Thank you for your comment, Jeffrey Fontaine.

The comment tracking number that has been assigned to your comment is SEDDsupp20185.

Comment Date: January 28, 2012 01:17:57AM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20185

First Name: Jeffrey
Middle Initial:
Last Name: Fontaine
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Address: 304 S.Minnesota St.
Address 2:
Address 3:
City: Carson City
State: NV
Zip: 89703
Country: USA
Privacy Preference: Don't withhold name or address from public record
Attachment:

Comment Submitted:

The Nevada Association of Counties believes that Nevada's counties should have been given an opportunity to provide input on the selection of solar zones within their jurisdictions before they were listed in the draft PEIS. Early consultation would have ensured that the solar zones were compatible with county resource plans and maps.

Significant weight should be given to the comments provided by Nevada's counties in this regard.

Thank you for your comment, Almut Fleck.

The comment tracking number that has been assigned to your comment is SEDDsupp20186.

Comment Date: January 28, 2012 01:32:05AM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20186

First Name: Almut
Middle Initial: R
Last Name: Fleck
Organization:
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Address 2:
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City: Twentynine Palms
State: CA
Zip: 92277
Country: USA
Privacy Preference: Don't withhold name or address from public record
Attachment: Supplement Solar PEIS COMMENTS.doc

Comment Submitted:

Please extend the deadline for public comments. Don't put industry interests above the public good. We need more time to do solar right.
attachment below.
Thank you

Regarding the Supplement to the BLM Draft Programmatic Draft Environmental Impact Statement:

We must go solar, rooftop solar, directly distributed solar energy. As a country we have failed to plan for the future, many have denied the fact of global warming. Solar solutions have been around for decades but financially prohibitive for most, and so has global warming, dismissed as a conspiracy. Now there is an urgency and a rush to address the most serious challenge for survival. Global warming is finally real and the technological solution is fast-tracked –industrial sized solar zones and solar "fields."

While some significant changes have been made and are in the right direction, the Supplement Solar PEIS adds a huge number of "variance" lands for large-scale energy generation which is a choice not a federal mandate.

Public desert lands have been identified and sacrificed when we have empty space on homes, business, office buildings, and big government and corporate buildings. What we don't have is a long-term view of the effects on future generations. We want to save the planet and destroy ecosystems in the process. The philosophy of considering the consequences of our actions for 7 generations is no longer even contemplated, let alone applied in the Supplement solar PEIS.

"Our duty to the whole, including 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

We are so focused on eliminating carbons, as if that were the only problem we are facing. How are the stakeholders going to comment on the Supplement Solar PEIS in a meaningful way when most people I spoke with don't know about the specifics of the plan, are not aware of the opportunity for public comment, or simply don't find the time to read the lengthy report? The size of the project, the complexity of the issues, the unanswered questions, the concerns about health and safety, the effects on the environment, wildlife, the socio economic changes on the local and regional tourism economies of the gateway communities to Joshua Tree National Park need to be addressed openly and with full public participation. An explanation should be provided why rooftop solar is not considered although a superior alternative. I urge you to extend the deadline for comments.

Sincerely,

Almut R. Fleck
Twentynine Palms, CA 92277
760.367.2722

Thank you for your comment, Arthur Haubenstock.

The comment tracking number that has been assigned to your comment is SEDDsupp20187.

Comment Date: January 28, 2012 01:50:54AM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20187

First Name: Arthur
Middle Initial: L
Last Name: Haubenstock
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Address 2: Suite 2150
Address 3:
City: Oakland
State: CA
Zip: 94612
Country: USA
Privacy Preference: Don't withhold name or address from public record
Attachment: 2012-01-27 Comments on Solar SPEIS.brightsource.pdf

Comment Submitted:

Please see attachment for comments

BrightSource

January 27, 2012

VIA ELECTRONIC SUBMISSION

Solar Energy Draft PEIS
Argonne National Laboratory
9700 S. Cass Avenue, EVS/900
Argonne, IL 60439

Ms. Shannon Stewart
Bureau of Land Management
Washington Office
shannon_stewart@blm.gov

Ms. Jane Summerson
Department of Energy
Washington Office
jane.summerson@ee.doe.gov

Re: Comments of the BrightSource Energy, Inc. on the Supplement to the Draft PEIS for Solar Energy Development in Six Southwestern States

Dear Ms. Stewart and Ms. Summerson:

BrightSource Energy, Inc. ("BrightSource") is pleased to have this opportunity to submit these comments on the Supplement to the Draft Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States ("SDPEIS"). BrightSource provides these comments as a supplement to those being submitted today by a group of conservation, utility and solar developer stakeholders, which includes BrightSource (the "Joint Conservation & Solar Comments"), and to those being submitted by the Large-scale Solar Association and the Solar Energy Industry Association on behalf of the solar industry (the "Solar Industry Comments"), which BrightSource equally endorses. BrightSource strongly supports the development of a programmatic approach to solar energy project review and approval on public lands, subject to the comments provided in the Joint Comments and the Solar Industry Comments, and those provided in this letter.

I. Introduction

Based on our extensive involvement in the federal solar program, we strongly commend the Office of the Secretary of the Department of Interior and the Bureau of Land Management ("BLM") for the significant investment in time and resources they have made to find effective, efficient, cost-effective and environmentally sound ways to achieve the promise of the world-class solar energy development potential of the nation's public lands. We also commend the Department of Energy for its pivotal role in fostering solar energy development at this critical stage of the nascent industry's development, and for its work in the Solar PEIS process as well.

BrightSource Energy, Inc.
1999 Harrison Street
Suite 2150
Oakland, CA 94612

www.BrightSourceEnergy.com

BrightSource will continue to be actively involved in the Department of Interior's efforts to meet the Secretary's goals, as set forth in Secretarial Order 3285A1 (amended Feb. 22, 2010), the California Governor's Executive Order S-14-08 (dated Nov. 17, 2008), and the Memorandum of Understanding Between the State of California and the Department of the Interior on Renewable Energy (as amended Jan. 13, 2012). We are also determined to help realize Department of Energy's renewable energy initiatives, such as the Secretary of Energy's SunShot Initiative to bring solar energy costs to a competitive level with conventional energy. Lastly, BrightSource fully intends to significantly contribute to fulfilling the President's new commitments of 10,000 gigawatts of renewable energy from public lands by 2012, as announced in the State of the Union address on January 24, 2012.

We believe that the Solar Program envisioned by the SDPEIS will be an essential part the success of all of the national and state policies noted above, providing that it is implemented consistently with the recommendations provided in the Joint Conservation & Solar Comments, the Solar Industry Comments, and the additional comments we provide in this letter.

II. Background on BrightSource & its Solar Power Tower Technology

BrightSource is a leading solar thermal technology company that designs, develops and sells proprietary systems that produce reliable, clean energy in utility-scale electric power plants. Our systems use proprietary solar power tower technology to deliver cost-competitive, renewable electricity with characteristics highly valued by utilities, such as reliability and consistency.

BrightSource is also the developer of the Ivanpah Solar Electric Generating System ("ISEGS") on solar energy rights-of-way ("ROWs") on public lands in the California Desert, which will be the largest concentrated solar project in the United States when it is completed, capable of supplying renewable resource energy to 140,000 residences. Since obtaining its ROWs in October 2010, ISEGS has been under continuous construction and is currently well underway, providing over 1000 jobs in one of the nation's areas of highest unemployment. We are pleased to provide a vibrant and successful example of solar energy development on public land, and wish to thank BLM and the Departments of Interior and Energy for the tremendous support that made this success possible.

BrightSource also has several other pending applications before BLM for solar energy ROWs. As a result, BrightSource would be greatly affected by the solar energy policies being created through the Solar Energy PEIS process.

BrightSource's Solar Power Tower Technology: Function & Energy Benefits

Our proprietary solar thermal technology is engineered to produce predictable, reliable and clean energy at a competitive cost. Our solution is specifically designed to address the challenges of utility-scale renewable power generation.

BrightSource

Our power tower solar thermal technology generates power the same way as traditional power plants – by creating high temperature steam to turn a turbine. However, instead of using fossil fuels or nuclear power to create the steam, BrightSource uses the sun's energy. This high-temperature steam can be used in the production of electricity, integrated with steam from fossil fuels as a hybrid system or from thermal storage, and can also be used for solar-to-steam applications such as thermal Enhanced Oil Recovery ("EOR").

BrightSource's technology harvests solar energy through mirrors that track the sun's movements through the day, which are called "heliostats." The heliostats are strategically arranged around a central tower, and focus the sun's energy on the top of the tower. In the current system design, a 130 MW plant will utilize up to 60,000 heliostats. Each heliostat is precisely placed in the solar field using our proprietary optimization algorithms to maximize the plant's power generation, considering how sunlight will fall on the project site throughout the day and each season of the year. At the top of the central tower is a "solar receiver," which is a utility-scale boiler, designed to be heated from the outside using concentrated solar energy reflected onto the boiler by the heliostats. From the solar receiver, high-temperature, high-pressure steam is then piped to a conventional steam turbine generator, which in turn produces electricity. The electricity is delivered to utility customers through a connection to the transmission grid.

Electric power plants using our systems produce more predictable power output than that of highly intermittent renewable sources such as wind and photovoltaic ("PV") systems. As our technology converts solar energy into steam, rather than directly into electricity, the system temperature remains high enough to continue to generate electricity through short periods of intermittent cloud cover. Electric power plants using our systems are therefore less likely to experience sudden and unexpected power output fluctuations. In addition, we expect that electric power plants using our systems will be able to bridge prolonged reductions in solar power output by discharging energy from a thermal energy storage system or through combustion of small amounts of natural gas, referred to as hybridization. With electric power plants using our systems, utilities and grid operators will require less backup generation to maintain grid reliability than competing wind and PV energy sources.

BrightSource recently announced another innovation in our design for future projects, incorporating thermal energy storage in the form of molten salts to the solar power tower configuration — a combination we refer to as SolarPLUS™. The benefits of our SolarPLUS™ systems include:

- Increasing annual energy output from each plant by increasing the plant's capacity factor – the number of hours that a plant produces energy—and thus avoiding the construction of other generation plants to produce that energy

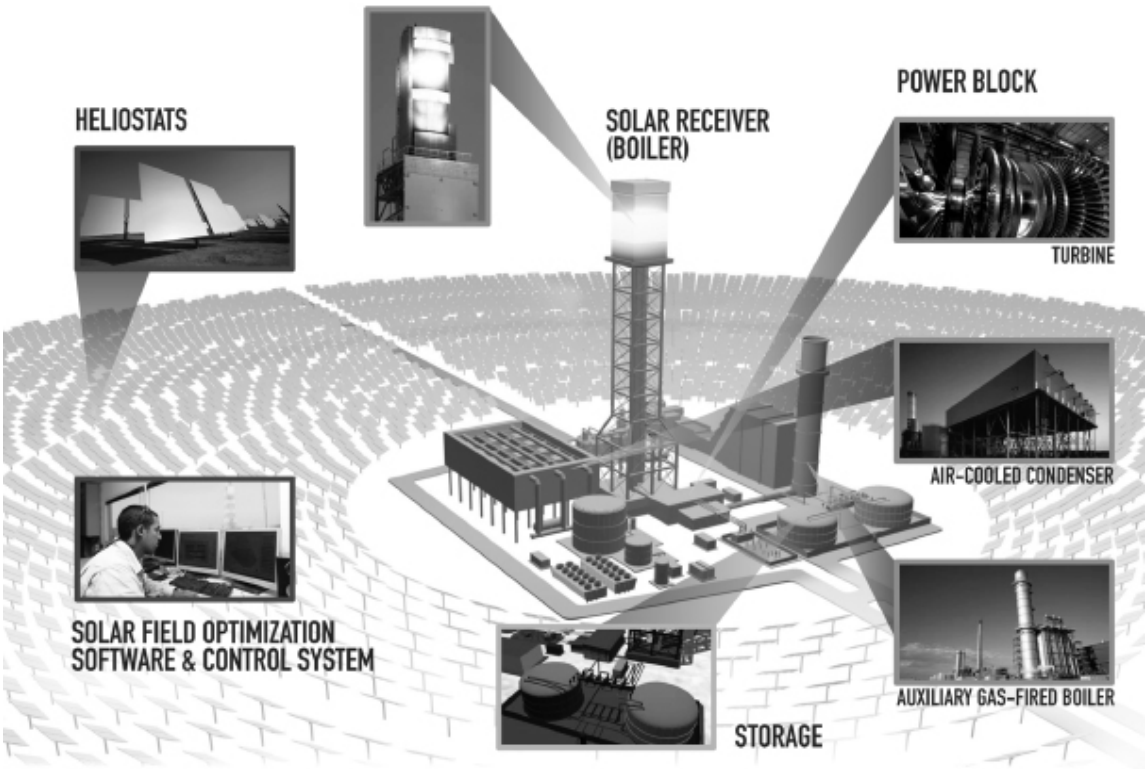
- Shifting electricity production to periods of highest demand, which is particularly important as the highest demand on the system moves later in the day (due in part to increased deployment of distributed solar power, which stops producing power when night falls)

- Avoiding the variability and integration issues that other intermittent renewable resources create for utilities and grid operators, thus reducing need for additional fossil fuel units for reliability "backup," which increase the overall emissions and costs of the energy system

- Supporting a reliable energy supply by providing "ancillary services" that are needed for grid stability

Our basic system design allows for integration with natural gas or other fuels, referred to as hybridization, which allows the plant's turbine to be driven by steam produced by solar heat, combustion, or both. Hybridization enables increased output and more reliable production of electricity, much like our SolarPLUS™ systems. Hybrid plants could be operationally very similar to conventional, dispatchable power plants, reducing emissions by using solar steam during hours when the sun is shining, while allowing continued power production at all other times—and making the most efficient use of the generation equipment. Hybrid plants would also allow use of efficient use of lands with much lower direct normal insolation ("DNI") than those powered by solar steam alone.

The diagram below shows the key components of a solar power tower plant that includes both solar thermal storage and an auxiliary natural gas-fired boiler.



BrightSource's Solar Power Tower Technology: Environmental Benefits

BrightSource's plants are more land-efficient than competing solar technologies. Our second generation plants at Hidden Hills and Rio Mesa further reduce our technology's footprint, by deploying an increased tower height that allows greater density of heliostat placement and a significantly smaller solar field. Compared to other utility-scale solar plants of similar capacity, such as PV farms or parabolic trough solar thermal plants, this advanced solar power tower configuration reduces land use by 33% or more.

Our projects utilize a low-impact design, leaving most natural contours and desert vegetation in place and preserving water flow patterns. As each heliostat is inserted directly into the ground on a pylon, with no concrete pads, our project sites can make efficient use of land with slopes of up to 10% or highly variable land surfaces, with minimal or no grading and very little soil disturbance. The individual placement of heliostats and our advanced algorithms for site optimization also allow our technology to avoid sensitive areas.

Our technology uses dry-cooling and closed-loop recycling, despite the additional cost, to reduce water usage to less than 10% of the water used by solar thermal plants with wet-cooling systems. This water-saving process is an important design element of our systems, since our projects are likely to be located in arid or desert locations

III. BrightSource Supports the Joint Conservation & Solar Comments and the Solar Industry Comments.

BrightSource, as a signatory to the Joint Conservation & Solar Comments, fully supports its recommendations to the Departments of Interior and Energy and to the BLM for the final Solar Programmatic Environmental Impact Statement ("Final PEIS") and Record of Decision ("ROD"). As a member of LSA and SEIA, BrightSource also fully supports the Solar Industry Comments. We are confident that if the Departments of Interior and Energy and the BLM follow the recommendations in those comments and those that we offer in this letter, the nation's Solar Energy Program will succeed in achieving its objectives and the nation's policy goals, including providing the nation with clean, sustainable energy to power a resurgent economy and greatly needed jobs, enhancing the permitting of solar energy projects, identifying environmentally-responsible places for developing solar energy projects, and ensuring the competitiveness of the nation's solar energy industry in the world market.

IV. BrightSource's Additional Comments on the SDPEIS

Brightsource offers the following recommendations in addition to those provided in the Joint Conservation & Solar Comments and the Solar Industry Comments.

BLM Should Revise the List of Pending Applications in Appendix A.

The SDPEIS states that pending applications will be subject to "continued processing under existing policies."[1] Pending applications are listed in Appendix A of the SDPEIS, but the Appendix does not include all the pending BrightSource applications. Bright Source requests that BLM add the following pending applications to Appendix A: [2]

- CACA-049421, Siberia, filed under Solar Partners V, LLC. Received by BLM 4-27-07. 13,920 acres.
- CACA-051967, Palo Verde II, aka Sonoran West, filed under BrightSource Energy. Received by BLM 5-12-09. 12,269 acres.
- NVN-090476, Pahrump Valley, aka Sandy Valley, filed under BrightSource Energy. Received by BLM 1-21-11. 15,190 acres.

[1] SDPEIS page 1-9 (Table 1.7-1).

[2] We note that, while these applications are not included on the Appendix A list provided in the SDPEIS, readers of the SDPEIS could find reference to the applications located in California during the comment period in the following way:

The Executive Summary of the SDPEIS directs readers to the Solar PEIS website:

> The BLM and DOE invite the public to comment on this Draft PEIS. The entire document is available on the project Web site (http://solareis.anl.gov) along with information on how to participate in the process, including how to provide comments and announcements regarding public meetings.

This website includes a page of links, which point viewers to additional information. By starting at the Solar EIS Links webpage, one can link to the California Desert District webpage and thus to a list that includes the five projects:

1. Begin at http://solareis.anl.gov/guide/links/index.cfm.
2. Click on the "BLM Solar Energy page"
3. Click on "Our Offices/Centers" along the left side of the page
4. Click on "California"
5. Click on "Field Offices" along the left side of the page
6. Click on "California Desert."

This will take the reader to http://www.blm.gov/ca/st/en/fo/cdd.html, which lists the projects in California mentioned above. Rather than requiring such a round-about reference to these applications, BrightSource requests their inclusion in Appendix A in the Final PEIS.

- CACA-053138, Rio Mesa Solar, filed under BrightSource Energy. Received by BLM 2-14-11. 3,054 acres.

- NVN-[# TBD], Sandy Valley III, filed under Sandy Valley Solar III, LLC. Received by BLM 10-21-11. 10,804 acres.

The Joint Conservation & Solar Comments, as well as the Solar Industry Comments, support treatment of these applications as Pending Applications.

In addition, BrightSource notes that two applications listed in Appendix A of the SDPEIS contain errors:

- NVN 083914 BRIGHT SOURCE ENGY SOLAR PTNR (Morman Mesa) July 25, 2007. Listed as 500 MW and 10,000 acres; it should read 1,200 MW and 24,000 acres.

- NVN 084631 BRIGHT SOURCE ENGY SOLAR PTNR January 28 , 2008. Listed as 1,200 MW and 2,000 acres; it should read 1,200 MW and 24,000 acres (originally identified as 45,000 acres).

BrightSource has communicated with BLM regarding the five applications identified above as having been omitted from the Pending Applications list in Appendix A, as well as regarding the two applications identified above as being included in the list with errors. BrightSource understands that these omissions and errors are expected to be corrected in an appendix to the Final PEIS.

Technical Criteria, such as Slope and Insolation, Should Not Establish Exclusion Areas.

The SDPEIS defines ROW exclusion areas as "areas which are not available for location of ROWs under any conditions." BrightSource believes the criteria used to identify exclusion areas should be limited to those elements that are clearly essential to preserving environmental values. Several of the exclusion criteria incorporate technical standards; this is inappropriate and unjustified, as these proposed limitations do not recognize current technological capabilities, nor the rapid innovation that is occurring in the solar energy industry. BrightSource supports the call by the Joint Conservation & Solar Comments for meaningful and significant pilot programs to explore development of lands with slopes between 5% and 10%, and of lands with lower insolation.

For example, BLM's proposed exclusion criteria of a 5% slope limit and minimum insolation requirement of 6.5 kWh/m2/day are based on the presumed capabilities of developers' technologies. These limitations are not valid. Technology is already being deployed by solar developers to make use of higher slope and lower insolation lands. As discussed above, BrightSource's current and future technologies are among those that are capable of making effective use of such lands, where it is environmentally appropriate to do so.

Exclusion of these higher slope and lower insolation lands may in fact induce sprawl, rather than reduce it, as areas near existing development and infrastructure would be placed off limits as a result of these arbitrary and outdated limitations, forcing development elsewhere. Exclusion of these lands can also be expected to increase development pressure on lands that are less desirable for development than some lands with higher slope and/or lower insolation. These results would be inconsistent with the intent of the Solar Energy Program, and could threaten its ultimate success and longevity.

Revising these technical limitations, such as through pilot programs, could be accomplished in the final SPEIS without requiring recirculation of another draft supplement. An agency is required to prepare a supplemental draft or final Environmental Impact Statement when "[t]he agency makes substantial changes in the proposed action that are relevant to environmental concerns. . . ."[3] Neither modification of the exclusion criteria from a 5% slope to a 10% slope, nor a reduction of the minimum insolation requirement of 6.5 kWh/m2/day, would constitute a "substantial change."

One factor in considering whether an agency has made a "substantial change" is whether the change is covered within the scope of alternatives already analyzed.[4] Here, the SDPEIS has already considered, within the existing range of alternatives, the programmatic environmental impacts of processing applications for lands without slope and insolation limitations. Under the no action alternative, projects can be developed under existing policies and law regardless of slope or insolation. The second and third alternatives that are considered further hold out the possibility of development on these lands by establishing a protocol for the creation of new SEZs that remains flexible in applying these criteria. Moreover, reducing or eliminating slope and insolation limitations would not result in more SEZs under these alternatives, but would only increase the amount of land available in variance areas. The impacts of solar energy development on lands within variance areas would be fully analyzed on a case by case basis. This is exactly what would occur under existing law.

Another factor regarding recirculation is whether the public has had a meaningful opportunity to comment on the issue. The public was put on notice that BLM is considering slope and insolation exclusions and that the exclusion criteria may be too restrictive to allow sufficient land for solar energy development.[5] Moreover, BLM chose the limitations based upon an assumption that such a standard would be "best suited with respect to technology limitations."[6] It is entirely foreseeable that the limitations might change as a result of public comments, including those from the solar energy industry on the correctness of BLM's assumption about technological limits, and the SPEIS itself notes that solar technologies can be expected to make effective use of lands with

[3] 40 C.F.R. § 1502.9(c)(1)(i)–(ii).

[4] Half Moon Bay Fishermans' Marketing Ass'n v. Carlucci, 857 F.2d 505, 508-509 (9th Cir. 1988).

