Thank you for your comment, Michael Connor.

The comment tracking number that has been assigned to your comment is SEDDsupp20100.

Comment Date: January 26, 2012 23:56:11PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20100

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Attachment: WWP-Lovich&Ennen2011.pdf

Comment Submitted:

Western Watersheds Project is submitting this research paper with its comemts. Thank you.

Thank you for your comment, Michael Mantell.

The comment tracking number that has been assigned to your comment is SEDDsupp20177.

Comment Date: January 27, 2012 20:41:37PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20177

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Attachment: Joint Comments on the Supplement to the Draft Solar PEIS.pdf

Comment Submitted:

Abengoa Solar Inc. •Amonix, Inc. • Audubon California • BrightSource Energy, Inc.
Center for Energy Efficiency and Renewable Technologies • Defenders of Wildlife
enXco – an EDF Energies Nouvelles Company • First Solar, Inc. • Iberdrola Renewables, Inc.
Large-scale Solar Association • Natural Resources Defense Council • NRG Solar LLC
Pacific Gas and Electric Company • Solar Energy Industries Association • SolarReserve, LLC
Southern California Edison • SunPower Corporation, Systems • The Nature Conservancy
The Vote Solar Initiative • The Wilderness Society • Torresol Energy

January 27, 2012

The Honorable Ken Salazar
Secretary of the Department of the Interior
1849 C Street SW
Washington, DC 20240

Re: Joint Comments on Supplemental Draft PEIS for Solar Development

Dear Secretary Salazar:

The signatories to this letter are a group of conservation, utility and solar developer stakeholders who have spent hundreds of hours of time in thinking, writing, and talking about the issues that are central to the Supplement to the Draft PEIS for Solar Energy Development in Six Southwestern States ("PEIS"). This letter states the agreements we have reached with regard to various issues presented in that document. Individual and groups of stakeholders will send their own comments on issues that we have either not addressed as a group or were unable to reach agreement on at this time.

The parties generally agree that (1) solar energy development in the right places on public lands is necessary to achieve our renewable energy goals; protect desert ecosystems, landscapes and species; and fight rapid climate change; and (2) zones are an accepted land use planning tool that can facilitate solar development, especially by clustering projects around transmission, minimizing other infrastructure needs and reducing the footprint of that development.

We further agree the zones proposed thus far are only a starting point in the process and we are recommending initiation of the next steps necessary to create a more robust system of zones. Those steps will ensure the identification of new zones which are adequate in size and location to which transmission can be built and in which clustered large-scale solar development can occur.

We agree that the current PEIS moves us closer to the model described above, and represents an unprecedented effort by the Department of the Interior and Bureau of Land Management, in cooperation with the Department of Energy, to use public lands strategically to produce clean energy. In recognition of these facts, we have come together to develop recommendations to assure that the BLM ROW application process remains flexible to accommodate "smart from the start" near-term development as well as to promote the prompt identification and designation of new zones in accordance with the framework addressed in the PEIS, as modified by these comments. The parties further agree that BLM must complete the Solar PEIS by the end of fiscal year 2012.

RECOMMENDATIONS

1. Pending Applications

We agree that BLM should scrutinize pending applications to assure that they meet financial and technical qualifications and are proceeding with due diligence. BLM's recent actions to assure

qualifications and due diligence in California resulted in fewer pending applications. We urge a similar process in Arizona and Nevada.

We agree that the pending applications identified in Appendix A should be processed under current rules, not new rules under the Supplemental Draft PEIS (see box on page 1-9).[1] In addition, the solar industry has identified applications that appear to be pending but are not on the list.[2] These applications should also be processed under current rules, provided that BLM confirms the filing dates for these applications and that it did not deliberately exclude one or more of these applications from Appendix A for failure to comply with diligence or other requirements.

In addition, the reference to denying pending applications because of their location in proposed exclusion areas (page 1-11) should be removed.[3] We urge BLM not to change the deadline for these applications again.

