gas and Electric Company to build a 180 megawatt project in Central California

which will provide electricity for approximately 120,000 homes.

While this project will be located on private land, we are currently looking to build projects on public land in California, Arizona and throughout the Southwest.

Thank you for holding this meeting and for giving us an opportunity to provide comments.

Without even considering the problem of existing electricity generation we need to move as fast as possible to be able to satisfy electricity demand growth in an environmentally responsible fashion. SRP and APS for instance are both looking to add more than 250 megawatts of capacity per year. We are in a race in which the finish line is moving away from us so time is of the essence.

And without a streamline process to facilitate solar development with the resources to implement it, more coal or natural gas power plant will have to be built

to meet load growth.

While we applaud BLM and DOE for their leadership and helping to promote the development of solar energy on public lands, there are several aspects of the notice of intent that require a vision if the programmatic EIS is going to be a useful document.

First it is inappropriate and unnecessary to freeze all new right of way applications during the preparation of the programmatic EIS. The large scale solar thermal industry is just getting started in the United States.

Today there are only two trough projects online. 350 megawatts in Southern California and 64 megawatts in Nevada. Freezing new applications will significantly stunt the growth of the industry potentially killing the industry before it effectively gets off the ground. And this is an industry that can provide dramatic economic and

developmental benefits to the region. Quite apart from the obvious environmental issues.

Although about 130 applications have been filed on BLM land in the six States covered by the programmatic EIS. Many of these applications will not result in completed solar projects. Environmental review is just one step in the lengthy process for developing large scale solar projects. And projects can be delayed or cancelled for any number of reasons. So while we recognize that BLM is short on resources, a full freeze on new right of way applications is simply not the answer.

Second we would ask the programmatic EIS consider solar energy and transmission development on federal lands other than those managed by the BLM. Many lands have been administered by other agencies and there are many options for using these lands.

It would also be useful if the

process could Identify ways to simplify and expedite transmission citing across federal lands.

Thirdly, please do not reduce the amount of public land available for solar development.

And finally the programmatic EIS needs to provide clear criteria for efficiently processing future project specific environmental reviews.

So in conclusion we sincerely appreciate BLM and DOE's efforts and look forward to working with the agencies as they move forward. Thank you.

MS. SMITH: I'm going to apologize in advance for not being able to pronounce his last name. The next speaker is Eric -- Eric. Sorry Eric. I can't wait. I can just come back to you there. I'm sorry to make you -- all right. You want to go back? Okay.

MR. GORSEGNER: The crutches are just a cheap ploy to engender a query of

empathy for my remarks.

Thank you. I didn't come with any prepared remarks.

MS. SMITH: Please state your name.

MR. GORSEGNER: I'm sorry. My name's Eric Gorsegner I'm with the Sonoran Institute in the Phoenix office. And like I said I didn't come with prepared remarks but checked the yes box because I wanted to be able to hear what was said.

And I do have some categories that -- some comments that fall into two categories.

One is that I've not visited the website. But one of the difficulties in evaluating large scale infrastructure is always the challenge of looking at it holistically. There are 130 permits. I think for stakeholders to evaluate this, it would be very helpful to be able to go onto the website and see the spatial distribution of these. Especially in light of the fact that you said

the bulk of the 130 are in a three State area.

This includes not just the site specific but also the potential areas that are going to be needed for transmission. Because as you mentioned, the BLM is a multi-missioned agency. Conservation is a part of it as well as this type of technology.

The second -- and you mentioned keeping the remarks in a programmatic way. This is not site specific but it's regional specific. But I think it speaks to the program objectives.

In Western Maricopa County and that large crescent of land out West where there's a lot of contiguous BLM land. It also happens to be ground zero for a lot of the energy production in Arizona right now. With Palo Verde, a number of nuclear -- or natural gas plants and quite a bit of transmission that's existing.

So I think that area is going to be very critical in terms of interest from the

industry. It's also critical in terms of its conservation status right now. You've got a number of wilderness areas out there. I believe maybe eight that fall into that general area.

You've got an area that's at risk from expanding urban infrastructure there of an interface transportation networks off-road vehicles and all the things that go with high growth area.

And with that in mind I think just ensuring from the get go that the conservation of these lands are looked at on equal footing with the economic value of the energy production is very important. And that a very high threshold should be set for evaluation of lands that are not previously undisturbed and that are currently in a natural state. That's my comment.

MS. SMITH: Thank you. And the next speaker signed up is Sandy Bahr.

MS. BAHR: That one was easier to

pronounce right? Thank you. My name is Sandy Bahr. I represent the Sierra Club's Grand Canyon chapter which is the Arizona chapter and we have 14,000 members here in Arizona.

First of all I wanted to thank the BLM and DOE for having this public meeting, public hearing and for giving adequate notice and also for the format because I know a lot of agencies have gone to kind of this open house format and I felt like there was some good information provided and also appreciated the opportunities for questions and now the opportunity to comment.

The Sierra club is going to provide a detailed written comment so I just wanted to touch up on a couple of things.

First of all we have long supported clean renewable solar energy and for an even longer time supported protection of our public lands. In fact about 116 year history, in that area.

And we don't think that supporting

siting of solar means sacrificing our resources. We think that it's not an either/or but a both/and I think through this process we can get there.

Also wanted to say up front that we appreciate the BLM looking to identify a certain exclusion areas up front. I think that will make a siting a lot easier and identifying additional sensitive lands in this process is appropriate including a wildlife migration corridors, critical habitat and areas that are part of citizen proposed wilderness.

We encourage in the process to give preference to areas that are already environmentally impaired. Makes a lot of sense. Abandoned mine sites, transportation areas, you know, where there has been some kind of existing activity. Also wherever possible give preference to looking at existing roads instead of building new roads because obviously roads have significant

environmental impact.

And I wanted to agree with Linda about the transmission and that the need for looking at transmission as part of this. You could have the best site but, you know, with the transmission has to cut through an important wildlife refuge or wilderness area, you know, you could end up with a big fight over that.

And looking where there is existing transmission and existing transmission corridors I think is critical in giving a preference to those areas. And the private site that you talked about earlier that Avengoa proposal, that's exactly what they're doing. So -- thank you.

MS. SMITH: Thank you. That gets us through the list of folks who said they wanted to speak this evening. And, so we now can open the floor to individuals who've suddenly become motivated to speak by something they heard.

So, is there anybody else who would make a public comment?

UNIDENTIFIED SPEAKER: could you put that slide show up again briefly?

MS. SMITH: I don't know. I can try. While I'm trying -- let's see. If anybody else would like to come up. And if anybody who spoke and didn't get to complete their comment feel like they had more to say than the three minutes allowed?

Well I'll keep trying to bring the slide up but we can always just get you that information 1 on 1 if you come on up here.

UNIDENTIFIED SPEAKER: And save energy.

MS. SMITH: Yes. I've got to turn it on to shut it all down anyway but we'll get you that information.

And, well I guess that gets us through the meeting this evening and I know I speak for Brad and Linda, thank you so much for coming and sharing your comments with the

agencies and for making this evening a success.

Remember you can continue to comment through July 15th through the other mechanisms that I showed you online or by mailing something in.

Thank you very much.

(Proceedings Concluded.)