[5] *See, e.g.*, SDPEIS, page 2-69.

[6] *Id.* at page 2-65.

greater slope and lower isolation.[7] BLM provided the public with sufficient information to permit "meaningful consideration" of an action under agency review.[8]

Height & Technology Limitations in SEZs Should be Dropped and Should be Determined on a Case by Case Basis.

The proposed height limitation of 10 feet for certain areas is excessive and unnecessary, as is any technology-based limitation. The presumption that taller technologies will necessarily have greater impacts on visual resources has no basis in fact, and is entirely location- and viewpoint-specific. BrightSource echoes the Joint Conservation & Solar Comments and the Solar Industry Comments in requesting that the height and technology limits in VRM Class II or III "consistent" mitigation[9] should be eliminated within SEZs, with aesthetic, cultural and environmental considerations applied only on a case-by-case basis in the project-specific NEPA process to mitigate actual visual impacts created by project height.

As a matter of principle and to ensure appropriately justified conclusions in the Final PEIS, BrightSource objects strenuously to any limitations based on technology types, rather than on the impacts of specific projects. Within classes of technologies, and depending on location-specific characteristics, any impacts of significance to the Solar Energy Program objectives can vary widely, including impacts on flora and fauna, water use and stormwater flow, land use efficiency, interference with aircraft or defense operations, and visual impacts. Limitations or mitigation measures, such as the Draft Solar PEIS mitigation recommendations for the De Tilla Gulch, Fourmile East, and Gillespie proposed Solar Energy Zones to prohibit solar power towers,[10] would unduly discriminate on the basis of technology rather than on actual impacts and have no proper place in the Final Solar PEIS.

Review of Pending Applications and Designation of Additional Solar Energy Zones.

The SDPEIS' proposed consideration of pending applications under existing rules and policies, rather than under those rules and policies that are adopted in the Final PEIS and ROD, is fully appropriate to ensure the regulatory stability needed for a new industry important to achieving the nation's policy objectives.[11] At the same time, many of the pending applications are not likely to ultimately result in viable projects that will serve the goals of the BLM and the Departments of

[7] SDPEIS, Appendix D, page D-3.

[8] *See Half Moon Bay Fishermans' Marketing Ass'n*, 857 F.2d at 508-09.

[9] SDPEIS pages C-58 and C-343, Section C.7.3 and Draft Table A.2.2.

[10] *See* SDPEIS, Appendix C, page C-343.

[11] Please note the Solar Industry Comments with respect to statements in the SDPEIS that are inconsistent with this treatment and suggest application of exclusion criteria to pending applications, which should be corrected in the Final PEIS.

Interior and Energy. The BLM should apply existing Instruction Memoranda to these pending applications, to ensure that it focuses its resources on those projects most likely to succeed, and to ensure that the land it exercises stewardship over is used appropriately and not held under application unnecessarily.

BrightSource also firmly believes that the ultimate success of the Solar Energy Program envisioned by the SDPEIS is dependent on the designation of sufficient Solar Energy Zones to support solar energy development, with access to transmission that will be available in time to serve the expected solar generation. It is incumbent on the BLM, and on all stakeholders, including the relevant transmission planning entities, to work together to identify additional, viable Solar Energy Zones promptly, and for decisions to be made on designating the first of these additional zones in 2013. Although variances will remain appropriate for areas too small to be considered for zones but desirable for environmentally-responsible development, the need for variances will be significantly reduced once sufficient zones have been established and shown to be successful.

V. Conclusion

BrightSource again appreciates the opportunity to provide these comments on the SDPEIS. We look forward to continuing to work with BLM and with all other stakeholders to advance environmentally-responsible solar energy development on public lands, and to achieving the renewable energy goals of the BLM, the Departments of Interior and Energy, and of the nation.

Sincerely,

Arthur L. Haubenstock
Vice President, Regulatory Affairs

Thank you for your comment, Christine Canaly.

The comment tracking number that has been assigned to your comment is SEDDsupp20188.

Comment Date: January 28, 2012 01:52:32AM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20188

First Name: Christine
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City: Alamosa
State: CO
Zip: 81101
Country: USA
Privacy Preference: Don't withhold name or address from public record
Attachment: 1.27.12.Comment.SupplementtoDraft.PEIS.CO.SolarStudyAreas.pdf

Comment Submitted:

My comments and support material are attached.

Friday, January 27, 2012
Delivered via electronic comment mail and hard copy U.S. post

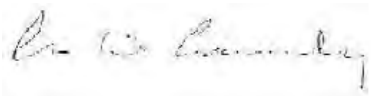
Supplement to the Draft Solar Energy Programmatic EIS
Argonne National Laboratory
9700 S. Cass Avenue – EVS/240
Argonne, IL 60439
http://solareis.anl.gov

Re: Comments to the Supplement of the Draft Solar Energy Programmatic Environmental Impact Statement, (DPEIS) specifically, 4 study areas selected for Colorado in the San Luis Valley

San Luis Valley Ecosystem Council (SLVEC) The mission of SLVEC is to protect and restore—through research, education, and advocacy—the biological diversity, ecosystems, and natural resources of the Upper Rio Grande bioregion, balancing ecological values and human needs. SLVEC works as the only local public lands advocacy organization that is concerned about protecting and restoring intact ecosystems and wildlife corridors, from the mountain peaks to the rivers along the valley floor, and into New Mexico.

Thank you for considering these supplemental draft comments and for your commitment to prioritize and bring the possibility of responsible renewable energy development to our nation's infrastructure. We look forward to a continual interchange of ideas and information throughout this process.

Sincerely,



Christine Canaly, Director, San Luis Valley Ecosystem Council www.slvec.org

There are 4 study areas within the San Luis Valley, representing all of Colorado totaling 16,308 acres.

1. DeTilla Gulch- North of Town of Saguache, between Hwy 285 and Hwy 17 in Saguache County (1,522 acres)

2. Four mile East-NW corner of Hwy 150 and 160 intersection, in Alamosa County (3,882 acres)

3. Los Mogotes East- West of Town of Romeo & Hwy 285 in Conejos County (5,918 acres)

4. Antonito Southeast- East of San Antonio Mountain in Conejos County (9,712 acres).

We appreciate the additional supplemental effort that provided further NEPA analysis; however, we also continue to see concerns that we would like to reiterate at this time.

- We want to support a Solar Program but have serious concerns regarding the proposed scale and implementation here as it relates to our existing transmission/grid infrastructure.
- We are concerned about the presumption of large-utility scale solar energy development which we see as a poor fit on public lands
- Please review our attached SLVEC position paper.
- Local jobs and revenue need to be properly phased and allow adaptive management over the 10-20 year planning window.
- Include a solar-energy-driven ecosystem conservation plan that offers a holistic guide to solar development including mitigation strategies and priorities.

Table of Contents

16) Public Health **-Page 18**

1) Adverse/Cumulative Impacts C.3.1.1

The San Luis Valley Ecosystem Council (SLVEC) appreciates the effort put into developing adverse impacts in the supplemental draft PEIS. This has been very helpful in providing reasonable guidance in determining what the future landscape might look like if utility scale projects are approved on public lands.

Additional Cumulative Impacts Assessment still needed

C.3.1.5.16 Cumulative Impact Considerations -None.

– SLVEC believes that a thorough cumulative analysis of SEZ development in the San Luis Valley would reveal that large-utility scale solar power development, with –big footprints" modeled after traditional centralized utility models based upon fossil fuels, would have enormous cumulative impacts upon the San Luis Valley. A thorough cumulative impact assessment should lead to reasonable mitigations to protect our communities and the environment while paving the way for future streamlined solar efforts. Indeed, the San Luis Valley is ready for more solar development, but we are cautious and want solar done for community enhancement.

> **Recommendation 1-1:** The Supplemental DPEIS should recognize the unique Colorado situation of having all four proposed SEZs, in addition to significant –Zones Plus" lands, located in the Upper Rio Grande watershed. This situation focuses and amplifies likely cumulative impacts of the Solar Development Program upon all other actions and resources in the valley, and calls for a more thorough analysis, especially since two of the four SEZ's are located within 3 miles of an existing transmission line.
>
> **Recommendation 1-2:** The Supplemental DPEIS should recognize the likelihood of our community generating significant solar power on private and municipal lands, with SLVEC stated goals of maximum of 650mW to export over 10-20 years as well finding solutions to the redundancy and reliability issue which is of ongoing concern to communities within the SLV.
>
> **Recommendation 1-3:** The Supplemental DPEIS cumulative impact assessment should guide a solar-energy-driven ecosystem conservation plan for the San Luis Valley. Such a conservation plan that would including ecological and agricultural planning and set the stage for future site-specific NEPA analysis, and outline general mitigation strategies based upon recent guidance (CEQ Guidance on Mitigation and Monitoring dated 16Jan11). BLM+DOE would find many willing partners on this effort and the SLVEC would be pleased to facilitate.

2) 1.3 Solar Program Supplemental DPEIS Purpose and Need

The objectives of BLM's proposed Solar Energy Program remain unchanged and include the following:
• Facilitating near-term utility-scale solar energy development on public lands;
• Minimizing potential negative environmental, social, and economic impacts;
• Providing flexibility to consider a variety of solar energy projects (location, facility size, technology, and so forth);
• Optimizing existing transmission infrastructure and corridors; and
• Standardizing and streamlining the authorization process for utility-scale solar energy development on BLM-administered lands.

We continue to state that more small-utility scale solar development would be embraced in the San Luis Valley on both on Federal and non-Federal lands, but only with smaller footprint projects, installed step-by-step under a coordinated adaptive management scenario with community DG and other solar efforts. Multiplied many times over, such a cautious, phased small-utility scale effort could achieve great power goals while reducing cumulative environmental impacts.

SLVEC still maintains the following concerns:

- Large-utility scale concentrated (big footprint) energy development will fundamentally change the energy future of the San Luis Valley, not necessarily for the good.
- Government-sponsored big-footprint energy development gives an unfair competitive advantage to large utilities with imperialistic business models and guaranteed profit margins, and no reason to respect local ownership, community needs, or the San Luis Valley ecosystem.
- Large capital projects will dominate energy development in the San Luis Valley, hindering local free-market innovation and smaller scale DG projects on private and municipal lands while driving the need for additional large-scale transmission development.
- Large-footprint projects are poorly suited to the adaptive management approach promoted by the environmental community, leading to maximum environmental impacts with expensive and often ineffective, after-the-fact mitigations.
- Large capital projects will proceed on a fast track, leading to boom-bust business cycles, short-term migrant jobs, and minimal long-term benefits to our local community.
- Two of the four SEZ's that have been selected in the SLV (Antonito Southeast and Fourmile East) do not optimize existing transmission infrastructure and corridors. They are at least 2-3 miles away from the existing infrastructure.

These cumulative concerns and likely impacts are surely ripe for analysis, without which the DPEIS would fail to streamline future site-specific NEPA and proper tiering.

Recommendation 2-1: The Solar Supplemental DPEIS must make a reasonable estimate for amount of solar power that could be generated in the San Luis Valley, including BLM lands and non-BLM lands, and how much of this power could reasonably be exported to other markets.

Recommendation 2-2: The Solar Supplemental DPEIS must recognize and evaluate the cumulative impacts of a reasonable range of solar-energy development strategies including a more diverse, phased, small-footprint small-utility scale (100 acre = 10mW each) program that would better mesh with local community DG efforts while helping meet Colorado renewable energy goals.

Recommendation 2-3: The Solar Supplemental DPEIS baseline must recognize the likely scenario of significant power generation on non-BLM lands in the San Luis Valley, including private, state, and municipal lands. See SLVEC position paper.

Recommendation 2-4: The Solar Supplemental DPEIS should consider dropping the two SEZ's that are not near existing transmission infrastructure.

3) Alternatives

The Supplemental Solar DPEIS continues to present a limited set of alternatives:

- No Action = baseline conditions with 7,282,258 acres of BLM lands available for utility-scale solar power development on a case-by-case basis.
- A Modified Solar Energy Zone Program alternative which would focus utility-scale solar energy development on 16,308 acres, under new program administration and authorization policies and mitigating design criteria.
- A Modified Solar Development Program (SEZ) alternative (Zones Plus) which would focus utility-scale solar energy development on 111,059 acres of BLM lands available under the new program administration and authorization policies and mitigating design criteria. *Please note that map 2-46 in the supplemental appear to have no designation marked (Lands available for application)for the Solar Development Program in CO. (Blue Area).*

The SEZ alternative lands do not offer a reasonable array of alternatives for Colorado for the following reasons:

- The unacceptably broad definition of ~~"u~~tility-scale" solar projects which could include community friendly, light footprint, small-utility scale projects as well as heavy-footprint, large-utility projects with enormous direct, indirect, and cumulative impacts.

- The San Luis Valley's so-called transmission-limited status (REDI 2009) which argues for additional alternatives to evaluate Solar Program development with and without a new transmission corridor.

Connected Actions – The Supplemental DPEIS does present existing transmission corridors, so there is no way to determine how unlikely it would be for utility scale solar to develop within two of the four study areas since they are at least 2-3 miles away from the existing corridor. However, we do not see the larger transmission issues properly considered as connected actions into the action alternatives (CEQ 1508.25(a)(1). SLVEC believes the interrelationship of power generation and transmission is critical to the understanding programmatic impacts here and, indeed, should drive alternation alternatives. For instance, the assumption of large-utility scale solar development in the San Luis Valley drives the apparent need for additional transmission, a project that may not be available within the 10-20 year DPEIS planning window. This in turn suggests a more prudent action alternative for the SLV that builds upon existing transmission corridors. We feel that optimization of existing transmission and upgrade on existing lines is a more cost effective way to export electrical power from the San Luis Valley to market.

Recommendation 3-1: The Supplemental Solar DPEIS analysis should be expanded to include a reasonable array of renewable-energy development scenarios, from small-utility (100-acre = 10mW) up to large-utility (6,750 = 675 mW) scales. This should include a meaningful mix of connected actions tied to transmission capacities:

- 150 mW – estimated to be needed locally, with available transmission within the valley.
- 300 mW – energy needed locally + estimated to be exportable with available transmission over Poncha Pass.
- 650 mW – energy needed locally + estimated to be exportable with upgraded transmission over Poncha Pass
- More than 650mW which would presumably require additional transmission.

Recommendation 3-2: The Supplemental DPEIS should include an action alternative with light-footprint solar energy development that would meet realistic energy goals in the San Luis Valley:

- A diverse mix of small-utility scale solar projects on public lands coordinated with similar scale projects on private and municipal lands.
- Project phasing over 10-20 years that would promote sustainable growth while allowing more effective adaptive management. For discussion, we propose a cumulative development of 10-30 mW per year over 10-20 years to meet our solar potential.

- Lower density layouts that would reduce impacts while promoting watershed conservation and better wildlife use of post-development landscapes.
- Equitable revenue sharing with the local community has not been analyzed, and solar-related multipliers including local suppliers.
- We support lands within solar energy zones (SEZs) to be withdrawn from location and entry under the mining laws.

Recommendation 3-3: The Supplemental DPEIS alternatives must offer more detail on the DOE Solar Energy program including:

- 2.3.1.6 Standardize and Streamline the Authorization Process is confusing and unclear, more detail needs to be analyzed
- Description of what the DOE solar program might look like per the action alternatives.

4) Solar Project Authorization 2.2.2.2.1

We believe the ROW process is not appropriate for solar-energy development in the San Luis Valley in part because it undercuts revenue generation and we are unclear as to what the rulemaking process will be to promote competition. How will the BLM choose the best, most practicable projects with greatest public benefit? We understand that authorizations under leases promote better competition amongst project proponents and leads to greater Federal revenues.

Recommendation 4-1: The Supplemental Solar DPEIS must identify and evaluate the logistical and financial differences between operating the Six-State Solar Program under ROW versus Lease authorizations, and present their environmental impacts as well as socioeconomic benefits.

Recommendation 4-2: The Supplemental Solar DPEIS should identify and evaluate the regulatory hurdles necessary to change from the existing solar ROW authorization process to a competitive leasing approach, and begin to make that change as soon as possible to facilitate the next round of site-specific Solar NEPA in the San Luis Valley.

Recommendation 4-3: SEZ authorizations should be tied to a solar-energy conservation plan for the San Luis Valley.

2.3.1.5 Optimize Existing Transmission Infrastructure and Corridors

According to the following definition, the BLM did not consider these variables when choosing the SEZ‘s in the San Luis Valley. Two of the four SEZ‘s are located at least 3 miles away from the existing corridor and only one SEZ (Detilla Gultch) is capable of using the existing transmission lline.

–Further, the BLM_s proposed SEZ identification protocol (see Appendix D, Section D.2.5, of this Supplement) will consider proximity to existing infrastructure such as transmission lines and corridors. The BLM will catalog the existing and proposed transmission lines in relation to the

power generation from a proposed SEZ location. The BLM will also consult with state and regional transmission planning and coordination authorities, state energy offices, and transmission system operators to evaluate available capacity on the existing and proposed lines and whether transmission access issues might create barriers to development in a specific area. Although it is likely that most new utility-scale solar energy development will require new transmission capacity, projects that can be located near existing transmission lines would likely result in fewer environmental impacts associated with connecting to and upgrading the existing lines. Similarly, solar projects that utilize existing corridors would result in reduced environmental impacts, assuming the corridor designation process factored potential environmental and other siting concerns into the corridor alignment. The use of existing 1 transmission infrastructure and corridors could also reduce cost, time, and controversy."

Recommendation 5-1: Since two of the four SEZ's are not in proximity to existing lines (2-3 miles away) and transmission capacity is greatly limited within two of the three zone, we recommend a withdrawal of three of the four SEZ's, with the exception of DeTilla Gultch.

5) NEPA Documentation

Important differences between the SEZs are not taken under consideration such as:

- The proposed DeTilla Gulch is located within a transmission corridor with transmission lines nearby. It is located in the closed basin part of the San Luis Valley and on alluvial fan materials that would be relatively easy to engineer for access and facility development.
- The Antonito SE site is located away from transmission corridors and Los Mogotes East has limited transmission capacity. They are located in the lower part of the San Luis Valley in the Rio Grande Drainage on lava flows with sparse, shallow soils that would be more difficult to engineer for access and facility development.

Such comparisons would help the Supplemental DPEIS meet the goal of streamlining future site-specific NEPA analysis while helping proactive project proponents better understand opportunities to become part of the Solar Energy Program.

Recommendation 5-1: A NEPA summary document pertinent to Colorado should be prepared including:

- Project summary from 1.6 Status of Reasonable Foreseeable Development Scenario. This definition assumes that solar will be developed in each state for export purposes. This assumption may not be true, in fact, most states want to develop energy for themselves and may not have an interest in importing from other states. That trend is being ignored in this document.
- Summary of Colorado SEZs and Zones-Only Lands, unable to determine, especially since map (2-46) is not clearly marked.

- Mitigations outlined in DPEIS Appendix A.

6) Socioeconomics – Jobs and Environmental Justice

We support Conejos County Clean Water (CCCW) in responding to this issue. *C.3.4.5.15 Socioeconomics and Environmental Justice- None*. We disagree with this assertion. Local solar construction projects to date have resulted in a small number of temporary jobs and an even smaller number of jobs for long-term site maintenance and management. These experiences do not prove the jobs numbers typically presented by industry proponents. Even in jobs-hungry Conejos County where 74 % of the Colorado SEZ development would be located, locals are skeptical of industry jobs projections (for instance DPEIS Table 5.17-6) and concerned for the loss of traditional agriculture-related businesses. Again, we believe this is due at least in part to the presumed heavy-footprint large-utility scale of discussions and clear history of fossil-fuel business models throughout the six Southwestern States. SLVEC believes these concerns can be mitigated via the Solar PDEIS program with the analysis of a more reasonable array of solar development scenarios that better match local conditions for solar energy generation and transmission such as proposed in Part 3 above under ―Alternatives." In addition, we believe that phased, less centralized solar development would promote more multiplier effects including other solar-related industries such as a PV panel manufacturer or assembly facility here in the San Luis Valley.

> **Recommendation 6-1:** The Solar DPEIS should evaluate jobs-creation comparing the more reasonable array of build out models discussed above, including a phased, less centralized small-utility scale solar development program coordinated with DG and other small scale development.
>
> **Recommendation 6-2:** BLM should place conditions on solar project authorizations that promote cautious project phasing that would promote long-term, locally based jobs in the San Luis Valley. Phasing of 10-30MW per year over 10-20 years would promote more local jobs, and increased likelihood of local manufacture, while meeting renewable energy goals.
>
> **Recommendation 6-3:** The Solar DPEIS should recognize the implications of forcing large-utility scale projects upon disadvantaged communities in the San Luis Valley, including NEPA Environmental Justice Considerations.

7) Socioeconomics – Revenue and Environmental Justice

The small-utility scale Sun Edison project on private land in the San Luis Valley has proven to generate significant tax revenue for Alamosa County, and similar projects are now in planning and soon to be in construction phases with similar revenue expectations. However, solar projects on BLM lands, especially under ROW authorizations, are not expected to generate as much local revenue. In fact, the large-utility model is often seen as imperialistic, with outside utilities generating power to be exported out of the area with little benefit to the local community.

Worse, we have real concern that large capital projects on public lands may have an unfair competitive advantage over local DG and small-utility projects, sapping local resources and further reducing local revenues.

SLVEC believes that properly phased, decentralized, small-utility solar generation and transmission would better serve our local economy while still helping meet renewable energy needs. While projects on private land have shown to be more beneficial, we encourage projects on BLM lands be analyzed that might have benefits if planned and implemented in a sustainable way.

Recommendation 7-1: The Solar DPEIS should evaluate projected costs and benefits of solar development in the San Luis Valley, comparing revenue generation and distribution in large-utility and small-utility scale projects.

Recommendation 7-2: The Solar DPEIS should identify and evaluate barriers to more equitable distribution of solar revenues including:

- The ROW vs. Lease authorization processes discussed above.
- Competitive project proposals

Recommendation 7-3: BLM should put conditions on solar project authorizations that would guide cautious project phasing which would in turn promote long-term revenues, including multiplier jobs and industries in the San Luis Valley. Also, there doesn‘t seem to be a direct tax or PILT process in place for counties to benefit from solar development on public land.

Recommendation 7-4: The Solar DPEIS should recognize the implications of forcing large-utility scale projects upon disadvantaged communities in the San Luis Valley, including NEPA Environmental Justice Considerations for Conejos County.