2. Variance Process

We agree that the variance process is intended to be the exception, not the rule, consistent with the framework proposed in the Supplement. We are committed to working together to develop new zones so that use of the variance process can be minimized. Until then, the variance process requires some modification. For example, the Supplement articulates a set of variance factors, and states that they will be considerations in processing variance applications. However, we agree that the first variance factor (demonstration of technical and financial capabilities) should be enforced as a requirement, consistent with existing Instruction Memoranda. As further stated below, we also agree that there should be a requirement regarding Desert Tortoise. We do not yet agree on a recommendation for the contents of a Desert Tortoise requirement, except to say that neither Option 1 nor Option 2 is adequate.

a. Low resource value factor

The variance factor that takes into account "Low resource values and minimal conflict with adjacent lands" (page 2-35, line 8) should be replaced by the following language:

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[1] All page references are to the Supplement to the Draft PEIS.

[2] These applications are the following:

1. Siberia (CACA-049421) filed under Solar Partners V, LLC. Received by BLM 4-27-07. 13,920 acres.
2. Palo Verde II, aka Sonoran West (CACA-051967) filed under BrightSource Energy. Received by BLM 5-12-09. 12,269 acres.
3. Pahrump Valley, aka Sandy Valley (NVN-090476) filed under BrightSource Energy. Received by BLM 1-21-11. 15,190 acres.
4. Rio Mesa Solar (CACA-053138) filed under BrightSource Energy. Received by BLM 2-14-11. 3,054 acres.
5. Mule Mountain III (CACA-50390) filed by SolarReserve on 8-22-08 (second in line application); SolarReserve notified of status as a first in-line application on 5-16-2011. 8,160 acres.
6. Sandy Valley III (NVN-[# TBD]) filed by Sandy Valley Solar III, LLC. Received by BLM 10-21-11. 10,804 acres.
7. NextEra Sandy Valley (NVN-[# TBD]) filed under Boulevard Associates. Accepted by BLM 10-21-11. 3,200 acres.

[3] Pending applications in proposed exclusion areas may qualify as high conflict projects under either Instruction Memorandum 2011-061 (February 7, 2011) or the recommendations dated December 22, 2010 that were previously submitted by some of the signatories to this letter.

Documentation that the proposed project is in an area with low or comparatively low resource conflicts. Examples of such lands and others where development could present comparatively low conflicts if conflicts can be resolved include the following:

- Lands specifically identified for solar or wind energy development in BLM land use plans;
- Previously disturbed sites or areas adjacent to previously disturbed or developed sites;
- Locations that minimize construction of new roads and/or transmission lines;
- Lands adjacent to designated transmission corridors;
- Lands that are not excluded due to their visual resource classification, subject to review and additional mitigation where required;
- Lands identified as suitable for disposal in BLM land use plans;
- Areas repeatedly burned and invaded by fire-promoting non-native grasses, at least in the Sonoran and Mojave deserts;
- Department of Defense operating areas, including areas with significant radar, airspace, or land use conflicts, where conflicts can be resolved;
- Areas where project development may adversely affect lands acquired for conservation purposes, where conflicts can be resolved;
- Areas with low or relatively low conflict characteristics that are adjacent to private lands that might be used for development; and
- Areas where water extraction does not pose a significant threat to species or systems. However, variance applications where groundwater extraction may impact groundwater dependent ecosystems, and especially within groundwater basins that have been over appropriated by state water resource agencies, may qualify where the developer commits to provide mitigation measures that will provide a net benefit to that groundwater resource.

These examples are intended to reinforce the intent of the variance process – i.e., to allow development on sites with low or comparatively low resource conflicts, without undermining the goal of moving toward zone-based development.[4]

b. Factors with the word "minimize"

The factors pertaining to "minimizing" certain impacts should be replaced with the following language:

Minimize need to build transmission and infrastructure (page 2-37):

> Documentation that the proposed project will minimize the need to build new roads and that it meets one or more of the following transmission sub-criteria: (1) transmission with existing capacity and substations is already available or (2) only incremental transmission