8) Solar Program Facilities Siting

The Solar DPEIS describes a thorough screening process used by BLM to eliminate almost 80% of BLM lands (99M – 21.5M) from the Zones Plus alternative and more than 99% of BLM lands for the SEZ alternative DPEIS Page 2-1 to 2-2). We understand this process was carried out in collaboration with local BLM field offices and eliminates land with open water, wetlands and riparian areas, critical habitats including habitat for Threatened and Endangered Species, areas with cultural resources including sites eligible for listing on the National Register of Historic Places, and other areas of important conservation values (DPEIS Table 2.2-2 on Page 2-8). In addition, the screening process did evaluate the possibility of development solar facilities on brownfields including previously disturbed grounds such as mining sites, closed industrial facilities, and landfills. This corresponds with our scoping comments dated 15July08.

We are concerned, however, that this screening only applies to solar-energy generation facilities and not to supporting linear infrastructure such as roads, transmission lines, and natural gas or water pipelines (DPEIS Page 2-7).

> **Recommendation 8-1:** The Solar DPEIS should disclose any lands of important conservation value that is likely to be utilized in transmission, road, and pipeline corridors as part of SEZ development in the San Luis Valley.
>
> **Recommendation 8-2:** The Solar DPEIS should disclose the presence of brownfields in and adjacent to the SEZs.

9) Natural Resources – Soil/Vegetation/Reclamation

We have reviewed the four Colorado SEZs by aerial photo and field reconnaissance site checks and see that the Solar DPEIS screening process described in Part 2.2.2.2 has eliminated most of the BLM lands with high ecological value including lands listed in our SLVEC scoping letter dated 10Sept09. Conversely, the low ecological function of these SEZ lands would present greater challenges to site development and reclamation. Disturbed areas would be prone to erosion from wind, vehicle use, precipitation, and increased water along facility drip lines. Thin soils will be difficult to manage, vegetation sensitive to disturbance, and the dry settings will make reclamation difficult.

The scale and layout of solar projects would have large consequences upon natural resource management. Heavy-footprint, large-utility scale projects would be difficult to fit into the landscape while creating more intensive disturbances over shorter periods of time and larger volumes of storm water over longer periods. On the other hand, light-footprint, small-utility scale projects would be easier to fit into the landscape and be more suitable to adaptive management including phased reclamation where ~~l~~live" materials from one project phase can be used to help reclaim another.

The DPEIS is ripe for evaluation of a solar-energy-driven ecosystem conservation plan for the San Luis Valley, identifying larger scale habitat values to guide site-specific NEPA analysis of the four SEZs, and high-value mitigations not readily apparent to site specific projects.

> **Recommendation 9-1:** The DPEIS should include a conceptual solar-energy-driven ecosystem conservation plan for the San Luis Valley responding to likely solar-development impacts and offering guidance for future site-specific NEPA analysis. Conceptual conservation planning would include:
>
> - Watershed based planning building on numerous sources including our SLVEC Ecosystem Map dated March11. **We submit link as a BLM/DOE resource.**
> - **http://slvec.org/Projects/renewables**

- Broad-based mitigation strategies that would guide future efforts and be fully funded by solar-energy development.
- No net loss of habitat values over the conservation area through restored habitat linkages, securing and restoration of important habitats, and protection under conservation easement.
- A net improvement of agricultural values over the conservation area through restored wildlife-friendly agricultural infrastructure, coordinated rest-rotation practices, and land protection through conservation easement.
- The SLVEC ecosystem base map as a planning base to be combined with other resources.

Recommendation 9-2: Site development plans should prohibit typical over-lot grading and be closely tied to habitat conservation plans to assure minimal disturbance, staging and immediate re-use of live topsoil and plant materials, and timely reclamation.

Recommendation 9-4: Site reclamation plans should include consideration of revegetation needs under solar panels. Consideration should include elevated panels to allow wildlife usage, and grass/shrub species suited to shade and reduced precipitation.

Recommendation 9-3: Site designs should take advantage of habitat modifications from solar panel shading and concentration of water along drip lines. For instance, all drip lines should fall into vegetated swales that connect to existing drainages.

10) Natural Resources – Groundwater/Surface Water

The Solar DPEIS sorting process has generally eliminated areas with open water, wetlands, and riparian areas with shallow groundwater. In addition, we understand all site development plans will include site-specific detailed surveys to further clarify site resources and develop mitigation strategies. As discussed above, we see the dilemma of working in these dry areas where solar facilities would shade out and block rain and snow but also concentrate water along facility drip edges. In addition, all four Colorado SEZs have value as water-recharge areas which would be modified by site development.

Here again, the scale and layout of solar projects would have large consequences on natural resource management. Heavy-footprint, large-utility scale projects would be difficult to fit into the landscape while creating more intensive disturbances over shorter periods of time and larger volumes of stormwater over longer periods. Such changes in hydrology could lead to increased overland flow and erosion of now-dry drainages. On the other hand, light-footprint, small-utility scale projects would be easier to fit into the landscape and be more suitable to adaptive management including phased reclamation and better connectivity between solar site drainage and adjacent natural drainages.

We commend the DPEIS for proposing to place a condition on authorizations to prohibit high-water-use solar facilities, consistent with our comments dated 10Sept09. This will go a long way toward re-assuring local residents.

> **Recommendation 10-1:** DOE should further evaluate water-conservation practices in solar-energy technology and develop performance-based standards for authorizations in the Proposed Solar Program.
>
> **Recommendation 10-2:** Site development plans should be closely tied to the solar-energy-driven conservation plan for the San Luis Valley recommended above.
>
> **Recommendation 10-3:** Site developments plans should include grading to collect drip-line water and other stormwater into vegetated swales connecting with existing drainages. Minor modifications of existing drainages may be required to handle additional flows possible from sites.

11) Natural Resources – Wildlife Habitat

The Solar DPEIS screening process described in Part 2.2.2.2 has eliminated most of the BLM lands with high wildlife value including lands listed in our SLVEC scoping letter dated 10Sept09. In addition, we understand all site development plans will include detailed surveys to further clarify site resources and develop mitigation strategies.

Not readily apparent from outside, these areas do have value to migrating birds, small resident mammals and the birds of prey who rely upon them as food base, and pronghorn antelope. We also understand there is some concern for migrating waterfowl mistaking solar arrays for open water. Upon recognizing their mistake, such waterfowl might not have the energy to regain flight elevations and be stranded in the dry areas chosen for the SEZs.

Here again, the scale and layout of solar projects would have large consequences upon natural resource management. Heavy-footprint, large-utility scale projects would be difficult to fit into the landscape while creating more intensive disturbances of wildlife populations. On the other hand, light-footprint, small-utility scale projects would be easier on resident and migrating wildlife, allowing them to disperse into closer adjacent areas. Light-footprint projects could be woven around existing habitat corridors, maintaining connectivity, as well as being more suitable to adaptive management.

The DPEIS is ripe for evaluation of wildlife characteristics in a solar-energy-driven ecosystem conservation plan for the San Luis Valley, identifying larger scale habitat values to guide site-specific NEPA analysis of the four SEZs, and high-value mitigations not readily apparent to site-specific projects.

Recommendation 11-2: Site development plans should be closely tied to conservation planning including timing of disturbances and reclamation activities.

Recommendation 11-3: Site reclamation plans should include consideration of wildlife opportunities under solar panels. Consideration should include elevated panels to allow wildlife usage, and forage species suited to shade and modified precipitation.

Recommendation 11-4: Site development plans should take into account the possibility that high-flying waterfowl might mistake the solar facilities for open water areas.

12) Natural Heritage and Cultural Resources

The Solar DPEIS screening process described in Part 2.2.2.2 has eliminated most of the BLM lands with Natural Heritage and Cultural Resource values including lands listed in our SLVEC scoping letter dated 10Sept09. In addition, we understand all site development plans will include detailed surveys to further clarify site resources and develop mitigation strategies. Here again, the scale and layout of solar projects would have large consequences on natural resource management. We believe light-footprint, small-utility scale projects would be easier to blend into the landscape, including avoidance of Natural Heritage and Cultural Resources. As mentioned in previous comments, three of the four recommended sites are located within the Sangre de Cristo National Heritage Area.

13) Air Quality

14) **C.3.3.5.10 Air Quality and Climate –** None. We disagree with this assertion
Air quality is a big concern in the San Luis Valley and every disturbance has the possibility of generating dust. This will be a particular concern in the SEZs due to the factors listed above such as sparse soils and difficulty of re-vegetation. There is also some concern for air pollution should a solar facility catch fire.

Here again, the scale and layout of solar projects would have large consequences on dust and air quality. Heavy-footprint, large-utility scale projects would be offer large continuous areas susceptible to wind erosion and fewer natural breaks and traps. On the other hand, light-footprint, small-utility scale projects would be easier to fit into the landscape, retaining and enhancing natural dust prevention and capture features, and be more suitable to adaptive management.

Recommendation 13-1: Solar site development plans should include conservation methods to prevent dust erosion and capture dust as part of site layout. Additional measures including dust-inhibitors should be balanced against re-vegetation needs. (Dust inhibitors also can inhibit vegetation growth)

Recommendation 13-2: The Solar DPEIS should evaluate the impacts of low-probability events at developed solar sites including fire and explosions related to natural disasters and terrorism.

15) Visual Resource Management

Thank you. We understand the authorization process would prohibit high-profile solar facilities such as ―power towers" and that all site plans would include visual resource evaluation. SLVEC supports these conditions. We appreciate the very thorough analysis.

16) Public Health

We did not find in the Supplemental DPEIS discussion of potential impacts upon public health from Electromagnetic Frequencies (EMF) including EMF emitted from transmission lines near homes, schools, businesses or places such as the Blanca/Ft. Garland Community Center This is another reason to include transmission lines and necessarily connected actions to solar energy development.

Recommendation 15-1: The Solar DPEIS should develop and present general characteristics of EMF effects along all existing and proposed transmission corridors.

Recommendation 15-2: The DPEIS should evaluate the health effects of EMF from different scales of solar development.

Recommendation 15-3: Project authorizations should include evaluation of EMF effects upon local populations of humans as well as wildlife.

cc:
Erin Minks, Senator Mark Udall
Charlotte Bobicki, Senator Mike Bennet
Brenda Felmlee, Rep. Scott Tipton
Jane Summerson, DOE
Andrea M. Jones, BLM La Jara
Jeanna M. Paluzzi, CSU Extension, GEO Office

Thank you for your comment, Michael Powelson.

The comment tracking number that has been assigned to your comment is SEDDsupp20189.

Comment Date: January 28, 2012 01:54:40AM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20189

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Attachment: TNC comments on the BLM SDPEIS for Solar Energy.docx

Comment Submitted:

January 27, 2012

Mr. Bob Abbey
Director
Bureau of Land Management
Solar Energy PEIS
Argonne National Laboratory
9700 South Cass Avenue
Argonne, IL 60439

Dear Mr. Abbey:

Thank you for the opportunity to comment on the Supplement to the Draft Programmatic Environmental Impact Statement for Solar Energy Development (SDPEIS). The Nature Conservancy's response is attached.

If you have any questions, please contact Michael Powelson, Director of Energy Programs, North America Region, at (503) 233-4243 or mpowelson@tnc.org.

Sincerely,

Robert Bendick
Vice President for External Affairs

Enc. Comments on the BLM's Supplement to the Draft Solar PEIS

The Nature Conservancy
Protecting nature. Preserving life.™

Comments on the Bureau of Land Management Supplement to the Draft Programmatic Environmental Impact Statement for Solar Energy Development

The Nature Conservancy · 4245 North Fairfax Drive, Suite 100, Arlington, VA 22203 · (703) 841-5300

Introduction

The mission of The Nature Conservancy (the Conservancy) is to conserve the lands and waters on which all life depends. Our on-the-ground conservation work is carried out in all 50 states and in 30 countries with the support of approximately one million members. To date, we have helped conserve more than 117 million acres worldwide, with 24 million acres conserved in the United States alone. The Conservancy owns and manages approximately 1,400 preserves throughout the United States; they form the world's largest private system of nature sanctuaries. The Nature Conservancy has completed ecological assessments for all terrestrial and freshwater eco-regions in the United States, including extensive analysis juxtaposing these assessments against of our nations' renewable and other energy sources to inform energy siting and mitigation that best conserves our country's biodiversity resources.

The Conservancy previously provided in-depth comments and recommendations to the Draft Programmatic Environmental Impact Statement for Solar Energy Development (DPEIS) prepared by the Bureau of Land Management (BLM), based on our on-the-ground experience, our scientific expertise, and our engagement in public stakeholder planning processes, including BLM's Restoration Design Energy Project in Arizona, the State of California's Desert Renewable Energy Conservation Plan (DRECP) and the California Desert and Solar Working Group (CDSWG). We are encouraged by the direction taken in the Supplement to the Draft Solar PEIS and commend BLM for their efforts to prioritize policies and practices with the potential to significantly minimize harm to sensitive desert habitats, while allowing robust development of our nation's renewable energy resources on public lands.

Based on our familiarity with renewable energy issues, as well as our conservation planning and science expertise, we maintain that the goals of increased clean energy development and protecting biodiversity are not mutually exclusive, given the appropriate scientific and policy framework. We continue to support BLM's proposal to create a solar energy development program and the Department of Energy's (DOE's) proposal to identify policies that avoid and minimize ecological impacts and protect natural and cultural resources for solar projects involving the agency. In this response, we will highlight outstanding issues that should be redressed before the solar energy development program is finalized and the Solar PEIS Record of Decision (ROD) is reached.

The Nature Conservancy's Recommendations

General Overview

The Conservancy's general recommendations to BLM on the creation of a solar energy development program are unchanged and can be found in our previously filed comments titled "Response to the Bureau of Land Management Draft Programmatic Environmental Impact Statement for Solar Energy Development."

In the following pages, the Conservancy's recommendations focus on specific improvements that may yet be made to the Solar PEIS: the use of landscape-scale assessments to inform siting and mitigation decisions; the identification of new Solar Energy Zones (SEZ); how pending projects should be addressed; the adoption of Best Management Practices, especially for water resources; and mitigation, especially specific to elements and processes for the development of regional mitigation plans. We also include our ecological analysis of the revised zones included in the SDPEIS, and our thoughts on criteria and process for siting of new projects outside of SEZs, i.e. "variance."

A Program for Solar Energy Development

The Nature Conservancy recommends adoption of the Modified SEZ Alternative that limits solar development to SEZs, those currently identified in the SDPEIS (and revised per these comments) and any new SEZs BLM creates in the future, as the basis of a program to manage solar energy development on BLM-administered lands. However, we recommend several important revisions to structure a program that meets the needs of solar development while ensuring biodiversity conservation, irrespective of which action alternative is eventually selected.

First, we strongly recommend that BLM use landscape-scale ecological assessments and best available science as the basis for **all** siting and mitigation decisions, i.e. the basis for any solar energy development program.

Second, BLM should specifically use landscape-scale ecological assessments as the basis for the creation of new zones and the modification of existing zones. We also recommend that BLM use assessments for further analyzing and modifying the SEZs identified in the SDPEIS, per our analysis contained in our Appendix at the end of these comments. Additionally, should BLM create a variance process for projects sited outside of SEZs,

landscape-scale ecological assessments should be used to identify areas and places where siting of projects should not occur.

Third, we reiterate our recommendations that BLM include specific metrics, monitoring and accountability for specific Best Management Practices (BMPs) for the planning, construction and operation of solar energy projects to ensure undesirable and damaging environmental impacts are minimized. We strongly recommend clear, enforceable BMPs for the protection of water resources, especially key in the arid Southwest. Lastly, BLM must incorporate a robust mitigation framework that avoids and minimizes ecological impacts to the greatest extent possible, and includes a compensatory mitigation program that ensures, through clearly specified elements and compensation requirements, that all unavoidable ecological impacts are fully addressed.

SDPEIS Alternatives

The Supplement to the Draft Solar PEIS (SDPEIS) evaluates three alternatives: a No Action alternative; a Modified SEZ Alternative ("Modified SEZ Alternative"); and a Modified Solar Energy Development Program Alternative ("Modified Program Alternative"), selected by BLM as the preferred alternative.

The Nature Conservancy specifically recommends BLM select the Modified SEZ Alternative, which exposes fewer acres of high value conservation lands to habitat conversion or degradation while still providing ample initial room for solar energy development, and allowing additional SEZs to be created should they be warranted. In contrast to the Modified SEZ Alternative, both the Modified Program Alternative and the No Action alternative open far too many acres to potential solar energy development, putting the sensitive habitats and natural communities of the Southwest at risk, preclude other beneficial uses under BLM's multipurpose mandate, and inefficiently use our scare public resources by failing to focus them on those areas where solar energy development has the greatest likelihood of success. We urge BLM not to adopt either of these alternatives.

The Nature Conservancy strongly supports the Modified SEZ Alternative over the preferred alternative for a number of reasons:

1. Concentrating solar development in zones that are most appropriate for development will ensure that solar projects are built faster, cheaper and in a manner that is better for the environment, developers and consumers. The use of SEZs will allow BLM to focus scarce assessment, planning, permitting and monitoring resources to specific places, likely leading to robust and detailed understanding of development areas that hasten and streamline processing of project applications (including consultation under the Endangered Species Act, where applicable), project construction, and the implementation of any mitigation.

2. The SEZ approach greatly reduces uncertainty in transmission planning (especially if transmission is considered when creating new SEZs) and will allow federal and state agencies to analyze with reliable assumptions the need for any necessary transmission planning and/or construction, including upgrades that will be needed to bring renewable energy to population centers. This will facilitate and expedite transmission planning processes, and thus the ultimate delivery of renewable energy to consumers.

3. Conservation science supports this approach as SEZs are likely to overlap with significantly fewer acres of important conservation areas, and by focusing development away from intact habitats, reduce habitat fragmentation and preserves wildlife corridors. Analysis by The Nature Conservancy has found the modified SEZs reduce the area of high conservation value impacted by development by nearly 53% relative to the Modified Program Alternative (from 2,885,786 acres to 135,885acres) across California and Nevada. (Please see the Appendix for a description of the analysis that The Nature Conservancy conducted).

4. The modified SEZs identified by BLM in the SDPEIS, given the robust Reasonably Foreseeable Development Scenarios developed for the DPEIS and used in the SDPEIS, allows for plenty of room for solar energy production to grow responsibly over the next five years and will allow for robust expansion of solar energy in the future. Additionally, to ensure a robust program, we support a well-designed process for the creation of new SEZs, especially in those places that may not be well served by the zones in the SDPEIS, i.e. close to existing load.

5. The SEZ approach creates an atmosphere of success: our public lands are used and enjoyed by many stakeholders, and by focusing solar energy development to specific places where solar energy development is appropriate current concerns and tensions within the public will be greatly reduced. In this case, less truly is more - by focusing on areas where projects have the greatest chance for success, rather than investing time and resources "fixing" inappropriately sited projects, BLM can ensure that good projects move forward quickly, and our most critical areas of biodiversity are protected.

The Nature Conservancy opposes adoption of the preferred alternative, the Modified Program Alternative, for the following reasons:

1. The potential for conflict ecological, cultural and social conflict would be very high. For example, The Nature Conservancy's ecological assessments for the Mojave and Sonoran eco-region shows that millions of acres open for development in this alternative would directly impact important regional conservation areas, and jeopardize several ESA-listed and many other sensitive and vulnerable species. This has the potential to create a significant atmosphere opposed to solar energy development.

2. Making available millions of additional acres in addition to the SEZ's in the SDPEIS, in areas potentially inappropriate for solar development, without clear incentives to locate projects in SEZs, and clear disincentives for developing outside of zones, undermines the carefully chosen low conflict/high resource SEZs, and is likely to ultimately inhibit the development of the fledgling solar energy industry, leading to major setbacks to our desperately needed transition to a clean energy economy. Opening up vast areas for solar development will only perpetuate the atmosphere of concern and conflict we have witnessed over the last three years.

3. BLM estimates that approximately 300,000 acres will be needed to produce over 30,000 megawatts of electricity generated by solar power by 2030, under even the most robust and optimistic Reasonably Foreseeable Development Scenarios, we believe that automatically making more than 3.4 million acres immediately available for solar development is unnecessary, especially given a strong commitment to undertake a well-delineated, robust process

for adding new SEZs as warranted, and would constitute a significant misallocation of public resources.

It continues to be important to note that thorough ecological assessments for each SEZ identified in the SDPEIS will be needed, as none of the current SPDEIS analyses of alternatives provides sufficient information to meet NEPA sufficiency standards for siting of individual projects within SEZs. For example, the Conservancy's eco-regional analyses, previously offered in our public comments on the DPEIS, rank the ecological sensitivity of desert locations only on a broad scale, and, if used as a guide to create new SEZs (or site individual projects) would still require finer scale, site-specific data collection and analysis to permit solar development projects.

The Role and Use of Landscape-scale Ecological Assessments

The Nature Conservancy has developed and used science-based tools to achieve lasting conservation.[1] Landscape-scale ecological analysis is the operative heart of these tools. In our prior comments on the DPEIS, we stressed the vital importance of using landscape-scale ecological assessments in land-use planning and decision-making, and we believe that BLM should make a strong commitment to greater use of landscape-scale ecological assessments in energy siting and mitigation decision-making.

As previously mentioned, BLM has made significant progress on this front. In Appendix D under "Additional Locally Relevant Screening Criteria," for the creation of new SEZs, BLM states in D.3.3 that "BLM should use landscape-scale ecological assessments to identify, and exclude from SEZs, areas of high ecological value or importance (e.g., BLM's rapid ecological assessment, California's Desert Renewable Energy Conservation Plan [DRECP], The Nature Conservancy's eco-regional assessments, and Crucial Habitat Assessment Tools being developed pursuant to the Western Governors Wildlife Council "Wildlife Corridors Initiative"). For example, in areas with pre-existing landscape-scale conservation plans, such as the DRECP in California, future SEZs will not be considered in areas needed to achieve biological goals and objectives established in the plan. Other

[1] For example, *Conservation by Design*, is used to identify the most important places for conservation, threats to the ecological health of those places, the best strategies to reduce those threats, and how to measure our effectiveness, via an eco-regional assessment process.

types of areas to screen for based on landscape-scale information may include areas with significant populations of sensitive, rare, and special status species or unique plant communities, important biological connectivity areas for special status species, designated wildlife habitat management areas, and areas with high concentrations of ethno-botanical resources of importance for Native American use. To identify additional locally relevant screening criteria, the BLM will undertake consultation with appropriate land management agencies for consideration of areas close to special designations such as the National Parks, National Refuges, and National Forests. Such consultation may result in agreements not to locate SEZs near specific units, based on an agency's assessment of potential adverse impacts on those units. As its environmental analysis for individual solar ROW applications on public lands continues, the BLM is expanding its knowledge of areas not suitable for development. Areas eliminated from ROW applications due to resource conflicts (e.g., rare vegetation or desert washes) may provide additional screening criteria for SEZs."