[4] We agree that variance applications could not be sited on lands previously identified as high conflict such as those in Instruction Memorandum 2011-061. The examples of low and comparatively low resource conflicts are adapted from Instruction Memorandum 2011-061. We also agree that the following are not low impact or comparatively low conflict areas: (1) "[l]ands with wilderness characteristics outside Wilderness and Wilderness Study Areas that have been identified in an updated wilderness characteristics inventory" pursuant to Section 201 of the Federal Land Planning and Management Act, 43 U.S.C. §§ 1701, 1711, and Instruction Memorandum 2011-154 (July 25, 2011), not a Visual Resource Inventory; or (2) "[s]ensitive habitat areas, including important eagle use areas, priority sage grouse habitat, riparian areas, or areas of importance for Federal or state sensitive species." *Id.*

is needed, e.g. re-conductoring or network upgrades, and development of substations, or (3) new transmission upgrades or additions to serve the area have been permitted or are planned sufficiently to reasonably be expected to be available in time to serve the generation project.

Minimize impact on water (page 2-37):

Documentation that demonstrates that the proposed project is designed to use the best available technology[5] 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.

c. Desert Tortoise

We are in agreement that protection for desert tortoise habitat and populations in the variance process should be a requirement rather than a factor to be considered. However, we also agree that Options 1 and 2 in the Supplemental Draft PEIS are inadequate. At this time, the signatories to this letter have not reached an agreement on a recommendation as to the specific content of a requirement for diverse geographic areas. We intend to continue to work as a group on the development of appropriate recommendations.

3. Use of Height and Technology Limitations in Designated SEZs

We agree that BLM should remove the SEZ height and technology limitations applied to areas described as requiring VRM Class II or III "consistent" mitigation (pages C-58 and C-343, Section C.7.3 and Draft Table A.2.2). These VRM considerations should be dealt with on a case by case basis in the NEPA process.

4. Slope and Insolation Exclusion Criteria

Slope and insolation are technical criteria or constraints. They should be listed separately from other exclusion criteria.

We agree that there could be some flexibility to develop on lands with greater than 5% slope.

a. Slope

With regard to lands with greater than 5% slope, we propose:

- Allow developers to file a ROW application on variance lands that includes some lands with up to 10% slope to avoid or minimize resource conflicts, provided that the upslope area is proximate to the variance lands in the application, not otherwise excluded from development, and does not create any significant new or additional conflict. The identified conflict lands would be excluded from future development.
- Create a pilot program by which BLM will allow developers to file a ROW application on variance lands that includes lands with up to 10% slope to generate additional solar energy, provided that the upslope area is proximate to the variance lands in the application, does not exceed 33% of the acreage of the proposed project, and is not otherwise excluded. The application must address all variance factors. An equal amount of similar or better quality land would be removed from variance lands in the vicinity of the upslope lands. BLM would allow a maximum use of

[5] Use of the term "best available technology" is not intended to import the definition of that term from the Clean Water Act, but is instead used in a generic form.

20,000 acres of lands with greater than 5% slope and up to 10% slope in California, Nevada, and Arizona.

b. Insolation

- The parties have discussed the issue of insolation, and tried to agree upon a pilot project parallel to that on slope. However, the parties could not agree on the parameters of such a pilot project. We hope to continue to work on this issue and make further recommendations.

In all of these cases a land use plan amendment would have to be adopted to permit the slope exception.

5. Areas where future applications for large-scale solar development should be prohibited

We agree that new applications for large-scale solar development in the Ivanpah Valley (CA and NV) and the Pisgah Valley should be prohibited.[6] This prohibition on new applications would not apply to amendments to pending applications, provided that such amendments either (1) do not change the boundaries of the pending ROW application or (2) are related to avoiding resource or land use conflicts, adapting the project to third-party owned infrastructure constraints, or using or designating translocation areas or mitigation lands.

6. Protocol for New SEZ Identification, Including West Mojave SEZ

We agree that the identification and designation of new zones is critical to the enduring success of a zone-based solar energy development framework as is the prompt designation of new zones. In general, in designating a new SEZ, BLM should base its decision on NEPA studies which demonstrate that resource conflicts are low or can be addressed and development prospects are high. SEZs should ideally be large enough to allow for siting flexibility and the development of multiple projects (1 GW or more).[7] They must be in areas with access to roads and a suitable workforce. New zones should be located where it is reasonable to anticipate sufficient transmission to serve the quantity of generation planned for the zone can be made available, considering current transmission planning processes and environmental considerations.