We highly commend BLM for including this language. We also applaud the agency's current engagement in the California Desert Renewable Energy and Conservation Plan (DRECP), BLM's creation of the West Chocolate Mountains scoping and EIS process, the Arizona Restoration Design Energy Project, and EPA's Repower America effort.

However, the SPDEIS does not make use of eco-regional assessments and best available science as one of the **primary** bases for the creation of new SEZs or the specific siting of solar energy projects. This is a significant oversight, and thus we strongly recommend that BLM:

1. Use landscape-scale ecological assessments (LSEAS) as a key tool to identify and avoid solar development in areas of high ecological value. BLM should use these tools in the evaluation (and rejection) of existing applications, the creation and modification of SEZs, and, if adopted, in decisions on acceptable variance application areas.

   We recommend, further that "areas of high ecological importance" as described in Appendix D, D.3.3 be included as a specific "Program Exclusion Criteria" for the creation of new SEZs to ensure that SEZ creation avoids ecological and other land use conflicts in siting new solar energy projects.

2. The SDPEIS mentions the desire of BLM to identify and evaluate converted or highly degraded lands, on both BLM-administered and adjacent public and private lands, for use as SEZs. BLM should use LSEAs to identify these areas, and we recommend identified areas be offered as the preferred areas for solar energy development, creation of new SEZs, and if adopted, a key siting criteria within a project siting variance process.

3. BLM should use LSEAs to identify areas of high ecological value on both public and private lands to guide mitigation investments—for acquisitions of private land, or administrative, management or restoration actions on BLM-administered lands.

4. The DPEIS should specifically call for the incorporation of the results of BLM's REAs, the California Desert Renewable Energy and Conservation Plan, BLM's West Chocolate Mountains scoping and EIS process, BLM's Arizona Restoration Design Energy Project, and EPA's Repower America's, and any analyses captured by BLM's Assessment, Inventory and Management program into resource management plans. Specifically, BLM should be use these tools along with LSEAs to establish goals for protection of specific conservation targets, to identify lands and actions needed to meet those goals, and to assess the best places for mitigation investments.

A Least Conflict Approach to Adding New or Modifying Existing Solar Energy Zones

While we believe that the modified SEZs in the SDPEIS allows for significant development of solar energy, especially given stated goals of the Departments of Interior and Energy and state Renewable Portfolio Standards covered by the affected area, we recognize that additional SEZs may be needed to ensure robust opportunities for the development of solar energy. To ensure the protection of sensitive desert species and habitats, we recommend BLM improve the SDPEIS by adopting a least conflict selection method for adding new or modifying existing SEZs. In part, BLM can accomplish this by accommodating, supporting and expanding ongoing BLM, other federal and state processes that discriminate among those areas appropriate for conservation versus those approved for siting – we applaud and strongly support BLM's recommendation to rely on the results of the CA DRECP, the BLM West Chocolate Mountains EIS, and BLM's Restoration Design Energy Project in Arizona in the

identification and creation of new SEZs (Sections 2.2.2.5 and 2.2.2.6 of the SDPEIS).

Please see our comments in the section above, "The Role and Use of Landscape-scale Ecoregional Assessments" for additional recommendations on the elements of a "least conflict" approach to adding new of modifying existing SEZs.

Developer Incentives for Moving into SEZs

To ensure robust development in SEZs, the SDPEIS should establish specific incentives for developers to locate all new applications within SEZs, and to relocate existing applications (as delineated in the SDPEIS) from higher conflict areas to these zones. [2] Our recommendations are:

1. Provide speedier and easier permitting for applications within SEZs;

2. Improve and facilitate mitigation for applications in SEZs;

3. Expedite transmission planning, permitting and construction to SEZs;

4. Provide economic incentives for development within SEZs.

Faster and Easier Permitting in Zones

We recommend that agency NEPA resources and coordination teams be focused on permitting solar projects within SEZs, versus projects outside of SEZs. Once a SEZ is designated, a zone-level EIS coordinated with Section 7 consultations, should be conducted at a sufficiently fine scale to allow individual project tiering, ensuring rapid completion of remaining individual project NEPA analyses.

Schedules for individual project NEPA reviews should be established and backed by single-contact interagency teams focused on expediting SEZ NEPA completions, including the critical Section 7 review process.

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[2] See *Management of Pending (Existing) Applications*, infra, which includes a discussion of our recommendations on providing a reasonable transition for existing plant applications from outside to within SEZs.

Improve Mitigation Certainty for projects within SEZs

SEZ-level NEPA analyses should include the establishment of regional mitigation plans to cover the anticipated compensatory mitigation needs for reasonably anticipated cumulative development within the zone. A developer within the SEZ may then satisfy compensatory mitigation responsibilities for any unavoidable project ecological impacts through contributing to funding the implementation of the regional plan, rather than entering into potentially lengthy negotiations over land acquisition or other actions. This facilitated regional mitigation approach improves permit efficiencies and financial predictability for the developer. At the same time, it also focuses offsets on rationally-established conservation priorities, including sensitive species benefits through higher quality habitat, improved connectivity between habitat areas, and better long-term ecosystem protection.

Expedite transmission to SEZs

BLM can take a number of actions to facilitate transmission planning and development to service projects sited within SEZs, although we acknowledge some essential steps may lie outside of the agency's direct influence and control.

1. Each SEZ-level EIS should analyze gen-ties and larger lines, and consider the need to build additional roads to facilitate transmission development;

2. BLM should seek cooperative agreements to facilitate State permitting of gen-ties and longer lines, as well as to facilitate permitting of high-voltage interstate power lines that could support solar energy development in SEZs;

3. The SEZ EISs should provide a detailed evaluation of the transmission needs and impacts for anticipated solar development within the SEZ to assist in both the planning and permitting of transmission;

4. We strongly encourage the BLM to devote SEZ-targeted resources to participating in the key ongoing comprehensive transmission planning efforts and to seek agreements with state and regional authorities to ensure that SEZ areas get adequate attention.

Key planning efforts include, for California, the California Independent System Operator Transmission Planning Process and Statewide Transmission Plan, the California Transmission

Planning Group, and transmission planning conducted as part of the DRECP Process.
At a regional level they include efforts by the Western Electricity Coordinating Council (WECC), the Western Governors Association (WGA), and the Western Area Power Administration (WAPA).

More specifically, for California, we recommend that BLM request the CA ISO and the Public Utilities Commission to enter into a MOU with the Interior agencies (BLM and the USFWS) to coordinate planning and permitting for solar energy development in SEZs. This will ensure that SEZ-related transmission projects are included in the Revised Transmission Planning Process and enlist CA ISO and CPUC assistance in identifying and analyzing SEZ projects.

Outside California, the BLM should seek similar MOUs with relevant regulators and transmission planners in the other five states within the DPEIS study area to give priority consideration to necessary lines. Close coordination with transmission planning efforts will ensure that SEZ solar energy projects can rely on transmission in the planning stage and loads generated within SEZs or on other BLM-administered lands can be efficiently utilized upon facility start-up.

Provide Economic Incentives for Solar Development within SEZs

Beyond help in permitting, mitigation and transmission, the Conservancy recommends that BLM offer projects locating within SEZs economic incentives:

1. A reduced capacity charge on energy generated within a SEZ;

2. Provision of a longer phase-in period for rental payments.

Private Land Incentives

BLM should explore and encourage development of renewable energy on appropriate private lands near and adjoining BLM-managed lands that would place projects on lands that are not ecologically valuable. For projects proposed to be located in SEZs where use of adjoining private lands would provide additional project viability, BLM should explore whether it can offer all permitting incentives described above to the project as if it were fully on BLM land.

Best Management Practices

Broad Principles

The Conservancy's previous response to the DPEIS observed that while the DPEIS devoted significant attention to BMPs and BLM policies for the processing and approval of solar facilities on BLM-administered lands, it provided few specifics or metrics to ensure impacts would be minimized. Broadly applicable principles require specific administration, monitoring, and if necessary, enforcement provisions to effectively minimize impacts. The SDPEIS does not expand the discussion of the BMPs included in the DPEIS, e.g. how broadly stated principles will be applied, nor address gaps or missing elements. The existing discussion of BMPs is insufficient to provide clear and firm guidance on what specific management practices will be the norm and the extent to which individual variations will be allowed and how they are to be decided. We strongly recommend BLM provide specific criteria, metrics and accountability in the DPEIS to ensure that BMPs offer measurable and long-term protection of desert ecological and water resources.

Protection of Water Resources

We are particularly concerned about the lack of clear protections in the DPEIS, via BMPs or otherwise, of water resources, per the comments the Conservancy offered previously on the DPEIS. The need to create a framework that protects water resources is urgent - BLM's approval process for applications continues, with several proposed in places with critical water resources that are likely to be adversely impacted.

In the arid lands and deserts of the southwestern states, long-term conservation and protection of water resources is critical to maintaining ecosystems, habitats, and species. The siting and operation of utility-scale solar generation facilities in these arid and desert environments can have far reaching direct and indirect adverse effects The DPEIS describes many of these effects: loss of water resources; modification of the natural surface water and groundwater flow systems; alterations of the interactions between groundwater and surface water; contamination of aquifers; and water quality degradation by runoff, excessive withdrawals, or chemical leaks and spills. Of these, the most important is the loss of surface water resources linked to excessive groundwater withdrawals.

Many desert solar energy facilities intend to rely on long term groundwater pumping for their construction, operation and

maintenance. Adverse effects of this pumping can extend widely, last for a very long time, and be difficult to predict and detect, and potentially cause irreparable harm to aquifers and surface ecosystems. And, (as duly noted in the DPEIS), existing federal protection of groundwater is limited. Reliance on state and local groundwater regulations that vary widely across jurisdictions often results in placing a lower priority on protection of ecosystem needs for groundwater.

In our view, protection of desert water resources warrants strong and specific requirements for water —particularly groundwater--use by solar developers. We recommend BLM adopt comprehensive, clearly articulated water BMPs to protect scarce, at-risk groundwater resources. These BMPs should include, irrespective of state requirements the following:

1. Prohibition on any groundwater withdrawal by a solar facility from a groundwater basin that will cause or contribute to withdrawals over the perennial yield of the basin, or cause an adverse effect on ESA-listed or other special status species or their habitats over the long term. However, where groundwater extraction may impact groundwater dependent ecosystems, and especially within groundwater basins that have been over appropriated by state water resource agencies, solar projects may qualify where the developer commits to provide mitigation measures that will provide a net benefit to that specific groundwater resource;

2. All projects undertake robust hydrological studies that use all available data and accepted models that specifically define groundwater basins and surface water and groundwater interactions, sustainable yields, and long term effects, of all existing and probable withdrawals, including likely effects related to climate change;

3. Groundwater monitoring with triggering provisions that specify automatically imposed remedies for reductions in groundwater use in the event that monitoring or modeling shows that adverse effects are likely to occur, or are occurring;

4. Where existing data and models are not available to adequately describe key hydrological conditions in the target groundwater basin and affected aquifers and the effects of proposed pumping, the applicant should be required to underwrite sufficient data collection and

models as a condition of receiving federal approvals;

4. Documentation that demonstrates that the proposed project is designed to use the best available technology[3] for limiting water use that is applicable to the specific generation technology as well as during construction and operations, subject to review and additional mitigation;

5. BMPs should also include requirements for compensatory groundwater mitigation in the form of acquisition and retirement of senior groundwater water rights in multiples of the projected pumping levels, retained for conservation use. Where limited exceptions, site-specific allowances or variances from generally applicable rules are authorized, the burden of proof should lie on the project applicant to demonstrate the absence of harm when proposing an alternative course of action.

Groundwater-Specific BMPs Applicable to SEZs and Desert-Wide Sites

Nowhere are the potential impacts to surface and groundwater resources more important than in the bi-state Amargosa flow system. As we noted in our comments on the DPEIS, the proposed Amargosa Desert SEZ in Nevada is located over the extensive Death Valley Regional Flow System, which supports the ESA-listed Devil's Hole pupfish and numerous other listed, endemic, and sensitive species in Ash Meadows National Wildlife Refuge and the Amargosa River and Death Valley National Park. Water levels are declining in Devil's Hole, most likely due to regional groundwater pumping and lower recharge rates, risking extirpation of the species.

While concern for Devil's Hole is noted, the DPEIS/SDPEIS omits any significant mention of the impacts of groundwater pumping in the Amargosa Desert SEZ on aquatic and riparian species in two key BLM protected areas downstream in California: the Amargosa ACEC and Wild and Scenic River.

The US Geological Service (USGS) regional groundwater flow model and very recent geochemical and hydrologic studies of the Amargosa basin in the Tecopa and Shoshone area suggest that flow from the north (i.e., from the Amargosa Valley area) may be an important contributor to maintaining perennial water in the Amargosa River Wild and Scenic segments, and tributary streams and springs. While the area is hydrologically complex, pumping in Amargosa Valley could well adversely affect the Wild and

Scenic River flow, BLM's ACECs in the area, as well as sensitive and ESA-listed species that depend on the river and spring flows (e.g., Amargosa vole, least Bell's vireo, Amargosa pupfish, and several rare plants) Before this SEZ is finally approved or the siting or approval of any solar projects in the Amargosa or Pahrump Valley areas are considered, the long term cumulative effects of all groundwater withdrawals from this flow system on protected ecological resources must be understood and considered.

In our previous comments on the DPEIS, we recommended elimination of this SEZ. While the SDPEIS proposed a significant reduction in the size of Amargosa Valley SEZ (eliminating areas near and in the Amargosa River floodplain), this SEZ is still included, despite objections from multiple agencies and other interested third parties. There are at least six applications for solar facilities in nearby and hydrologically linked Pahrump Valley and four in the Amargosa Valley itself, including the approved (but apparently on hold) Solar Millennium plant. The cumulative effect of all of these plants using groundwater from the interconnected Death Valley Regional Flow System is not dealt with in the DPEIS/SDPEIS. As we noted previously, regional groundwater pumping by existing sources is already a serious concern in this groundwater, in 2009, more than double the perennial yield of the basin was withdrawn. Approved basin allocations exceed perennial yield by over 18,000 acre feet per year. The water requirements of the possible solar plants in this SEZ and surrounding areas will clearly exacerbate this situation. As we urged in previous comments, this SEZ should be cancelled and we urge as well that existing applications be put on hold until this groundwater system is understood more fully.

The Role of State and Local Water Law and Regulations

The Conservancy continues to find strong federal authority exists for BLM to limit harmful groundwater withdrawals from BLM-administered lands, a position which should be asserted in the final Solar PEIS. Please see our previous comments on the DPEIS for a thorough explanation of BLM's important role and responsibilities in managing surface and groundwater resources irrespective of state and local water laws.

Mitigation: A Framework for Lasting, Tangible Results

BLM has the opportunity to create an effective mitigation framework that protects public lands with measures that deliver lasting, tangible results. As the basic rule of thumb, BLM should ensure all mitigation be additional, enduring, monitored, account for the full cumulative impact of projects, and be at a sufficient scale to ensure ecological viability.

Per our comments on the DPEIS, we urge BLM to explicitly integrate the Council of Environmental Quality (CEQ) January 14, 2011 guidance titled "Appropriate Use of Mitigation and Monitoring and Clarifying the Appropriate Use of Mitigated Findings of No Significant Impact" into a revised Supplement or the Final PEIS. Adopting this recommendation would address many of the needs of the DPEIS regarding mitigation and monitoring.

Existing NEPA requirements, project design elements, mitigation, monitoring, and adaptive management mechanisms currently proposed in the DPEIS are inadequate to provide full protection for desert resources and compensate for harm. Full integration of the CEC recommendations will require BLM to amplify and modify numerous provisions of the DPEIS that are inconsistent with that guidance--or simply do not address the measures and steps articulated in the guidance as appropriate when addressing mitigation and monitoring in a NEPA analysis.

Additionally, we recommend the DPEIS incorporate robust measures for both monitoring and adaptive management. Monitoring assesses the actual (as distinct from projected or predicted) impacts of solar development, and demonstrates the success or failure of measures designed to avoid, minimize or offset impacts, and allows BLM to craft and impose adaptive measures to correct harm.[4]

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[4] As stated in BLM's guidance on preparing NEPA analyses: "In a record of decision (ROD), a monitoring and enforcement program shall be adopted and summarized where applicable for any mitigation (40 CFR 1505.2(c)). The ROD must identify the monitoring and enforcement programs that have been selected and plainly indicate that they were adopted as part of the agency's decision (see Question 34c, CEQ, *Forty Most Asked Questions Concerning CEQ's NEPA Regulations, March 23, 1981*). The ROD must delineate the monitoring measures in sufficient detail to constitute an enforceable commitment, or incorporate by reference the portions of the EIS that do so (see Question 34c, CEQ, *Forty Most Asked Questions Concerning CEQ's NEPA Regulations, March 23, 1981*). "

Creating a Mitigation Framework: The Mitigation Hierarchy

The Nature Conservancy believes that BLM can devise and implement mitigation protocols that benefit both people and nature. We have learned in our experience as land managers that conservation and human uses can co-exist when human uses, such as solar energy development, observe a common sense and practicable mitigation hierarchy based on avoidance, minimization, and mitigation (offset) of harm. The DPEIS and the SDPEIS are largely silent on many aspects of the mitigation hierarchy; the intent of our recommendations is to demonstrate how BLM can use the mitigation hierarchy as the basis of a solar energy program.

Critically, in the formulation of a mitigation framework for solar energy development, one foundational conclusion must be drawn from in the DPEIS: current utility-scale solar technologies permanently eliminate habitats and displace species, as well as eliminate all other uses of BLM-administered lands. As a result, on-site mitigation is largely impossible, leaving off-site mitigation the primary (if not the only) option. This is a significant oversight and lost opportunity within the DPEIS/SDPEIS- the final Solar Programmatic EIS must have a robust mitigation offset program, a program that seeks a "no net loss" baseline in terms of both acres and habitat values, based on identification of lands (public and private) of high ecological value that could be available and used to mitigate ecological impacts.

The Mitigation Hierarchy: Avoidance and Minimization

In the first step, avoidance, the mitigation hierarchy calls for solar energy facilities to be sited in locations that avoid the most ecologically important and/or sensitive habitats entirely. Per earlier comments, we applaud BLM for significantly improving avoidance in the SDPEIS (please see our comments in *Role and Use of Landscape-scale Ecological Assessments* and *Adding New or Modifying Existing Solar Energy Zones)*. We reiterate our recommendation that BLM use landscape-scale ecological assessments to identify and avoid areas and associated species and habitats that are ecologically core, sensitive and/or intact. Further, to successfully ensure and maintain ecological viability across the arid and desert Southwest, in addition to the Revised Areas of Exclusion in Table 2.2-1, and to specifically delineate Section D 3.3, "Additional Locally Relevant Screening Criteria, " we recommend that the following

areas be specifically avoided (i.e., included in Table 2.2-1) for solar development:

1. Ecologically Core lands identified in The Nature Conservancy's 2010 Mojave Ecoregional Assessment;

2. Category A lands identified in The Nature Conservancy's 2009 California Sonoran Assessment;

3. For areas outside of the Mojave and Californian Sonoran, portfolio sites identified in The Nature Conservancy's "first generation" of ecoregional assessments, completed between 1996 and 2005, which collectively represented the best remaining areas to conserve an ecoregion's full array of biodiversity, including natural communities as well as the rare, unique and endemic species that may have very specific habitat requirements.

Additionally, we recommend BLM revise the proposed SEZs in the SDPEIS so that they do not include these important conservation lands - please see the Appendix for our comments and detailed assessment of proposed SEZs.

In the second step of the mitigation hierarchy, minimization, facilities should be sited and operated in a manner that avoids or minimizes harm to habitats and species. This means identifying, developing, and employing BMPs that have been determined to be applicable to a given solar energy project and that actually limit harm to habitats and species. These BMPs would also specify which monitoring and enforcement mechanisms are applicable and should be adopted. Adaptive management should also be included in the BMPs to allow project modification based on the results of monitoring the actual, as distinct from projected, ecological impacts of the solar energy project, taking into account variances over time from the ecological conditions that may have been initially presumed to be stable over the projected life of the project. Please see our recommendations under *Best Management Practices* for more detail.

The Mitigation Hierarchy: Offset of Unavoidable Impacts - A Compensatory Mitigation Program

For those impacts that cannot be avoided or minimized, effective measures must be taken in the face of unavoidable negative impacts to affected habitats and species to ensure viability of species and habitats over time. A successful mitigation framework established in the DPEIS must a way to offset impacts,

i.e. a compensatory mitigation program, that is adaptable to differences in SEZs, individual projects and technologies. It must reflect varying availabilities of private lands. It must account for the full cumulative impact of projects across a landscape, and be at a sufficient scale to ensure ecological viability. It must be as enduring and long-lasting as the impacts, i.e. in perpetuity.

To ensure unavoidable impacts are fully offset, the Conservancy recommends that BLM establish an off-site mitigation program within the mitigation framework that, in addition to acquisition of private lands, allows mitigation on BLM-administered lands where impacts cannot be addressed through acquisition and long-term management of private lands; allows "mitigation banking" on BLM-administered lands where conservation designation and/or management can achieve mitigation needs/outcomes relative to specific impacts to habitats and associated species; ensures adequate funding over time to achieve mitigation outcomes; creates third party-managed endowments of mitigation funds to manage and direct mitigation investments and activities; and ensures monitoring and adaptive management to ensure mitigation is adequate relative to impacts over time.

Adequate mitigation is unlikely to be achieved by attempting to treat each project, and the required offsets of that project, separately. This "one off" approach historically has resulted in a patchwork of small "mitigation offset" sites that are of insufficient scale and connectivity to be ecologically viable, or to actually fully offset impacts over time. We recommend the DPEIS explicitly address the need to focus mitigation investments (offsets) from a number of projects collectively to increase the likelihood of actually achieving an effective and enduring offset of ecological impacts, along with establishing priority mitigation areas to focus mitigation investments will also greatly facilitate future NEPA analysis of future proposed SEZs or projects, provide more certainty and predictability for developers, and will result in the expedited production of solar energy. Through its recommendation to create "regional mitigation plans" as outlined in the SDPEIS, we believe that BLM has provided an avenue to develop a robust compensatory mitigation program.

Following are the Conservancy's specific recommendations on the elements of an off-site, compensatory mitigation program as the basis of regional mitigation plans, including recommendations on how BLM could "build-out" and test the elements, while ensuring robust stakeholder involvement.

Elements of a Regional Mitigation Plan

A regional mitigation plan encompasses a robust compensatory mitigation program that consists of the following six elements:

1. An ecological baseline upon which unavoidable impacts are assessed.

   What is the current ecological status of the landscapes to be developed? What is the habitat quality and level of intactness, where do the species occur and what is their population status and viability? What species are rare, sensitive, endemic, threatened, endangered? What are the aquatic, surface water and groundwater resources and what is their status? Where are the wildlife migratory corridors, where is connectivity of habitats critical in the face of climate change? What ecological trends are underway and how do we expect them to impact species and habitats?

   The information and data to inform these and other questions form the ecological baseline from which to assess the impacts, both site specific and cumulative, from solar energy development. Obviously, this baseline is not static – in addition to solar energy development many other factors are at play that will influence the baseline one way or another for specific species and habitats over time. Thus, to the extent feasible, new data and analysis need to be incorporated into the baseline to ensure its viability.

   To ensure an adequate (and efficient) ecological baseline, we recommend:

   a. BLM commit to using existing, best available science as the basis for the landscape scale (and finer scale) ecological baseline, and specifically analyses to support the DPEIS, BLM REA's, the CA DRECP, the BLM West Chocolate Mountains EIS, the BLM Restoration Design Energy Project in Arizona, existing RMPs, existing HCP and Biological Opinions, State Wildlife Plans, and assessments listed in Appendix D under D.3.3 (those not listed here). This is in truth not as daunting as it might seem, as many of these efforts overlap and borrow from one another
   b. BLM commit to a "process" to incorporate new landscape scale (and finer scale where appropriate) ecological data as it becomes available to ensure the ecological baseline

reflects the best available science and changing conditions of the landscape(s). BLM's AIM seems a logical, appropriate vehicle to do this, as well as any efforts to identify and create new zones.

2. A mechanism to assess & quantify unavoidable impacts over the life of the impacts.

   There is a large and growing body of work to develop mechanisms or methodologies to assess impacts from development. BLM has participated in the development of several, and a wide array created by BLM, other federal and state agencies, academia, consultants, etc. have been used to assess impacts on BLM-administered lands. Whatever methodology BLM commits to using, it should be transparent, meaning not a "black box," and based on best available scientific techniques. It should capture impacts beyond those to federal and state ESA-listed species, BLM Species of Concern and Sensitive Species, and habitats protected under the Clean Water Act. It must be able to specifically capture cumulative impacts, and the temporal nature of impacts, i.e. over the life of the impact (likely in perpetuity). Most importantly, BLM should commit to **one** methodology and ensure that it is used consistently by all BLM jurisdictions for every solar energy project.

3. A methodology to translate the impacts into dollars, i.e. mitigation investments – including sufficient funding to manage and monitor the mitigation investments.

   Similar to (2.) above, extensive work has gone into and continues occur to develop methodologies to translate ecological impacts into dollars or mitigation investments and actions, often as part of a methodology to assess ecological impacts. Again, it should be transparent, BLM should commit to one and ensure it is consistently used by all BLM jurisdictions for every solar energy project.

   Importantly, the costs of assessing the impacts, and the monitoring and managing the mitigation investments over the life of the impacts needs to be included in the cost of mitigation, and thus the amount of mitigation investment that the developer is responsible for. However, the costs of mitigation cannot be so high, or unreasonable, that development cannot occur – a key facet is to avoid impacts to areas that are "unmitigatable," i.e. ecological resources that cannot be replaced or are extremely rare, or

where the impacts are so extensive as to drive the costs of mitigation to a level beyond a reasonable level.

4. A structure to hold and apply mitigation investments.

   This should be a 3rd party arrangement (BLM cannot hold mitigation funds) with fiduciary responsibility (and demonstrated fiduciary experience) to hold, manage and allocate mitigation investments. At a minimum, structures should be regionally/landscape or state based to ensure mitigation investments are responding to impacts on the specific landscape being impacted. We recommend, at a minimum, representation by BLM, State F&G agencies, and the USFWS. However, we believe in and recommend involvement by key stakeholders, in some sort of advisory and oversight role, i.e. counties, conservation community, industry, sportsmen/recreation, etc.

5. A prioritization, e.g. conservation plan, as to where and how mitigation investments should be made.

   Where and how should mitigation investments be used to ensure the highest return on investment? What "tools" should be used to implement mitigation, i.e. land acquisition, withdrawing BLM-administered lands from other uses, changing land designations or uses, restoration, mitigation banks, etc. How are conservation priorities established, especially relative to potential impacts?

   At a minimum, we recommend BLM develop a regional conservation plan for each region or landscape that will have impacts, i.e. for each regional mitigation plan. BLM should use existing, best available plans as the basis for establishing conservation priorities, i.e. BLM RMPs, the CA DRECP, State Wildlife Plans, HCPs, County land use plans, etc. Each conservation plan should seek to prioritize actions to address conservation priorities to achieve the best conservation return on investment.

   N0te, mitigation investments, to the greatest extent practicable, should be additive to existing and/or other required conservation management actions BLM is responsible for to maintain the ecological health of our public lands.

6. Monitoring to ensure mitigation investments are adequate relative to impacts over the life of the impacts, with a feedback loop to ensure the mechanism to assess and quantify the impacts and the methodology to translate the

impacts into mitigation investments adequately reflect sufficient mitigation.

Monitoring and adaptive management are key to a successful mitigation program. We recommend BLM establish an adaptive management program (i.e. specifically implement AIM across the region) with long term monitoring and specified triggering conditions for modifications to existing approval conditions. To be effective, adaptive management requirements must be backed by solid developer financial assurances and require alteration in plant-specific and solar program mitigation and design requirements where adverse impacts exceed original estimates, without requiring a formal permit modification process. This requires BLM adopt a formal program to require plants to monitor and report adverse effects and then adaptively alter plant actions, ensuring that new data and lessons learned about the impacts of solar energy projects will be reviewed and incorporated on an ongoing basis into **both** existing individual plant authorizations and into the overall solar energy program.

Note this is not to seek additional mitigation from the developer for a specific project once mitigation has been established. This is solely to ensure that the mechanisms are adequate for mitigation of future projects, while also updating the ecological baseline.

Building and Testing a Regional Mitigation Plan and Compensatory Mitigation Program

Mitigation is a conundrum BLM faces on a regular basis, it is by no means limited to solar energy development. To flesh out the elements of a compensatory mitigation program such that BLM could incorporate appropriate input into the DPEIS, we recommend BLM work with key stakeholders with experience in the science of developing and implementing mitigation and mitigation programs via a workshop or series of workshops. Specifically, the workshop(s) would address:

a. Which methodology or mechanism would best suit BLM's needs to assess impacts?
b. Which methodology or mechanism would best suit BLM's needs to translate impacts into dollars, i.e. mitigation investments?
c. What should a conservation plan contain, and what process would best serve to manage and update it?

d. What are the best examples of 3rd party fiduciary structures to manage and deliver mitigation investments?
e. What are the array of "tools in the toolbox" to accomplish mitigation on the ground?

These are just some of the issues a workshop would or could seek to elucidate. The workshop need not focus specifically on the Solar PEIS, though could certainly capture specific, unique elements of solar development to ensure BLM is receiving needed input as it moves forward in developing regional mitigation plans and a compensatory mitigation program under the Solar PEIS.

Additionally, BLM should initiate two pilots for advance regional mitigation planning, one for the Riverside East SEZ and one for the Amargosa Valley SEZ. These pilots should focus on identifying areas that should not be developed within the SEZ (avoidance), BMPs specific to that SEZ (minimization), an evaluation of what restoration is likely to be effective within the SEZ, given the vegetation communities within the SEZ (restoration) and , finally, on developing each of the six elements to plan for compensatory mitigation. We believe that the Riverside East SEZ should be a pilot project given the number of applications already proposed in the SEZ and the benefit that a comprehensive mitigation plan could provide. Furthermore, the regional SEZ mitigation planning for Riverside East should be folded into the Desert Renewable Energy Conservation Plan. Lastly, there have already been some issues identified with a sensitive and geographically limited vegetative community within the Riverside East SEZ: microphyll woodlands. A Riverside East SEZ mitigation pilot will provide the opportunity to establish the type of assessment that is necessary in determining the level of impact acceptable for a sensitive and geographically limited ecological resource. In particular, the pilot project should evaluate the potential for compensatory mitigation to offset impacts to microphyll woodlands. If the analysis finds that there are likely not enough microphyll woodlands on private lands that could serve as mitigation, this vegetative community would need to be avoided as part of the mitigation framework. The Amargosa Valley SEZ is also an important area for a pilot project, in particular because it will serve as an example of how to analyze and address sand transport and sand source issues as well as a critical opportunity to establish SEZ-specific groundwater extraction BMPs, including monitoring, modeling and mitigation protocols.

Management of Pending (Existing) Applications

Since 2008, solar energy developers have filed hundreds of ROW applications covering millions of acres of BLM-administered land in the DPEIS study area. In the California Desert District alone, there were at one time more than one hundred "active" solar development applications covering more than 600,000 acres. The need for a programmatic review of potential solar energy development was evident.

With the release of the DPEIS, opportunities arose to better review and manage existing applications (those submitted prior to June 30, 2009) and new applications (those submitted between June 30, 2009 and the date that the ROD for the final PEIS is signed). The approach for managing these existing and new applications is fundamental to meeting the Secretary's vision as he described it on June 29, 2009: "This environmentally-sensitive plan will identify appropriate Interior-managed lands that have excellent solar energy potential and limited conflicts with wildlife, other natural resources or land users…with coordinated environmental studies, good land-use planning and zoning and priority processing, we can accelerate responsible solar energy production that will help build a clean-energy economy for the 21st century."

Both existing and new applications have the potential to make meaningful progress toward building the clean-energy economy captured in the Secretary's vision. However, these applications also have the potential to undermine or conflict with the environmental, land-use planning and zoning vision that the Secretary articulated. The goal of BLM in reviewing existing applications should be to approve solar energy developments in a manner consistent with the vision and objectives of a final PEIS (as it would be for new applications). To accomplish this, and to improve management of all applications, new and existing, we offer the following recommendations.

Pending Right-of-Way (ROW) Applications

The SDPEIS states that BLM will continue to process pending applications in an effort to facilitate *environmentally responsible* solar energy development (emphasis added). This is an important guiding principle for the type of approach that The Nature Conservancy is advocating. Our recommendations below are intended to provide criteria for prioritizing and processing pending applications that have the greatest likelihood of

successfully being permitted and that will meet the goal of being environmentally responsible. At the same time, our recommendations include criteria that will flag projects that are likely to cause a high degree of conflict and, consequently, should be denied. This approach will facilitate BLM's ability to focus its capacity on the critical components of building a long-term solar program: applications within the zones, the creation of new zones and regional mitigation planning for each SEZ.

In an effort to find common ground with the industry, we recommend that the pending applications listed in the SDPEIS should be processed under current rules, not new rules as suggested by the SDPEIS (unless they reflect existing rules and/or IMs) or those codified in a PEIS ROD. Some of the existing applications make us distinctly uncomfortable; however, we believe the NEPA process for these applications will ensure that only the best projects will go forward.

In screening these projects using existing guidance, the best available information and data should be used to determine if a pending application will cause a high degree of conflict or if it is likely that it will impact an area that is important at a landscape scale. If the analyses that BLM conducted to determine exclusions areas in the SDPEIS or Final PEIS have identified areas that present a high degree of conflict or landscape-scale importance, these analyses (and not the designation of excluded lands) provide the basis for rejecting inappropriately sited existing applications.

In addition, there are four categories we recommend for immediate rejection of ROW applications:

1. All pending applications determined by the BLM to be in "high-conflict" areas, per the environmental screens proposed by the California Desert and Renewable Energy Working Group in December 2010;
2. Pending applications that meet the criteria for "High Potential for Conflict" described in IM 2011-061 (BLM 2011b);
3. Pending applications proposed in an area that is identified as core to meeting landscape-scale goals for conservation. Solar energy facilities should not be sited in locations that contain the most ecologically important, sensitive or intact habitats. A robust, landscape-scale ecological assessment should be the basis for identifying avoidance areas or areas where applications will not be accepted. The Nature Conservancy has already completed landscape-scale

analyses in each of the ecoregions considered in the DPEIS. **To successfully maintain ecological viability across the arid and desert Southwest US, we recommend that applications in the following areas be rejected (i.e., included in the areas identified as inappropriate for solar development):**

a. Ecologically Core lands identified in The Nature Conservancy's 2010 Mojave Ecoregional Assessment;
b. Category A lands identified in The Nature Conservancy's 2009 California Sonoran Assessment;
c. For areas outside of the Mojave and Californian Sonoran, portfolio sites identified in The Nature Conservancy's "first generation" of ecoregional assessments, completed between 1996 and 2005, which collectively represent the best remaining areas to conserve an ecoregion's full array of biodiversity, including natural communities as well as the rare, unique and endemic species that may have very specific habitat requirements;

4. Right of way applications that were filed after June 30, 2009 on lands that BLM excluded from solar development in the Draft PEIS, except where a more recent application is filed to partially relocate an existing project application to a nearby area to avoid conflicts.

Finally, because the BLM has limited capacity to process existing applications and implement a new solar program (e.g., evaluate and designate new solar energy zones, complete regional mitigation planning,), BLM should prioritize their efforts to focus first on processing existing applications within established SEZs and then existing applications that appear to present low conflict.

New ROW Applications

All New ROW applications (those not listed in the SDPEIS as pending applications) submitted should receive no further processing until the ROD for the PEIS is signed, when then become subject to the terms of the final Solar PEIS. Finally, we recommend that no new applications be accepted from this point until the record of decision (ROD) is signed for the final Solar PEIS. Precluding new applications will eliminate confusion for new applicants and give BLM the opportunity to complete pending applications.

Comments on the Preferred Alternative: The Variance Process

The Nature Conservancy is supporting the modified SEZ program alternative in SDPEIS for the reasons expressed earlier in this document - this alternative allows for near term development through the processing of the existing applications both inside and outside of zones, promotes additional applications in existing zones and includes a process for the creation of new zones. Combined, these three paths allow for quickly moving forward to meet our clean energy goals while also protecting the ecological values and other uses of public lands.

We do not support the modified Solar Energy Development Program alternative for a number of reasons. Most importantly, the variance process opens up far too much ecologically important land to potential development and would be likely to result in scattering projects across the landscape, fragmenting Southwest desert habitats. Pursuit of variance applications will strain BLM's already stretched staff resources, diverting the agency from processing zone-based applications that will benefit from advanced development and mitigation planning, and from establishing new zones to ensure robust development of solar energy on BLM-administered lands. Variance applications will also significantly complicate transmission planning. In sum, creation of a variance process that is not carefully limited will undercut and denigrate the zone-based approach that will speed approvals of projects sited in low conflict locations that SEZ represent and that BLM has strived to create.
If it is included, the variance process needs to be structured in such a way as to support the implementation of a zone-based approach. Variance applications must remain circumscribed exceptions, and areas within which variance applications will be accepted reined in by far tighter criteria that those used in creating SEZs. These stricter standards are needed to ensure that both the developers and the agency focus planning, siting and permitting resources on appropriate SEZs. BLM can then apply its limited capacity towards planning for directed development within SEZs, the creation of new SEZs as needed, and on regional mitigation for the anticipated unavoidable impacts.

The Nature Conservancy asserts that the variance process, if implemented, should maintain ecological viability across the arid and desert Southwest US by accepting and processing only exceptional project applications in areas with low ecological resource values, the least possible conflicts with other important uses, and posing minimal conflicts with adjacent

lands. Accordingly, we recommend that the following areas be excluded from lands open to variance applications:

1. Ecologically Core lands identified in The Nature Conservancy's 2010 Mojave Ecoregional Assessment;

2. Category A lands identified in The Nature Conservancy's 2009 California Sonoran Assessment;

3. For areas outside of the Mojave and Californian Sonoran, portfolio sites identified in The Nature Conservancy's "first generation" of ecoregional assessments, completed between 1996 and 2005. These sites collectively represent the best remaining areas to conserve an ecoregion's full array of biodiversity, including natural communities as well as the rare, unique and endemic species that may have very specific habitat requirements.

4. Lands with wilderness characteristics outside Wilderness and Wilderness Study Areas that have been identified in an updated wilderness characteristics inventory.

5. Sensitive habitat areas, including priority sage grouse habitat, riparian areas, or areas of importance for Federal or state sensitive species.

6. Wildlife Habitat Management Areas (WHMAs) established by the BLM in its management plan for the California Desert Conservation Area, and subsequent amendments to the plan.

7. Sand transport corridors and sand source areas.

8. Dissected fans across range of the threatened desert tortoise[5]

9. In California and Nevada, the Ivanpah and Pisgah Valleys.

10. In Nevada, seven spring landscapes: Amargosa Desert, Railroad Valley, White River Valley, Pahranagat Valley, Upper Muddy River, Steptoe Valley and Soldier Meadow.[6] These seven landscapes capture almost 100 biologically important species dependent upon spring ecosystems.

[5] As described in the biological opinions for the Blythe, Genesis and Desert Sunlight solar projects in California.
[6] As mapped in the Nevada Springs Conservation Plan (Abele, 2011).

11. All exclusion areas listed in Table 2.2-1 in the SDPEIS.

12. Any areas identified under "Additional Locally Relevant Screening Criteria" as outlined in the SDPEIS in Appendix D, D.3.3.

We strongly support that protection for desert tortoise habitat and populations in the variance process should be a requirement rather than a factor to be considered. While we believe that Option 2 lays out some important factors in this requirement, we would recommend that the requirement take into consideration desert tortoise habitat in addition to density in defining exclusion areas.

For variance projects seeking sites in areas overlying desert groundwater aquifers where projects will rely on groundwater withdrawal it is critical that the variance process, if adopted, take into consideration the state of each groundwater basin and require variance applications to recognize and address conflicts related to groundwater pumping. In basins or aquifer systems that are presently over-appropriated and/or in overdraft, those in which cumulative groundwater pumping is now or reasonably anticipated to be in excess of sustainable yield, or those in which groundwater pumping may have adverse impacts, even over very long time periods, on groundwater-dependent ecosystems, variance applications should be considered only where the applicant conclusively demonstrates that its proposed levels of groundwater withdrawals will not cause or contribute to any long term[7] adverse effects on aquatic, phreatophytic or riparian resources ,and its withdrawals will be more than offset by a net improvement in the quantity and quality of basin or aquifer system groundwater resources through sufficient mitigation.

For those basins or aquifer systems in which groundwater hydrology is not sufficiently understood to model and provide reasonable assurances of the long term[8] effects of withdrawals, project proposals under the variance process should include a commitment by the applicant to fund adequate studies to determine those effects as well as a commitment to accept permit limitations that condition its continued use of groundwater or mitigation requirements to more than offset impacts based on the outcome of the studies.

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[7] In this context, long-term refers to the longer of 200 years, or the period over which adverse groundwater effects may occur.

We also recommend that BLM reduce variance application areas designated in the SDPEIS, particularly in Nevada. DOI and BLM noted strong opposition to the Program Alternative in summarizing the 80,500 comments it received on the DPEIS. Much of the opposition focused on the large number of inappropriate acres the program would open to solar development across the Southwest. The variance process proposed in the Supplement has only slightly less acreage available for applications across the six-state region (with 20,324,863 acres available for applications rather than 21,581,154 acres). While the agency's proposal provides some additional guidance on factors to be considered in approving variance applications, the SDPEIS actually increases the acres open for potential development in Nevada over what was considered in the DPEIS (9,207,288 acres under the variance process, up from 9,084,050 acres open under the DPEIS's Solar Program alternative). Opening more than nine million acres for development in Nevada will actively discourage a directed development program based on SEZs. Based on the maps in the SDPEIS, it also appears to open up every single valley in the southern basin and range system for development. Protecting the intact connectivity that links one range to another through an intact basin provides many important values. These intact systems are important wildlife corridors and are areas that will be critical for the adaptation of plants and animals given climate change. Spring systems especially, with their highly restricted endemic populations of native fishes and spring snails are particularly at risk with such expansive development and contrary to the recommendations recently advanced by the Nevada Springs Conservation Plan (Abele, 2011). Presumably, development of power lines at the proposed scale would provide ravens with a vastly higher number of perch sites and facilitate their predation on desert tortoise. Finally, by opening up this many acres to potential development, the BLM would be putting at risk the Nevada dune beardtongue, the distribution of which overlaps with the variance acreage by approximately 61%. The BLM should complete a Nevada dune beardtongue conservation plan and remove specific areas from the variance process to ensure the viability of this sensitive plant species.

Appendix: Ecological Analysis of the Supplement to the Draft Solar PEIS Alternatives

The SDPEIS proposes three alternatives for managing solar energy development on BLM-administered lands in six southwestern states over the next 20 years. The Nature Conservancy has assessed how the proposed alternatives could affect biological diversity by using spatially explicit information about the conservation value of lands and waters derived from ecoregional assessments. Completed by the Conservancy and its partners, these ecoregional assessments collectively cover the Mojave Desert Ecoregion and the portion of the Sonoran Desert Ecoregion contained within California. The assessments permit the Conservancy to provide probative, science-based comments on the SDPEIS within these regions.

Ecoregional assessments are comprehensive and systematic efforts to identify conservation priorities. The "first generation" assessments, completed between 1996 and 2005, identified "portfolios" of sites that collectively represented the best areas to conserve representative plants, animals, and natural communities on lands within an ecoregion. More recently completed "second generation" assessments, including the updated Mojave Desert Ecoregional Assessment (2010) and the Framework for Effective Conservation Management of the Sonoran Desert in California (2009), used the same basic methodology as the first generation assessments but differed by providing "wall-to-wall" classification of all land in these regions into one of four conservation value categories based upon the presence of ecologically representative species and natural communities coupled with the quality of habitat: Ecologically Core, Ecologically Intact, Moderately Disturbed and Highly Converted. These second generation assessments were designed to inform regional land use planning in addition to identifying regional conservation priorities. For more information on the approach used to conduct the second generation assessments, see Randall et al. (2010; http://conserveonline.org/workspaces/mojave/documents/mojave-desert-ecoregional-2010/@@view.html).