The solar industry and environmentalists have previously urged BLM and DOI both individually and collectively to look for new zones in the West Mojave and other areas of the California Desert and to initiate such efforts prior to completion of the Solar PEIS. We intend to continue to work as a group on the development of further recommendations for the designation and processes to be used for adoption of new zones. At this time, we have agreed upon the following recommendations:

- DOI should commit, in the final PEIS and in the ROD, to making a final decision on the designation of new zones, including a potential new zone in the West Mojave, by the end of 2013. Specifically, in the area being addressed in the DRECP planning area, BLM should commit that new zones will be considered in the DRECP.

[6] Due to the divergent views of the industry and the conservation community on the issue of previously-approved applications, this section of this letter does not address amendments to approved applications in these areas.

[7] We say "ideally" because other than the Riverside East SEZ most or all of the SEZs are too small to accommodate multiple projects. It is possible that SEZs will need to be smaller, but ideally they should be large, so as to facilitate needed transmission.

- DOI and BLM should make this decision-making process their highest priority to ensure that the 2013 deadline is met.
- The Department should actively support and provide strong leadership for planning and related processes currently underway – e.g., DRECP, West Chocolate Mountains and RDEP – to ensure timely zone outcomes as well as consistency between these efforts and national renewable energy programs, policies and implementation.[8]
- In addition to playing a lead role in the identification of new zones in the DRECP, DOI's leadership role in that effort should also encompass transmission planning and permitting.
- The Department should commit to the development of regional mitigation plans for SEZs, including a West Mojave SEZ, if one is designated.
- BLM should encourage developers, utilities and other stakeholders to nominate new zones.

7. SEZ Mitigation Plan Recommendations

We are in agreement that the solar energy program should include the elements of a mitigation program that are transparent, systematic, and based on sound science, require ongoing monitoring, and address clear conservation priorities. Such a program will provide certainty to developers about the requirements and costs of mitigation, and assurances to the conservation community and other stakeholders that conservation priorities can be maintained and preserved in perpetuity. The development of the specifics of this mitigation program must not delay the adoption of the PEIS or review of pending applications. At this time the signatories to this letter have not reached agreement on a recommendation on the specifics of the elements for a mitigation program. We do agree that the mitigation program should follow the mitigation hierarchy of avoid first, then minimize, then restore, then offset. We intend to work as a group on the development of appropriate recommendations.

8. Transmission

We agree that identification of solar energy zones (SEZs) and related transmission network upgrades and additions, through integrated land-use and transmission planning efforts informed by the DRECP, will provide greater certainty, resulting in a more orderly, rational, timely, and cost-effective state and regional transmission planning process.

We agree that coordination of local, state and regional land-use and transmission planning efforts will facilitate cost-effective, environmentally sound planning and permitting for transmission network upgrades and additions and transmission corridors to support SEZs.

We agree that optimizing use of existing transmission and corridors for SEZs, and prioritizing the planning, permitting, and development of new and expanded transmission and corridors for SEZs, is important for both economic and environmental reasons.

We appreciate that BLM submitted on January 20, 2012, a study request to WECC asking TEPPC to perform such analyses for the 17 proposed SEZs. We will support the agency's request at WECC and work with WECC/TEPPC to assure that the studies address the most important cases and critical factors.

We agree that a methodology to identify transmission network upgrades and additions and corridors to support SEZs, and to evaluate the associated costs and environmental impacts, is important. We agree, however, that the methodology utilized in the Transmission Analysis in Appendix D is inadequate and could be misleading.

[8] In making this recommendation, it is not our intention to discourage or have the BLM discourage novel solutions that might emerge from RDEP or any other process.

We offer the following recommendations to improve coordination, integration of land use and transmission planning, and to improve the transmission analysis methodology:

a. Coordination

- For California, enter into a memorandum of agreement (MOA) with CAISO and CPUC to formalize coordination in efforts to provide both the strategic planning and project permitting needs necessary to provide timely transmission network upgrades and additions to support SEZs.
- Coordinate with the CAISO's Transmission Planning Process (TPP) to ensure that transmission upgrades and additions needed to support SEZs are considered for inclusion as "policy driven projects".
- Coordinate with the CPUC Long Term Procurement Process (LTPP), as informed by DRECP, to direct renewable energy development to high resource value, low conflict SEZs.
- Seek similar MOAs with the relevant regulators and transmission planners in the other five states within the PEIS study area that will result in prioritized consideration of transmission network upgrades and additions and transmission corridors to support SEZs.
- Coordinate with the WECC regional transmission planning efforts to ensure consistency and compatibility across the west.

b. Integration

- Prioritize the designation of seamless, contiguous, strategically sized transmission corridors on public and private lands to facilitate transmission network upgrades and additions to safely and reliably support SEZs throughout the west.
- Ensure designated corridors include sufficient right-of-way to support network upgrades and additions, over public and private lands. Designated corridors on public lands should be withheld from other uses by DOI consistent with PEIS planning horizons. Designated corridors on private lands should be held for future use consistent with PEIS planning horizons.
- Work with relevant transmission planning entities to ensure that they identify transmission system upgrades and additions to BLM, including collector substations, network upgrades, downstream upgrades, and related infrastructure sufficient to support renewable energy development in the SEZs and to maintain a reliable and safe electrical system.
- Proximity to existing transmission lines does <u>not</u> guarantee availability. Transmission lines located in proximity to SEZs may not necessarily have sufficient capacity to accommodate the anticipated renewable generation in SEZs.
- Encourage the use of existing roads, transmission rights-of-way, and corridors, wherever possible, consistent with all applicable reliability planning criteria required by the North American Electricity Reliability Corporation (NERC), Western Electricity Coordinating Council (WECC), and the California Independent System Operator (CAISO).
- Work to ensure sufficient transmission will be available at the time that generation is anticipated to be placed on line within the zone, by:
    - Working with relevant transmission planning entities to ensure that they identify transmission upgrades, additions, new or expanded corridors, and related infrastructure in sufficient detail so as to facilitate timely permitting by local, state, and federal entities.
    - Working with relevant permitting authorities to prioritize and expedite interagency permit processing for transmission network upgrades and additions in support of SEZs.

- Near-term priority should be given to transmission network upgrades and additions that may be needed to serve geographic areas that have been identified as potential high solar resource value, low environmental/cultural conflict locations such as the Western Mojave and Chocolate Mountains.
- Establish a policy to extend federal jurisdiction for Section 7 consultation to transmission network upgrades and additions and corridors, on federal and non-federal lands, that serve SEZs.
- Coordinate with state and federal permitting agencies to ensure that mitigation requirements for transmission network upgrades and additions and corridors are appropriate, and not redundant.
- Consider incentives to direct investments in high value solar technology to high resource value areas served by transmission.

c. Transmission Analysis

The Test Case Transmission Analysis for the Proposed Brenda SEZ is inherently flawed. The analysis was performed without taking into account other SEZs, and may suggest that power can be readily exported from the Brenda SEZ to the Los Angeles load center without downstream upgrades and without accounting for generation projects in the queue.

The final PEIS should instead provide for BLM to work with the relevant transmission planning entities to identify and designate transmission corridors sufficient to support transmission network upgrades and additions needed to deliver power from SEZs to load centers, taking into account all relevant factors, including the potential energy deliveries from a SEZ, optimizing existing infrastructure, and minimizing the need for new corridors and infrastructure.

CONCLUSION

The signatories to this letter have worked hard to reach the agreements set forth in this letter. We thank you in advance for your serious consideration of our recommendations.