Acres Opened for Development

Drawing upon the second generation assessments, the Conservancy began its analysis of the proposed alternatives in the SDPEIS using the Reasonably Foreseeable Development Scenario as defined

in the original DPEIS and reiterated in the SDPEIS. This scenario projects a need for 214,119 acres of BLM land and 71,370 acres of other lands for solar energy development in the 6 states by 2030. The amount of BLM land available for Right Of Way (ROW) applications would be much greater than this scenario requires under all three alternatives presented in the SDPEIS: by a factor of over 450 under the No Action Alternative (97,921,069 acres), by a factor of nearly 100 under the Modified Solar Energy Development Program (Modified Program) Alternative (20,324,863 acres), and by more than 71,000 acres under the Modified Solar Energy Zone Program (SEZ) Alternative (285,417 acres). Even recognizing the flexibility needed by developers in siting, it appears that the Modified Program and the No Action proposed alternatives still open far more acres of publicly owned land for solar development than is necessary.

The consequence of opening an excess of acres to development is placing more core ecological areas at risk of conversion and degradation. Within the Mojave Desert Ecoregion and the Sonoran Desert of California, the No Action Alternative would expose over 3.4 million acres of Ecologically Core lands to solar development (Table 1). Ecologically Core lands are those identified as having the highest conservation value by the Nature Conservancy and partners. The Modified Program Alternative would open nearly one million acres of Ecologically Core lands to potential solar development, over 28% of the land that would be open to ROW applications within these regions. Within California and Nevada, the SEZ Alternative exposes a total of 172,421 acres to ROW application, of which 51,948 acres (over 30% of the total area of the SEZs within this region) overlaps with Ecologically Core areas. While the SEZ alternative exposes a substantial area of the highest conservation lands to development, the total area of these lands is far less than those exposed under the Modified Program Alternative or the No Action Alternative.

The high degree of ecological intactness of the Mojave Desert Ecoregion and the Sonoran Desert of California, along with the presence of representative species and natural communities in numerous locations, led the Nature Conservancy to designate a significant portion of these desert regions as either Ecologically Core or Ecologically Intact. Large expanses of this landscape are mostly undisturbed, and together they constitute one of North America’s last great wilderness areas. Disturbance of these desert areas through solar development could have significant and long-lasting impacts on the ecological function

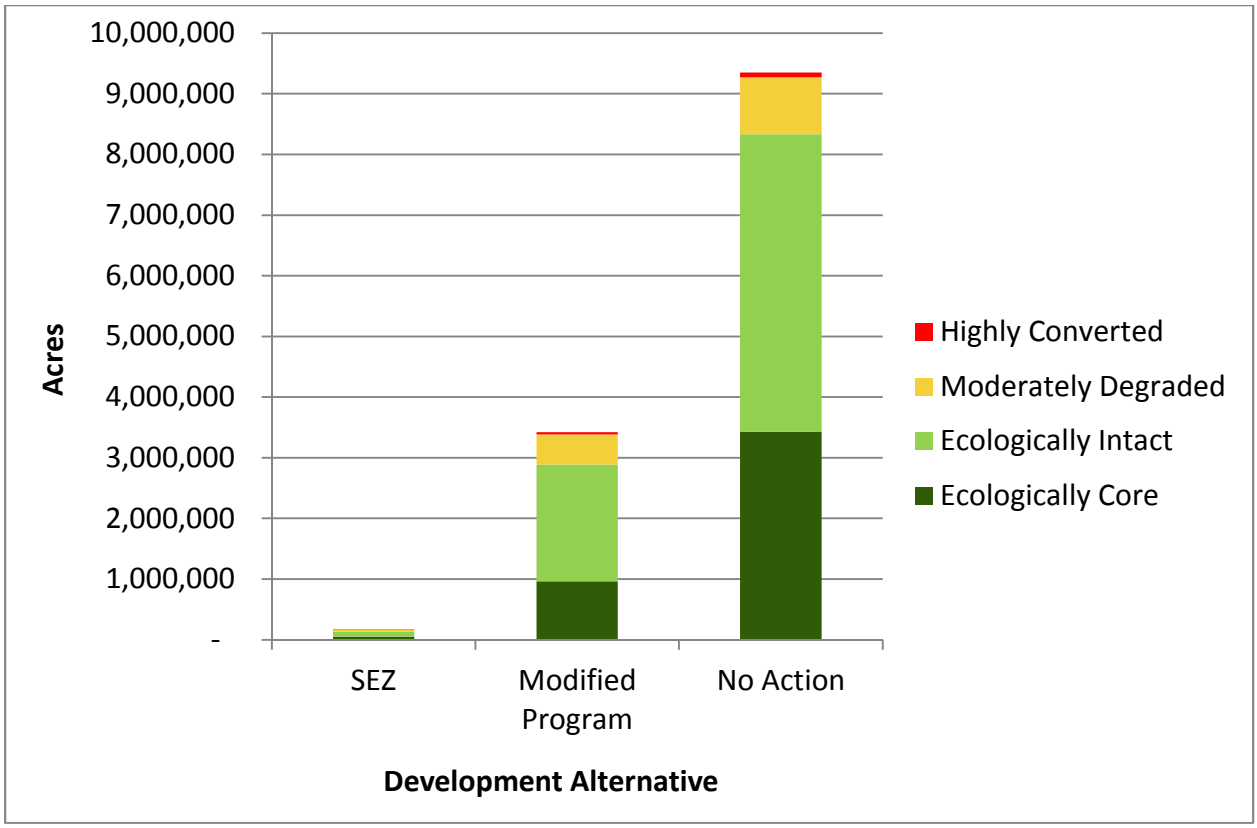
of the larger system, in addition to consequences for species viability throughout these desert regions.

Table 1. Conservation Values of the Lands Available for ROW Applications in the Mojave Eco-region (California and Nevada)and the California Sonoran under the Three Alternatives

SDPEIS Alternatives	Ecologicall y Core	Ecologically Intact	Moderately Degraded	Highly Converted	Grand Total
Modified SEZ	51,948	83,937	36,090	446	172,421
Modified Program*	962,369	1,923,417	498,928	36,437	3,421,151
No Action*	3,424,451	4,906,470	939,918	77,798	9,348,637
SDPEIS Alternative	**Ecologicall y Core**	**Ecologically Intact**	**Moderately Degraded**	**Highly Converted**	
Modified SEZ	30%	49%	21%	0%	
Modified Program	28%	56%	15%	1%	
No Action	37%	52%	10%	1%	

*SEZ areas are not included in the analysis of lands under the Modified Program Alternative and No Action Alternative.

Figure 1. Acres of Land Available by Conservation Value Category for ROW Applications under the Three Alternativeslocated in the Mojave and California Sonoran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Acres
SEZ
Modified Program
No Action
Development Alternative
Highly Converted
Moderately Degraded
Ecologically Intact
Ecologically Core

Figure 2. Land Conservation Values: No Action Alternative

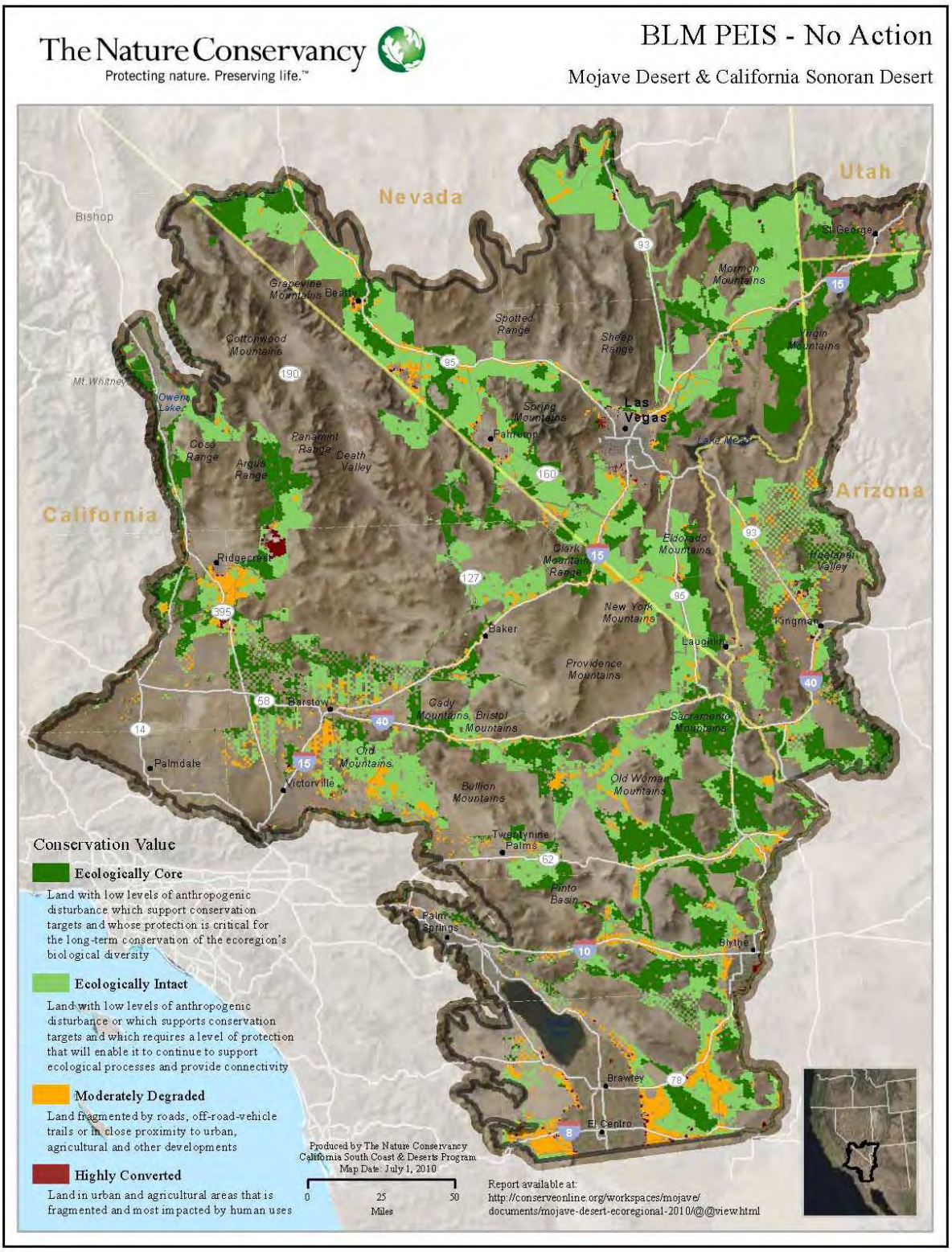


Figure 3. Land Conservation Value: Modified Program Alternative

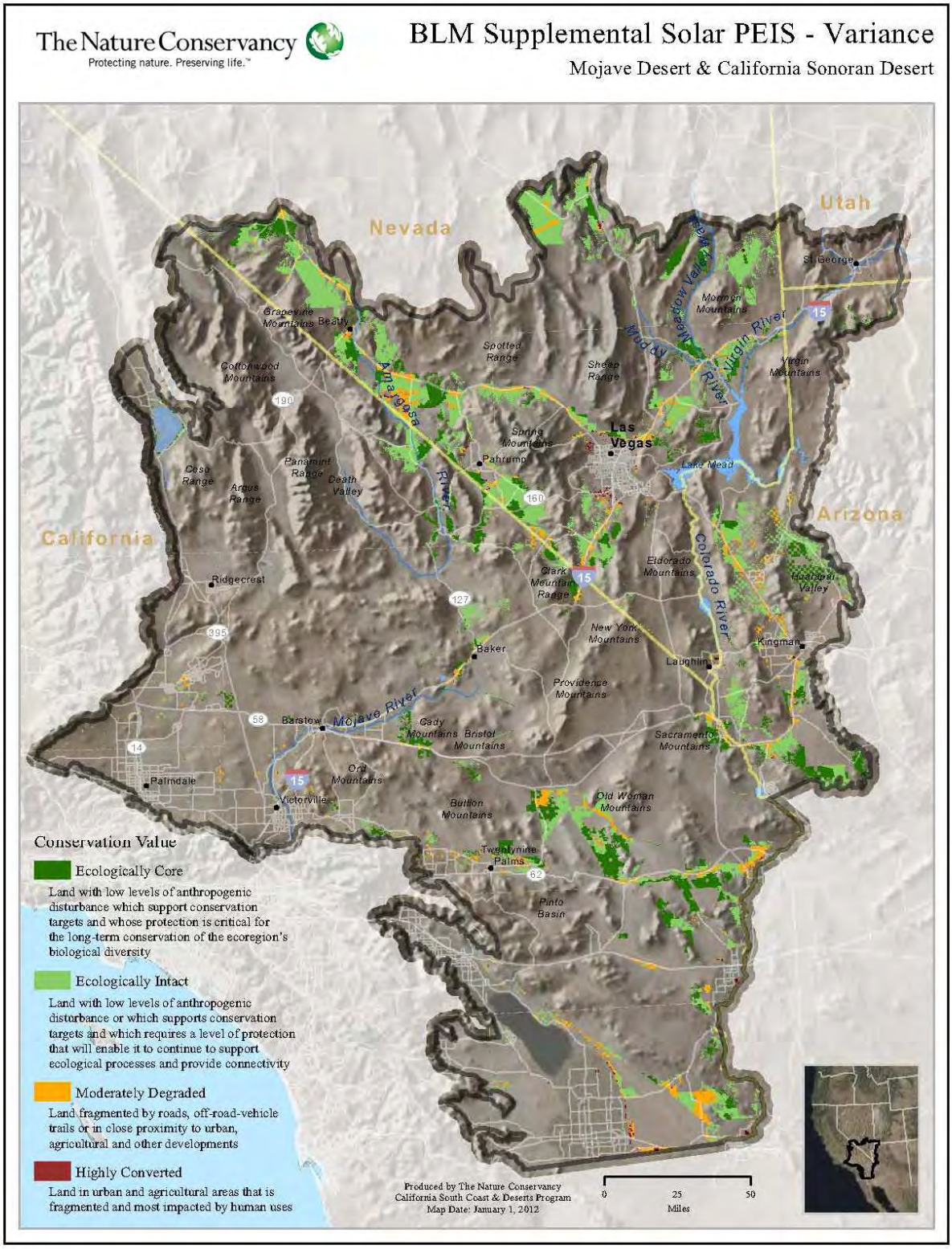
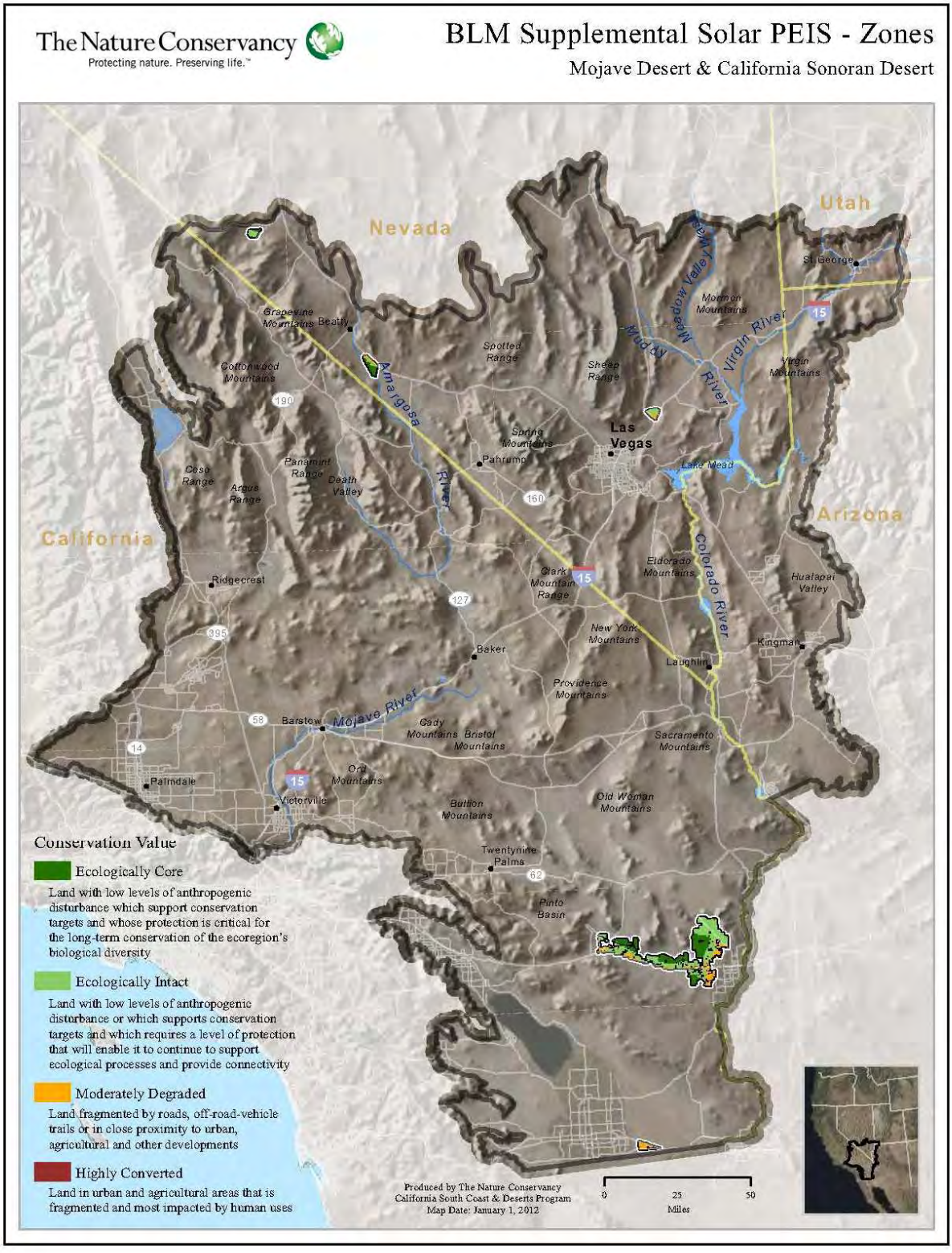


Figure 4. Land Conservation Value: SEZ Alternative



Solar Energy Zone Program Analysis

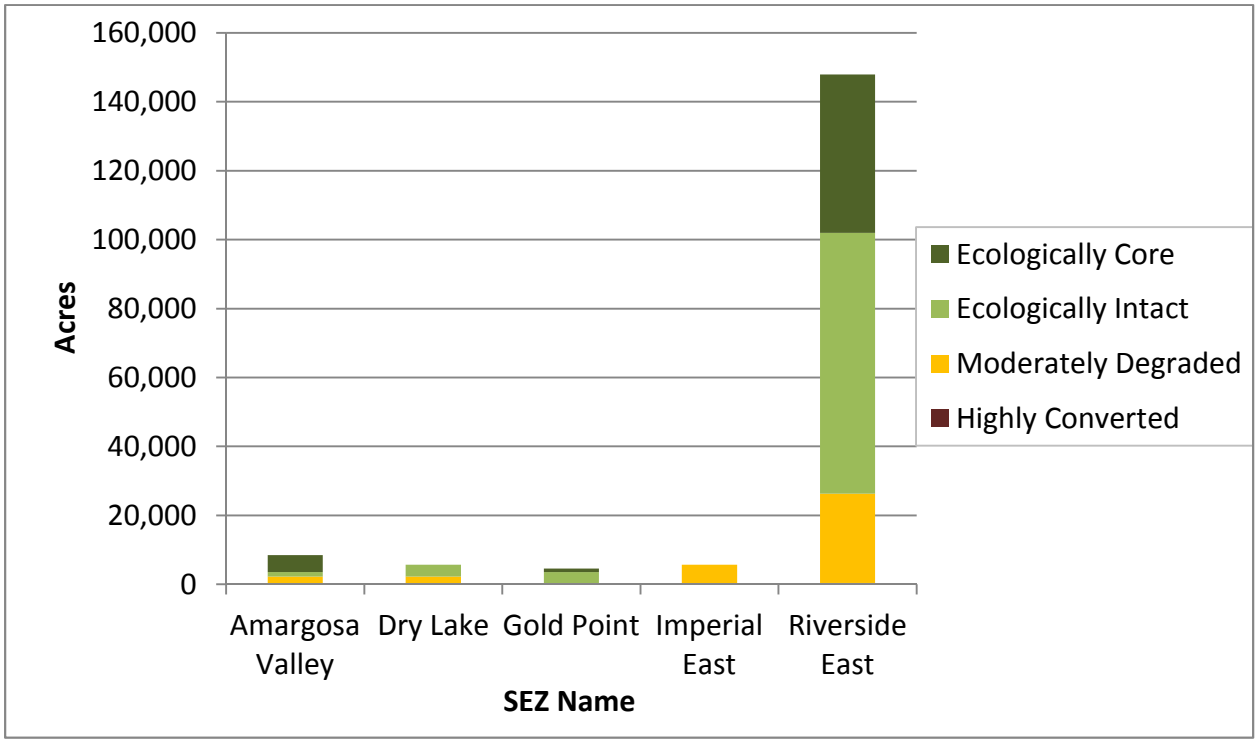
The 17 SEZs proposed in the SDPEIS would encourage grouping of solar energy facilities, reducing fragmentation and the need for new transmission lines relative to the more dispersed siting of facilities likely under the Modified Program Alternative or the No Action Alternative. SEZs also expose far less high conservation value land to ROW application than the other alternatives, and fewer federally listed species and other BLM Special Status Species to potential harm. Nonetheless, several of the proposed SEZs could be modified or replaced with other lower conservation value land to better avoid harmful impacts to biological diversity.

Although the Solar Energy Zone alternative has many advantages over the other alternatives, it still poses unnecessary threats to biological diversity, most of which could be eliminated or reduced by modifying or replacing specific SEZs. For example, 30% of the area of the SEZs proposed for the Mojave Desert Ecoregion and for the California portion of the Sonoran Desert falls on lands that were assigned to the highest conservation value category- Ecologically Core- in the second generation ecoregional assessments: (51,948 acres, 30%; Table 2 below; Figure 1). Large areas of the Amargosa Valley, Dry Lake, Gold Point, and Riverside East SEZs comprise these highest conservation value lands (Table 2).

Table 2. Acres of Land by Conservation Value Category for SEZs in the Mojave Desert Ecoregion and California portion of the Sonoran Desert Ecoregion and Overlap with Portfolio sites

SEZ Name	Ecologically Core	Ecologically Intact	Moderately Degraded	Highly Converted
Amargosa Valley	4,971	1,278	2,230	-
Dry Lake		3,468	2,249	-
Gold Point	1,062	3,535	-	-
Imperial East	-	-	5,622	96
Riverside East	45,915	75,656	25,989	350
Total	51,948	83,937	36,090	446
	(30%)	(49%)	(21%)	(0%)

Figure 5. Proportions of Land in each of the Four Conservation Value Categories for each of the Five Proposed SEZs Located in the Mojave Desert Ecoregion or the California portion of the Sonoran Desert Ecoregion.