Sincerely yours,

Daniel M. Adamson
Solar Energy Industries Association

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The Vote Solar Initiative

/s/

Felicia L. Bellows
Torresol Energy

Jamie Rappaport Clark
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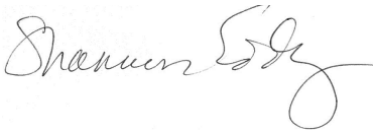

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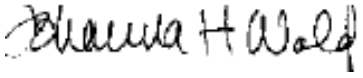

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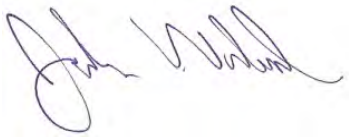

John M. Woolard
BrightSource Energy

Thank you for your comment, Jill Yung.

The comment tracking number that has been assigned to your comment is SEDDsupp20178.

Comment Date: January 27, 2012 20:42:04PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20178

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January 27, 2012 76145.00002

VIA OVERNIGHT USPS & INTERNET

Solar Energy PEIS
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Argonne, IL 60439

Re: Comments of the Solar Energy Industries Association and the Large-scale Solar Association on the Supplemental Draft Solar PEIS

When we prepared our comments on the Draft Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States ("Draft PEIS" or "DPEIS"), the fledgling utility-scale solar industry and the Bureau of Land Management ("BLM") were still celebrating their accomplishments of 2010. With nine projects and an expected 3,671 megawatts ("MW") approved for development, the immediate future for large-scale solar development on public lands was promising. The prospect of federal loan guarantees, though limited in duration, further shored up confidence that the solar industry could radically change our energy supply chain to fight climate change and maximize the utility of our public lands.

Even at a time when confidence was high, however, our clients, the Solar Energy Industries Association ("SEIA") and the Large-scale Solar Association ("LSA"), and their member companies (collectively, the "Solar Industry"),[1] had significant concerns that the Draft PEIS, intended to facilitate near-term utility scale solar energy development on public lands, would instead foreclose the possibility of significant new development. Our prior comments noted that the proposed Solar Energy Zone ("SEZ") approach was underdeveloped and consequently too restrictive. Among our many recommendations, we called for a flexible process for approving applications in areas outside of SEZs (other than in high conflict areas) that would remain in place at least until BLM designated SEZs of sufficient size and number in areas where development would be feasible.

When the Department of the Interior ("DOI") announced in July, 2011, that BLM and the Department of Energy ("DOE") would prepare a supplemental draft of the PEIS ("Supplemental Draft PEIS" or "SDPEIS") to "address key issues . . . including developing well defined criteria for identifying solar energy zones; incentives for encouraging developers to site their projects in the zones and a variance process for those who wish to develop facilities outside such zones; [and] additional surveys of biological and cultural resources in the zones",[2] the Solar Industry had expectations that the SDPEIS would respond to its

[1] As noted in our May 2, 2011 comment letter on the Draft PEIS, LSA and SEIA are coalitions of solar companies that seek to promote the environmentally responsible development of solar energy and associated transmission. SEIA and LSA are committed to working with the Department of the Interior ("DOI"), Department of Energy ("DOE"), and other federal agencies, environmental and conservation organizations, Native American tribes, state agencies, and other stakeholders to achieve this goal.
[2] BLM, Salazar Approves Major Renewable Energy Projects, Identifies Next Step in Solar Energy Development (July 14, 2011) (News Release), *available at* http://www.blm.gov/wo/st/en/info/newsroom/2011/july/NR_07_14_2011A.html.

concerns. We were thus surprised to find in the Supplemental Draft that instead of increasing the number and size of zones, BLM reduced the already limited opportunities for development in SEZs by over 50 percent (in terms of acres); instead of creating a temporary and manageable variance process to bridge the gap between where SEZs were and where they needed to be, BLM adopted demanding new criteria that appear to lack a peer-reviewed scientific basis; and instead of conducting additional surveys to reduce the potential for resource conflicts in the proposed zones, BLM relied on unverified concerns in comment letters to take more land out of development. The end result was a planning document that in many ways poses an even greater threat to the future of solar development than the original draft.

The additional impediments to solar development proposed in the SDPEIS come at a particularly tough time for the Solar Industry. Financing has become increasingly more difficult to secure and rampant underbidding by new speculators in the market has interfered with efforts by more experienced developers to finish what they started and apply the lessons learned from the first round of development to new projects. Now is not the time to put more challenges in front of the Solar Industry if it is to meet the national goals established by and for DOE, BLM, and DOI.

Despite lingering concerns about the current state of the PEIS, we appreciate the significant amount of work that has gone into its development and recognize that BLM has a pressing need to finalize a program that will provide a foundation for a holistic approach to the simultaneous development of multiple utility-scale solar projects on public land. On behalf of the Solar Industry, we have therefore focused our comments on constructive suggestions that BLM and DOE can implement without further delaying the release of the PEIS. From the perspective of the Solar Industry, these changes are essential if the PEIS is to accomplish its primary objective: to facilitate environmentally responsible and technically and economically feasible utility-scale solar siting, permitting, and development over the long-term.

The SDPEIS strongly suggests that BLM is leaning towards the Modified Program Alternative, which in contrast to the Modified SEZ Alternative and the original SEZ Program Alternative, would allow for at least some development outside of SEZs. This development throws the variance process in particular into sharp relief and has also shifted our focus to the exclusion area criteria. As a result, some of our comments here will address material that appeared in both the original Draft and the Supplemental Draft. In sum, those comments are as follows:

1. Pending Applications: Due to some potentially confusing statements in the SDPEIS, the Solar Industry believes that BLM must clarify that pending applications, as that term is defined on page 1-9, will be evaluated under existing policies and not subject to the design requirements, mitigation requirements, or any other criteria that will apply to future applications, as required by the forthcoming Record of Decision ("ROD") for the PEIS and/or the PEIS itself.

2. New Zones: Even with the prospect of approval for pending applications and the 285,000 acres made available for development within the proposed SEZs, BLM should recognize that the SDPEIS does not provide sufficient development opportunities. The SDPEIS took zones that were already too small and too few and whittled them down even further. Subtracting acres in zones that have pending and approved applications, only 223,884 acres are now actually available for new projects and these acres have not been allocated pursuant to a plan to facilitate clustered development. With a median size of only 5,873 acres, most SEZs can support only one or two utility-scale projects. In addition, some potentially useful zones are already full. For example, of the 5,717 developable acres in the Imperial East SEZ, only 1,770 are not subject to

an existing application. The recognition that zones are inadequate should provide a basis for BLM's priorities in implementing the PEIS in the immediate future.

3. Flexible Variance Process: BLM should adopt a workable variance process that will avoid the creation of a de facto moratorium on new solar projects on public lands while BLM locates, studies, and approves much needed new SEZs. The variance process proposed in the SDPEIS, and the lands the SDPEIS would open to variance applications, are not sufficient. Although the SDPEIS makes 20 million acres of land available in variance areas, only 1.2 million acres are in California, near load and transmission. The Final PEIS should relocate a significant amount of the variance acres to areas where renewable energy generation facilities are in demand. In addition, BLM should clarify that the "factors" listed for obtaining a variance are largely just individual considerations for BLM's process when deciding whether to grant a variance.[3] Even with this clarification, certain variance application factors (located in low, not moderate, resource conflict areas, caps on the number of desert tortoise, and requirements to minimize transmission and infrastructure development and water use) should be eliminated or significantly modified. These factors, as drafted, are not essential to ensure smart from the start development across the entire area of the PEIS.

4. Height and Technology Limitations in SEZs: The proposed height and technology limitations are excessive, as they would exclude even efficient alternative photovoltaic ("PV") technologies (e.g., PV with trackers) and thereby provide perverse incentives to increase project footprints. Furthermore, the presumption that taller technologies will have greater impacts on visual resources is questionable. The 10 foot height limit and PV-only limitations on more than 25% of the SEZ acreage should consequently be eliminated, with visual considerations applied only on a case-by-case basis in the National Environmental Policy Act ("NEPA") environmental review process to mitigate actual visual impacts exacerbated by project height.