Below we recommend that some of the proposed SEZs be replaced or modified to avoid damage to lands with high conservation values and use the following criteria to help identify lands that may be suited to replace these excluded areas or to add SEZs if the need arises:

1. Lands that have been mechanically disturbed, including areas classified as Moderately Degraded and Highly Converted in the Mojave and California Sonoran assessment, i.e. locations that are degraded and disturbed by mechanical disturbance, including areas that have been "type-converted" from native vegetation through repeated wildfires, plowing, bulldozing or other mechanical impact often in support of agriculture or other land cover change activities (mining, clearance for development, heavy off-road vehicle use)
2. BLM lands of comparatively low resource value located adjacent to disturbed and degraded private lands to allow for the expansion of renewable energy development onto private lands, with private lands development offering tax benefits to local government

3. Brownfields to revitalize idle or underutilized industrialized sites; existing transmission capacity and infrastructure are typically in place
4. Locations adjacent to urbanized areas that provide jobs for local residents often in underserved communities; minimize growth-inducing impacts; provide homes and services for the workforce that will be required at new energy facilities; and minimize workforce commute and associated greenhouse gas emissions
5. Locations that minimize the need to build new roads
6. Locations that could be served by existing substations
7. Areas proximate to sources of municipal wastewater for use in cleaning
8. Locations proximate to load centers
9. Locations adjacent to federally designated corridors with existing major transmission lines.

We also recommend that greater emphasis be placed on providing incentives for renewable energy development on disturbed private lands. In the Mojave Desert, BLM and other federal agencies land holdings are largely undisturbed and of high conservation value with nearly 5.5 million acres in Ecologically Core and Ecologically Intact status versus just 428,245 acres of Moderately Degraded and Highly Converted land (Table 3).

On the other hand, private lands in the Mojave are disproportionately disturbed and of lower conservation value with over 1 million acres of Moderately Degraded and Highly Converted land, more than double the acreage of lower conservation value lands held by BLM. This is particularly noteworthy because less than 15% of the land in the Mojave is in private hands, a lower percentage than any other U.S. ecoregion. Large areas of privately held, disturbed lands most suitable for renewable energy development are likely to be found in other ecoregions as well.

Table 3. Proportional Ownership of Land in Each Conservation Category

Category	BLM	NPS	DOD	USFWS	USFS	State	Tribal	Private	Other
Core	44.8%	27.4%	11.0%	2.5%	2.5%	2.2%	0.3%	8.1%	1.3%
Intact	52.7%	19.1%	11.9%	3.4%	0.2%	1.8%	0.4%	8.3%	2.1%
Degraded	29.1%	2.1%	17.0%	0.1%	0.5%	1.9%	0.7%	46.5%	2.1%
Converte	6.4%	0.3%	4.1%	0.1%	0.4	1.7%	1.4%	84.8%	0.9%

d					%				
Core & Intact	49.3 %	22.7 %	11.5 %	3.0%	1.2 %	2.0%	0.4%	8.2%	1.7%
Degraded & Converted	23.1 %	1.6%	13.6 %	0.1%	0.4 %	1.8%	0.9%	56.7%	1.8% [1]
[1]Rows total 100%									

SEZs in California and Nevada

The Nature Conservancy closely examined each of the proposed Solar Energy Zones in California and Nevada. More than half of the total area of the proposed SEZs is in California, where four SEZs have been proposed, including the largest: the Riverside East site (159,457 acres). We recommend that Ecologically Core and Ecologically Intact lands be eliminated from all the proposed SEZs that contain them. Below we offer specific comments on proposed SEZs with recommendations for excluding specific areas of high conservation value.

SEZs Removed from Consideration in the SDPEIS

The Iron Mountain and Pisgah SEZs were removed from consideration in the SDPEIS. The Nature Conservancy agrees with this action, as solar development in either of these locations could have significant ecological impacts. The Iron Mountain SEZ contained nearly four-fifths Ecologically Core land, with little more than one-fifth classified as ecologically intact or moderately degraded. Bighorn sheep have been reported on the edge of this area, which is also within the top end for habitat suitability in the desert tortoise model. Nearly 80% of the Pisgah SEZ is comprised of Ecologically Core lands. Ecological impacts to these high value conservation lands have been avoided by removing these two SEZs from consideration.

Amargosa Valley

This valley (Figure 6) is already scheduled to be heavily compromised by ongoing existing renewable energy applications, two of which are on the "fast track" course. There has been no explanation why additional facilities are needed in this general area given the scale of the existing proposed facilities. According to the Nature Conservancy's 2010 Ecoregional Assessment for the Mojave Desert, the majority of this SEZ is contained within Ecologically Core zone with an additional 1,278 acres of Ecologically Intact lands. Only one quarter of this SEZ is within Moderately Degraded category, and that principally located along US Highway 95.

This valley is located within an important corridor of movement for desert tortoises in light of projected climate change. Currently occurring at low densities, this very lightly impacted valley of Mojave creosote-bursage scrub may be an important

population center for this enigmatic desert species if climate trends continue.

The Amargosa Valley groundwater basin, which is already over-allocated, is linked to critically important desert oases such as Oasis Valley to the north and Ash Meadows and the Amargosa River Canyon to the south. Recent hydrological investigations have demonstrated that water from the north is important to sustain spring flow along the Amargosa River in California through the Shoshone/Tecopa/Amargosa Canyon region. The Amargosa Area of Critical Environmental Concern and Wild and Scenic River segments in California could be potentially adversely affected by groundwater pumping by proposed solar plants in the Amargosa Valley of Nevada.

Additionally, the presence of Big Dune at the core of the Amargosa Valley should cause serious concerns that the proliferation of renewable energy facilities will interrupt important sand transport pathways from the Amargosa River bed and nearby dry lake beds to the south and east of this valley (Figure 7).

If there is a credible argument to be made for any solar development in this area, let alone additional renewable energy to be generated in this vicinity after the build out of several existing “fast track” solar applications, that development should occur only in the moderately degraded corridor paralleling US 95. We strongly urge that this SEZ should be eliminated from further consideration, and, if not, that any approvals be given only after the highest level of scrutiny and subject to carefully considered mitigation requirements, especially those related to water use.

Figure 6. Amargosa Valley SEZ

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SEZ Initial Assessment

Amargosa Valley Solar Energy Zone

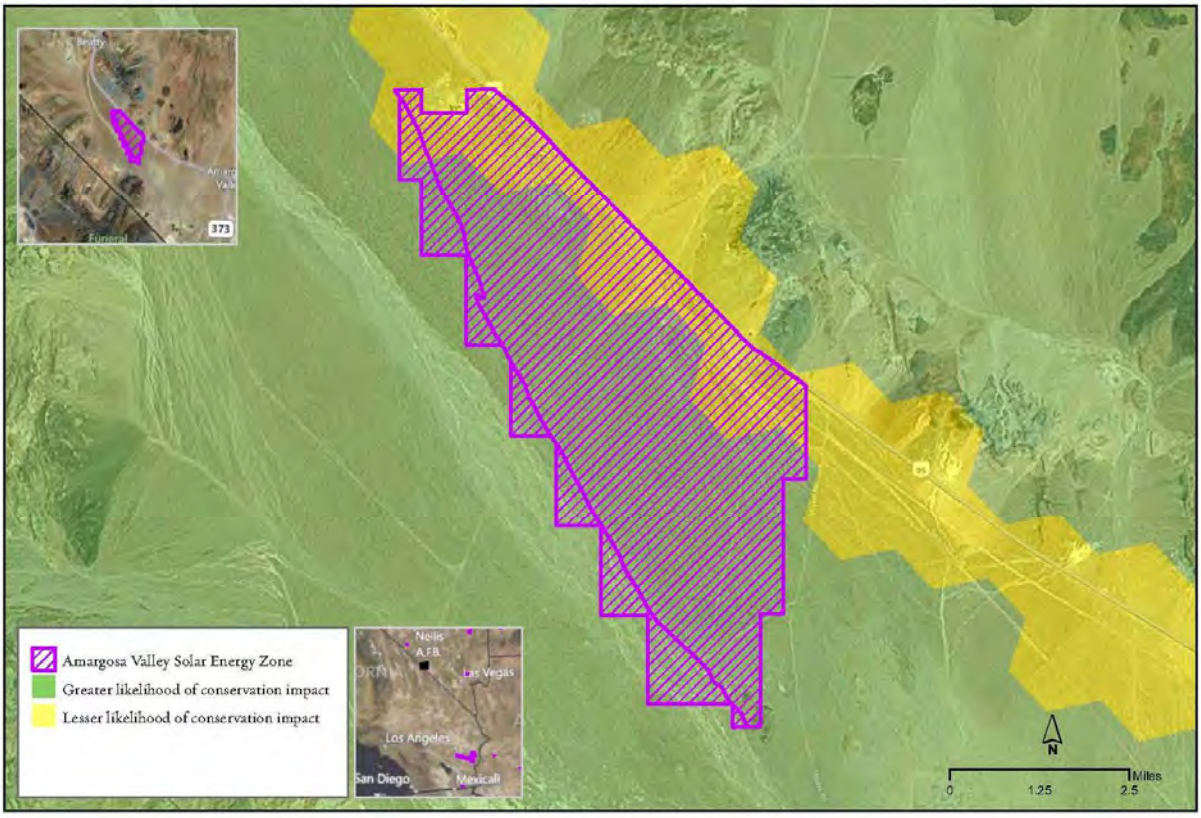
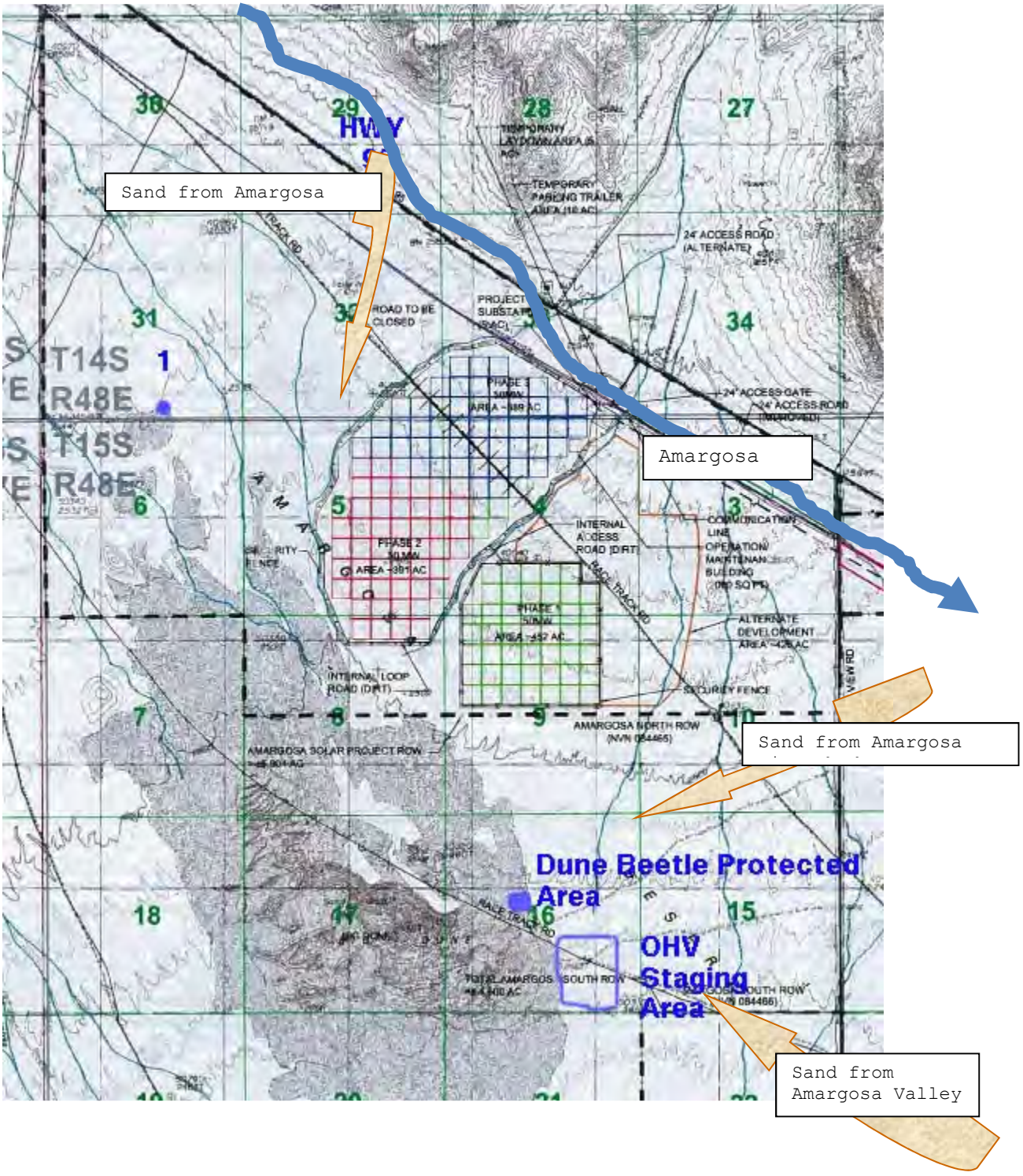


Figure 7. Big Dune in Amargosa Valley with Likely Sand Transport Pathways



Dry Lake

The majority of this proposed SEZ is in ecologically intact acreage. With the exception of important washes that drain into a playa wetland at the northern end, the vegetative communities and species contained within the boundaries of this SEZ are common throughout the Mojave Desert. The SEZ is surrounded by existing renewable energy facility applications that would likely take precedence over any facility to be developed within this SEZ, and as such it is difficult to justify the additional development on washes that are vital to maintaining an ephemeral wetland community. The location is proximate to the likely end user of power generated here (Las Vegas Valley) and is heavily compromised by existing facilities including considerable existing power transmission lines.

This location is generally suitable and appropriate with the exception of the washes leading to the playa wetland at the northern end of the SEZ. This area should be eliminated from the SEZ and the acreage could be replaced with that to the east and south of the Dry Lake on either side of Interstate Highway 15.

Figure 8. Dry Lake SEZ

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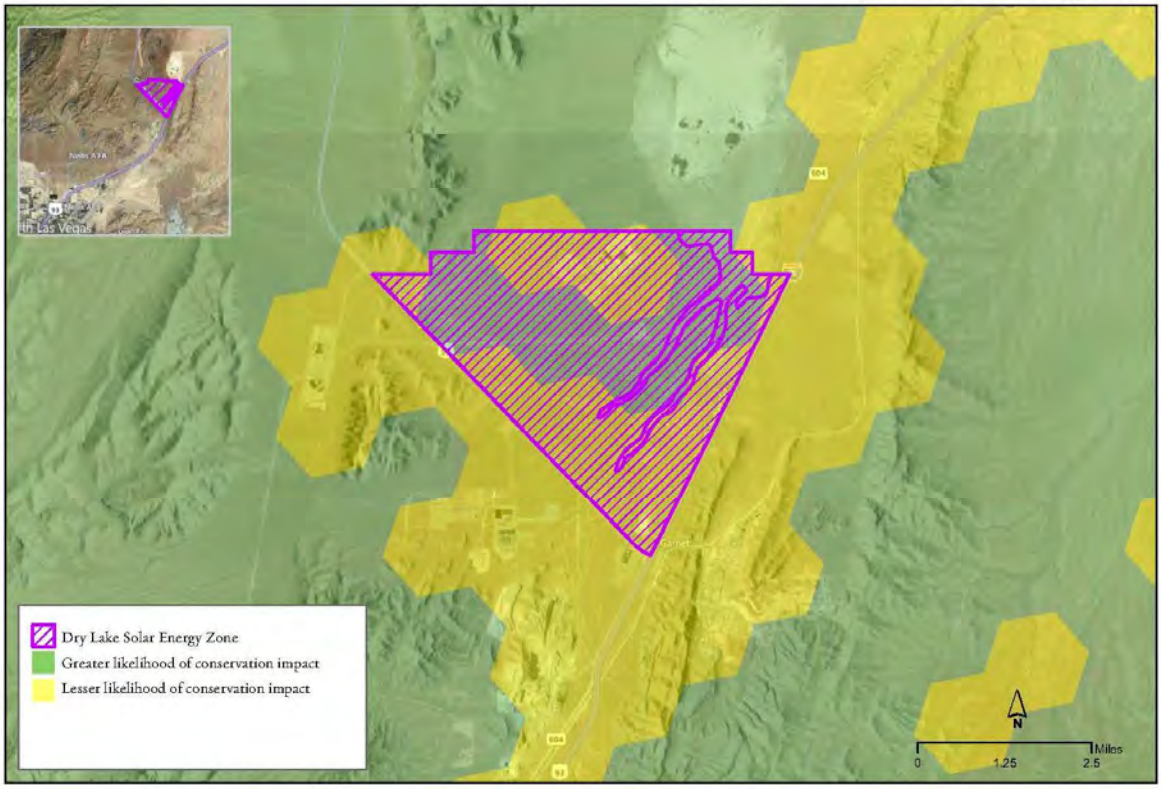
SEZ Initial Assessment

Dry Lake Solar Energy Zone



Gold Point

Gold Point SEZ is entirely within both ecologically core and intact zones identified by the Nature Conservancy in its 2010 Mojave Desert Ecoregional Assessment. It is quite distant from both existing transmission lines, as well as from likely significant end users in Las Vegas Valley or Tonopah. The immediate vicinity is remote and largely intact from existing developments and should remain so.

The general vicinity serves as habitat for several locally important species as identified in the PEIS such as Pronghorn antelope and Greater Sage Grouse. The proposed transmission corridor is particularly problematic for both of these species.

This SEZ is remote and not regionally significant as far as demonstrated power needs and furthermore is currently ecologically intact. It should be removed from consideration or relocated to nearby degraded or converted lands. Moving the SEZ could also alleviate transmission corridor concerns since the new corridor could parallel US 95 without appreciable additional impacts to the Pronghorn antelope and Greater Sage Grouse.

Figure 9. Gold Point SEZ

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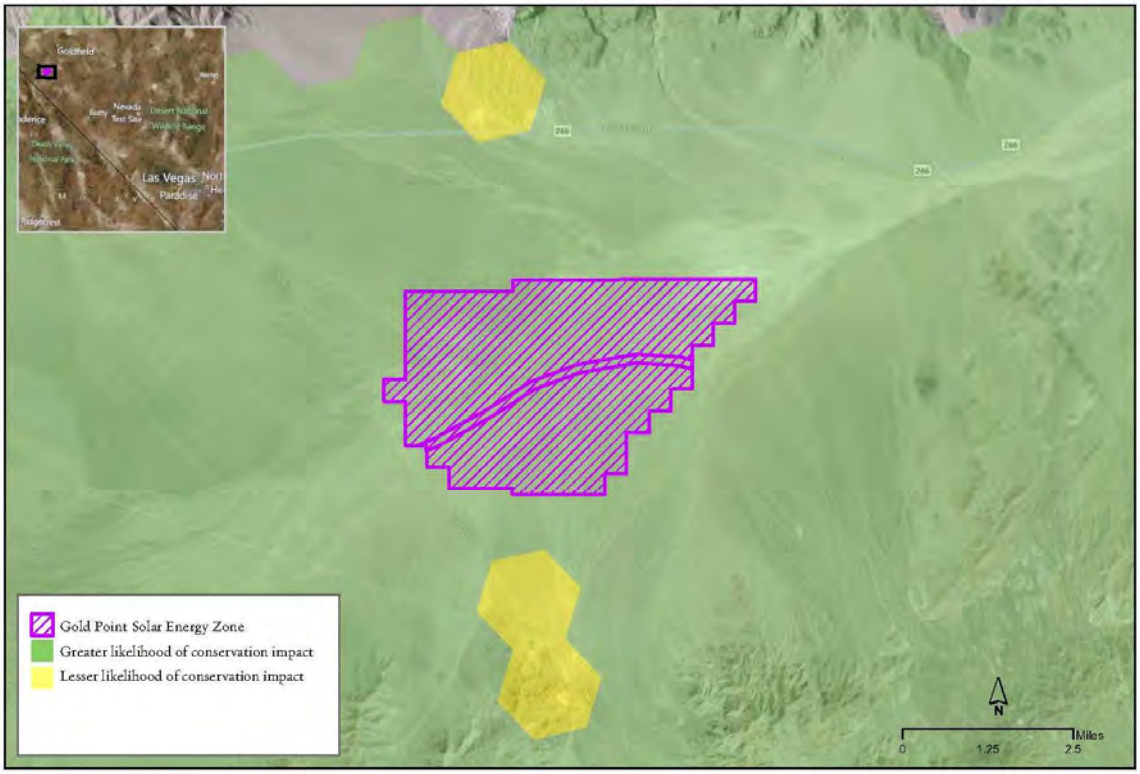
SEZ Initial Assessment

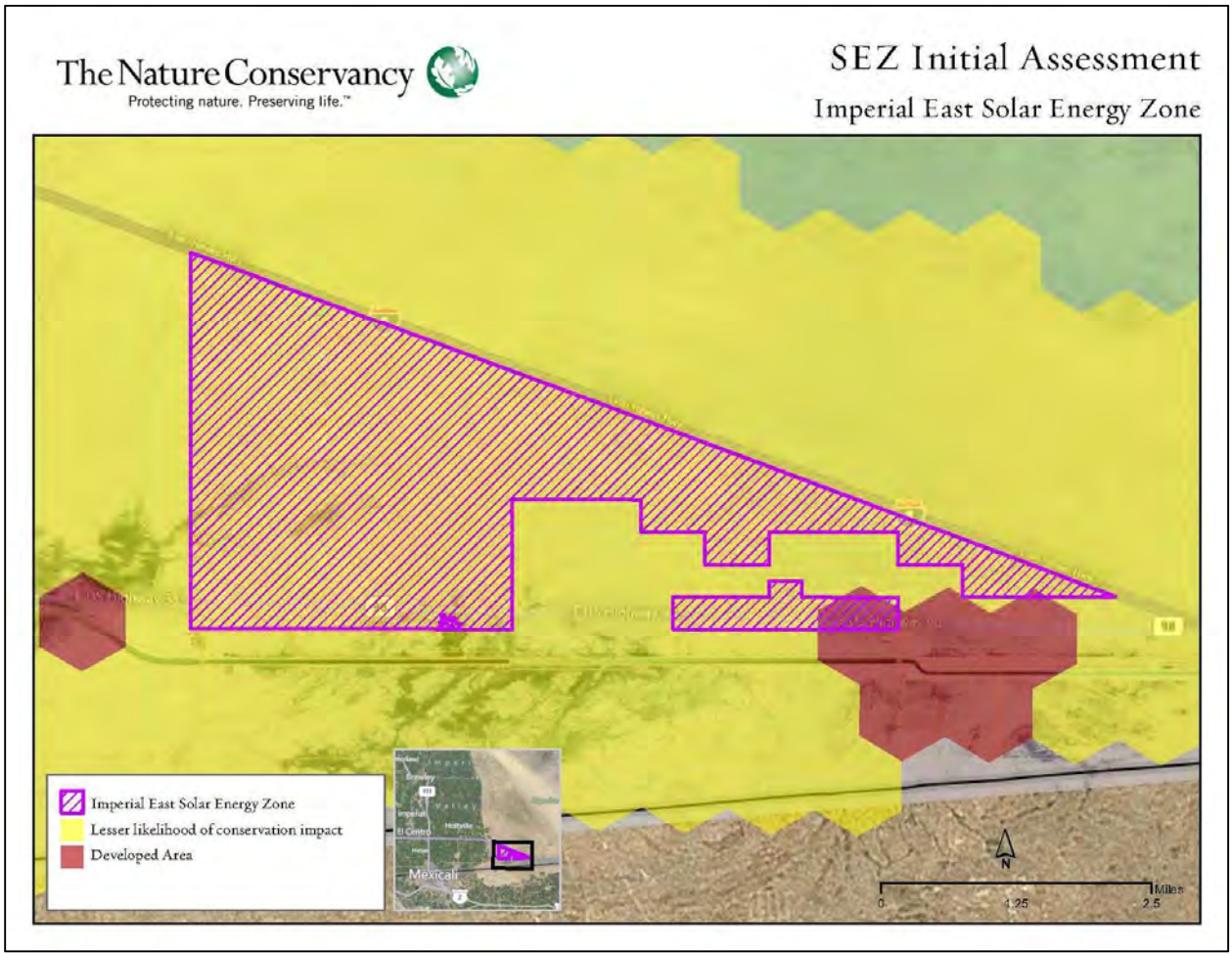
Gold Point Solar Energy Zone



Imperial East

The Imperial East SEZ is comprised entirely of lands that have been designated as having lower conservation value by the 2009 Framework for Effective Conservation Management of the Sonoran Desert in California. Despite this designation, in-depth local surveys and are required to determine if developments proposed within this area would have significant impacts on conservation targets or ecological processes. Even lands that have relatively low conservation value may harbor important biodiversity elements.

Figure 10. Imperial East SEZ



Riverside East

The Riverside East SEZ is divided between Moderately Degraded, Ecologically Intact and Ecologically Core lands. Over 31% of the Riverside East SEZ is comprised of lands identified as having high conservation value in the 2009 Framework for Effective Conservation Management of the Sonoran Desert in California because they are un-fragmented and host important species and communities. We recommend the withdrawal from this SEZ of the highest conservation value lands shown on the accompanying map. Areas that should be withdrawn from this SEZ include lands around Palen Dry Lake in the northwestern portion of the SEZ, and the high value habitat northwest of Blythe. In addition, the large size and long, thin shape of this SEZ may hinder the north-south movement of Bighorn Sheep and other wide-ranging terrestrial vertebrate species. The shape of the SEZ should be modified to incorporate viable wildlife linkages and provide connectivity for hydrological and ecological processes such as sand movement in this region.

Figure 11. Riverside East SEZ

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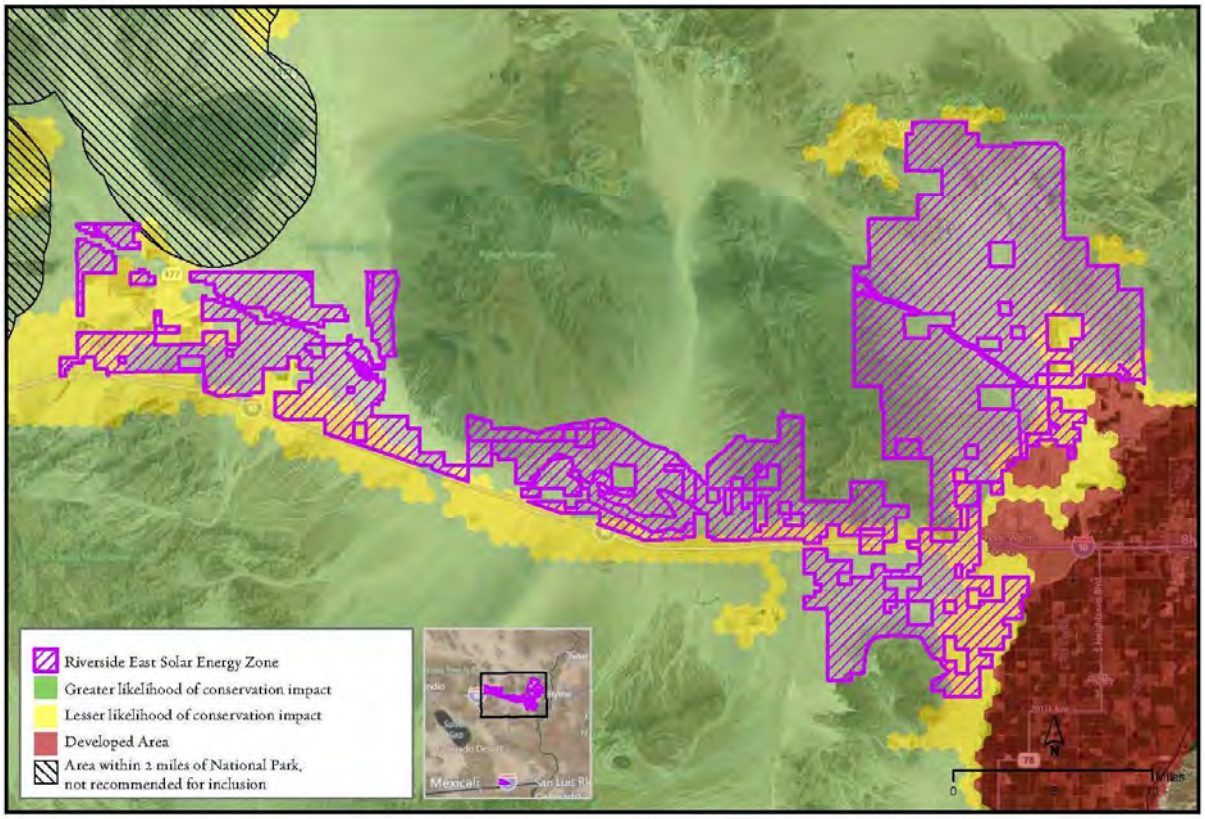
SEZ Initial Assessment

Riverside East Solar Energy Zone



Pending Solar Applications in California and Nevada

The list of 79 pending applications for ROW authorizations for solar facilities received by BLM as of August 15, 2011 includes 20 applications in California covering a total of 129,092 acres, and 25 applications in Nevada covering a total of 111,397 acres. The spatial data for these applications that are currently available from BLM do not include all projects listed in Appendix A of the SDPEIS. We were unable to attain data for four projects in California and 10 projects in Nevada. The table below details which applications we were unable to analyze due to lack of data (Table 4).

Table 4. Pending Applications for ROW Authorizations Not Included in The Nature Conservancy's Analysis Due to Lack of Spatial Data

Applicant Name (Project Name and/or Geographic Area)	Serial Number	Acres
San Diego Gas and Electric Co (Ocotillo Solar)	CACA 051625	115
Element Power (GrEXt Valley-Atwell)	CACA 051812	1,509
Ridgeline Energy (South Kern Solar)	CACA 052471	160
Ridgeline Energy (Tiwsselman Solar)	CACA 052473	80
Navy Faceng Cmnd SW (Fallon NAS Solar)	NVN 084654	37
Solar Reserve LLC (Pahroc Solar)	NVN 086350	7,680
Silver State Solar LLC	NVN 089530	5,651
Gasna 39 LLC	NVN 089530	600
Lone Valley LLC	NVN 089566	233
Element Power	NVN 089655	2,560
Element Power	NVN 089656	640
Element Power	NVN 089657	640
Element Power	NVN 089658	640
Element Power	NVN 089659	1,280

Total Area Not Included in Analysis	21,825

Despite this lack of data, the Nature Conservancy has been able to analyze the remaining ROW applications (16 in California and 15 in Nevada) to determine which projects would be located on lands that have been identified as having high conservation value. Pursuit of solar development in these locations is likely to be time-consuming and difficult to mitigate, as the presence of important elements of biodiversity, including listed species, is likely to create significant ecological impacts.

In California, six of the ROW applications have more than 50% of their total area on lands identified as Ecologically Core by the Nature Conservancy (Table 5). These include: First Solar – Stateline (CACA 048669) at 97%, EnXCo Inc. –McCoy (CACA 049490) at 93%, NextEra Energy –McCoy (CACA 048728) at 91%, Leopold Company LLC –Ward Valley (CACA 049002) at 84%, Power Partners Southwest (EnXCo) –Troy Lake Solar (CACA 049585) at 69%, and Caithness Soda Mountain LLC (CACA 049584) at 53%. In Nevada, there are three ROW applications with more than 50% of their total area on lands identified as Ecologically Core by the Nature Conservancy. These include GA-SNC Solar LLC (NVN 088552) at 100%, Ausra NV I LLC –Spector Range (NVN 086249) at 88%, and Bright Source Energy Solar Partners –Mormon Mesa (NVN 083914) at 64%. In total, over 76,863 acres identified as Ecologically Core by the Nature Conservancy in the Mojave Desert and the California Sonoran Desert are covered by ROW applications for solar development. An additional 117,824 acres are identified as Ecologically Intact.

Some of the ROW authorizations for solar facilities received by BLM are located in areas close to or overlapping with SEZs that have been eliminated from consideration in the SDPEIS. Examples include Caithness Soda Mountain LLC (CACA 049584), which overlaps with the eliminated Pisgah SEZ and Leopold Company LLC –Ward Valley (CACA 049002), which overlaps with the Iron Mountain SEZ. The Nature Conservancy recommends that the ecological concerns used to refine and eliminate these and other SEZs be brought to bear in assessing individual ROW applications. Individual projects located in areas where SEZs have been removed should not move forward.

In addition, it must be noted that there currently several approved solar projects such as Calico Solar, LLC (CACA 049537), the Blythe Solar Power Project (CACA 048811), and the Ivanpah Solar Electric Generating System (CACA 048668) that are not listed in Appendix A of the SDPEIS. A significant percentage of

the land covered by each of these projects has been identified as Ecologically Core and/or Ecologically Intact by the Nature Conservancy. An accurate assessment of the cumulative impacts of solar development in the southwest U.S. must include these previously-approved projects.

Table 5. Conservation Value of Lands with Pending Applications for ROW Authorizations

Applicant Name (Project Name and/or Geographic Area)	Serial #	Ecologically Core Acres (%)	Ecologically Intact Acres (%)	Moderately Degraded Acres (%)	Highly Converted Acres (%)	Total Acres*
Leopold Company LLC - Ward Valley	CACA 049002	29,680 (86%)	5,573 (16%)	214 (1%)		35,467
EnXco Inc. - McCoy	CACA 049490	11,906 (93%)	930 (7%)	-	-	12,836
Bright Source Energy Solar Ptnr -Mormon Mesa	NVN 083914	8,544 (64%)	4,756 (36%)	-	-	13,300
First Solar - Stateline/Ivanpah	CACA 048669	5,893 (96%)	-	165 (3%)	49 (1%)	6,107
NextEra Energy -McCoy	CACA 048728	4,938 (91%)	502 (9%)	-	-	5,440
Cogentrix Solar Services LLC -McCollough Pass	NVN 083129	4,785 (27%)	12,987 (73%)	-	-	17,772
Caithness Soda Mountain, LLC	CACA 049584	4,206 (53%)	930 (12%)	2,859 (36%)	-	7,995
Power Partners SW -EnXco Troy Lake Solar	CACA 049585	2,557 (69%)	179 (5%)	973 (26%)	-	3,709
Ausra NV I LLC -Spector Range	NVN 086249	2,056 (88%)	271 (12%)	-	-	2,327
Pacific Solar Inv. Inc.- Iberdrola Amargosa No.	NVN 084465	569 (45%)	85 (7%)	602 (48%)	-	1,256
Solar Millennium/Chevron -Palen	CACA 048810	496 (10%)	2,089 (40%)	2,628 (50%)	-	5,213
Ewindfarm Inc -Johnnie Pahrump	NVN 085201	333 (4%)	8,216 (91%)	443 (5%)	-	8,992
Johnson Valley SEGS, LLC - Johnson Valley	CACA 052796	131 (77%)	1,631 (17%)	353 (17%)	-	2,115
EnXco Inc. - Mule Mountain	CACA 049488	39 (2%)	1,929 (94%)	90 (4%)	-	2,058
First Solar -Silver State South	NVN 085801	25 (2%)	1,138 (77%)	310 (21%)	-	1,473
Bright Source Energy Solar Partners	NVN 084631	-	28,170 (85%)	4,867 (15%)	-	33,037
DPT Broadwell Lake - Broadwell SEGS	CACA 048875	-	12,309 (100%)	-	-	12,309
Pacific Solar Investments Inc. Iberdrola -Ogilby	CACA 049615	-	9,062 (>99%)	10 (<1%)	-	9,072

Amargosa Flats Energy LLC - Crystal/Johnnie	NVN 084704	-	6,893 (100%)		-	6,893
First Solar -Desert Spring	NVN 084232	-	5,520 (100%)	-	-	5,520
Chuckwalla Solar 1 LLC -Chuckwalla	CACA 048808	-	3,538 (86%)	560 (14%)	-	4,098
Abengoa Solar Inc -Lathrop Wells Solar	NVN 086571	-	3,143 (82%)	693 (18%)	-	3,836
Power Partners Southwest LLC EnXco	NVN 086158	-	3,072 (100%)	-	-	3,072
First Solar - Desert Quartzite	CACA 049397	-	2,491 (34%)	4,803 (66%)	-	7,294
EnXco Inc. - Desert Harvest Solar	CACA 049491	-	1,189 (99%)	9 (1%)	-	1,198
Nevada Power Company -Dry Lake Valley	NVN 084052	-	600 (97%)	17 (3%)	-	617
Ausra NV I LLC -Highway 160	NVN 086248		514 (62%)	314 (38%)	-	828
Sunpeak Solar LLC - Superstition Solar I	CACA 049150	-	29 (1%)	4,829 (88%)	605 (11%)	5,463
Solar Reserve LLC -Solar Reserve/Imperial Co.	CACA 049884	-	-	3,830 (100%)	-	3,830
Power Partners Southwest LLC EnXco	NVN 086159	-	-	680 (100%)	-	680
Total Acreage:		76,863	117,824	29,250	654	224,592

*Spatial data available for this analysis predates the release of the SDPEIS. In many cases, the total acreages of ROW applications have changed over time.

Potential Changes to Figures:

- Figure 2: This map may need to be modified due to different rules for the No Action alternative between the original PEIS and the Supplement to the PEIS. Changes have been made to accommodate updates in GIS data for National Monument boundaries.
- Figure 3: We need to standardize what we call this alternative. Within the Supplement to the PEIS it is called the "Modified Program". The text of this document also calls this alternative the "Modified Program Alternative". The figure should reflect this change.
- Figures 6, 8-11: The title of these figures is "SEZ Initial Assessment". This language is open to revision.

Figures 6, 8-11: The legend presents lands that are identified as Ecologically Core or Ecologically Intact as having a "Greater likelihood of conservation impact" and those identified as Moderately Degraded as having a "Lesser likelihood of conservation impact". This language is open to re

Thank you for your comment, Christine Canaly.

The comment tracking number that has been assigned to your comment is SEDDsupp20190.

Comment Date: January 28, 2012 01:56:10AM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20190

First Name: Christine
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Privacy Preference: Don't withhold name or address from public record
Attachment: 01.26.12.F.Draft_Solar_Transmission_Alternatives WMB Edits 060710.pdf

Comment Submitted:

Attachemnt to previous comments

January 14, 2012

(update from June 7, 2010)

SLV Solar/Transmission line Alternatives and Redundancy recommendations compiled by:

The San Luis Valley Solar/Transmission Work Group in cooperation with the San Luis Valley Ecosystem Council and Citizens for San Luis Valley Water Protection Coalition

Transition of **energy infrastructure** is occurring rapidly in all sectors of our society and renewable**, clean** energy transmission and development has to be at the top of the list. The San Luis Valley **(SLV)**, located in south central Colorado**,** is receiving national attention because this unique area, exemplifies the debate on how to move forward.

The SLV Solar/Tran work group, composed of citizens throughout the valley, has met monthly for a year to determine what will work for local communities to move forward towards energy independence that includes: autonomy, efficiency, reliability, security and redundancy and at the same time, protects the stability, including cost, of our agricultural industry and existing utility infrastructure. There are currently two utility providers operating in the SLV, **Xcel Energy of Minneapolis, MN** and SLV Rural Electric Cooperative (SLVREC), a **member of Tri-State Generation and Transmission Association, Inc. of Westminster, CO.**

Various options are included in these recommendations because public policy direction and advances in technology are **keys** to determining optimal approaches for future decision making.

We believe the San Luis Valley can be a model for Colorado and the nation regarding development of an autonomous, locally generated power and energy grid that can support redundancy and also provide export of power for the larger energy utility infrastructure.

Baseline Mapping Tool- The Solar/Tran Working Group developed a **comprehensive map** which includes land management classifications, existing electric utility infrastructure, solar radiant potential **(insolation),** current land uses, sensitive species **areas including** wetlands & riparian **areas on both** public and private land. It is critical policy makers and utilities refer back to this baseline map when making **siting** and design decisions.

<u>We bring the following recommendations:</u>

1. We support a Local Power Authority (LPA) within the six SLV counties to remain autonomous and work in cooperation with utilities to oversee design, integration, and fair rate structure development of locally generated power.
2. We support beginning with the upgrade of existing transmission lines into the SLV and implementing micro grid **(Smart Grid)** technologies to the 31 substations within the SLV **existing as of the date of this document.** We understand that the Poncha Pass substation must be included in this upgrade. **(Please refer to baseline map.)**
3. We support a Distributive Generation (DG) model that is supported by financial incentives, in combination with various forms of **solar power facility siting and siting of other clean energy facilities such as hydro, wind, geothermal, and small (5 MW) biomass. Such facilities may range** in scale from individual landowner solar irrigation to larger **5 MW to 40 MW PV solar or other clean energy installations** near the 31 existing substations, including solar gardens. **We will research and specify acceptable MW range for each substation.**
4. We support locally generated renewable**, clean** energy power supply (**e.g.,** solar, **hydro and other technologies** that is well-designed and brings the capacity for storage **and economical distribution** to ensure local redundancy and reliability.

5. We support prudent development of solar energy on private or municipal lands **provided the facility is appropriately sited.** Please refer to Baseline map **and our siting recommendations.**
6. We support a **phased approach** to the **siting** of large scale solar **and other clean energy** facilities and upgrading/development of future transmission lines.
7. We also support, with scrutiny,120 MW Solar facilities in each of the 5 counties (We are not including Mineral County here) cited for maximum solar radiation potential using baseline mapping tool **or** one- 250 MW (**estimated** 2 sq mile area) **Concentrating Solar Thermal-electric power facility with integrated storage** located near the SLV sub-station. We understand that technological advances may make this a moot recommendation.
8. We support a **maximum** of 800 MW, (double circuit 230kv line) total generation cap, 150 produced for local use and 650 exportable through upgraded transmission line over Poncha Pass to be exported out of the San Luis Valley. This is four times the current rate of Maximum Peak Load used in the SLV. Concerns were raised that **power export in excess of 650 MW currently** would threaten the character, natural resources and current land use of this unique area. **This recommendation is consistent with a phased approached to clean energy development wherein technological advances in clean energy production and storage potentially could allow greater power exports, or alternatively lessen demands on SLV power exports.**
9. We support one 250 MW **Concentrating Solar Thermal-electric power facility (as mentioned above) with integrated storage sited near the San Luis Valley Substation southeast of Center, CO** that would meet stringent requirements and be suitable for this area. For example, water use, both quality and quantity, impacts to flyway populations (birds and bats), night sky alterations **and other potential impacts** must be researched and approved through the LPA.
10. We support the research and development of Concentrated Solar Facilities in Zone 5, near Pueblo and Walsenburg, where large scale substations such as Comanche already exist and are closer to point of use **and other major existing power transmission corridors.** (Front range Metro area **and High Plains Express Transmission Corridor, for example.**)
11. We are also adopting BLM mitigations regarding their research into the Solar Energy zones for the San Luis Valley. We believe these mitigations should be applied to the entire San Luis Valley. These mitigations include: No power towers, No water cooled facilities and proper reclamation**.**

Qualifications

We will continue to research the costs/investments involved in our recommendations. The economics of energy production in all its forms is changing rapidly and dramatically throughout the world. Our access to energy economics expertise is substantial, and we will provide all reference information necessary to support the economic viability of our recommendations.

We will continue to research the rapidly evolving technology of solar and other clean energy, particularly as it relates to storage, DG, Smart Grid, business models and other modern energy solutions. We will provide sound reasoning and projections for the technological evolution of clean energy solutions during the next decade. The rapid changes in clean energy technology further emphasize our recommendation for a phased approach to energy development that does not lock us into technology or energy and transmission planning scenarios that could rapidly become obsolete.

In coming months, the Solar/Tran work group will be providing far greater detail to these recommendations. Thanks for your patience as we continue to research and learn about the possibilities and limitations of our existing infrastructure. If you would like to join us, or if you have information and recommendations you would like to share, please contact us.

Thank you for your comment, Barbara Renton.

The comment tracking number that has been assigned to your comment is SEDDsupp20191.

Comment Date: January 28, 2012 19:54:45PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20191

First Name: Barbara
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Attachment:

Comment Submitted:

Please extend the time necessary for we, the shareholders to READ this 500+ page document and investigate the proposed sites.

I would have no problems with solar compared to wind turbines since solar is much better. But ROOFTOP solar is much more preferred since of the millions of homes and buildings in our state, our roofs would be a preferred site!

Thank you.