5. Exclusion Areas: BLM should not identify exclusion areas based on arbitrary, and misguided, assumptions about the technical and economic limits of solar energy generation technologies. Along these lines, BLM should not exclude lands based on technological factors including slope and insolation. In addition, BLM must provide more concrete definitions for exclusion criteria that are currently vague and subjective. Some limits on the currently unbridled discretion of BLM staff to designate exclusion areas are also needed. More generally, as noted in the Solar Industry's comments on the Draft PEIS, BLM needs to provide transparency regarding what lands are excluded and for what reasons.[4] A map depicting the exclusion areas associated with each

[3] For a few of the variance factors, it would make sense to apply them as requirements. For example, applicants should be required to demonstrate technical and financial capabilities, as is the case under existing BLM policies. A requirement that provides some limitations on development that conflicts with desert tortoise populations should also be imposed, but, as explained in more detail below, Desert Tortoise Variance Requirement Option 2 is not the appropriate solution.

[4] *See* DPEIS at 2-9 to 2-10 (recognizing that the exclusion areas maps represent an amalgam of the following considerations: slope greater than or equal to 5%; average solar insolation of less than 6.5 kWh/m2/day; critical habitat for threatened or endangered species as designated by the USFWS; "and the following areas designated under various BLM programs: Areas of Critical Environmental Concern (ACECs); Desert Wildlife Management Areas (DWMAs); flat-tailed horned lizard habitat, Mohave ground squirrel habitat; ROW exclusion and avoidance areas, No Surface Occupancy (NSO) areas, and Special Recreation Management Areas (SRMAs)"); *id.* at 2-10 (recognizing that "Exclusion areas that could not

exclusion criteria would most effectively convey this information. Finally, BLM should not exclude areas from development based on criteria that it has previously identified as a medium conflict indicator without a transparent and sound scientific basis for determining that such conflicts are too difficult to resolve.

6. The Importance of Transmission in Selection of Zones: BLM should establish a clear process for the expedited selection of new zones that additionally takes into account existing transmission or the prospects for development of new transmission. BLM's current pledges to participate in regional transmission planning efforts do not provide the meaningful commitment that is required. (*See, e.g.*, SDPEIS at p. 2-25.) When it comes to creating much needed new SEZs, BLM cannot wait for other proceedings that might identify one or two additional zones, but are otherwise focused on different purposes and needs. BLM should already be studying the areas surrounding the locations of leading transmission proposals so that it will be in a position to approve the development of projects almost as soon as decisions regarding transmission are made.

7. Transmission Analysis: BLM should expand its transmission analysis to include additional factors. Thermal rating, without a power flow analysis, provides BLM with only a partial picture of what existing variables already constrain transmission. In relying exclusively on this consideration, BLM overlooks "parallel" or loop flow (power from a source to sink will travel multiple paths). The approach taken in the SDPEIS also ignores the required contingency analysis, which will conclude that a line is "full" to cover a contingency even if the line could, under normal conditions, physically carry additional capacity. Finally, the model transmission analysis that BLM proposes to follow does not take into account the massive queue that has built up in California and other western states. Developers have already spoken for significant amounts of hypothetical transmission.

As drafted, the SDPEIS offers (1) inadequate zones, (2) a troubling and uncertain variance process, and (3) arbitrary exclusions. For the reasons given above and below, immediate action is needed to address these issues. If these issues cannot be addressed, the Solar Industry would urge the DOI and the BLM to adopt the No Project Alternative. The following discussion provides guidance on how we believe these issues can and should be addressed in a manner consistent with BLM's other priorities.

I. PENDING APPLICATIONS

The SDPEIS states that pending applications will be subject to "continued processing under existing policies,"[5] including the February 2011 Instruction Memoranda (Nos. 2011-059 to 2011-061) (hereinafter "IM 2011-059" and "IM 2011-061", respectively).[6] The rest of the SDPEIS is consistent with this statement, with the exception of a statement on page 1-11, which says:

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be mapped due to lack of data would be identified during pre-application consultations with local BLM staff or site-specific evaluation of individual ROW applications").

[5] SDPEIS at p. 1-9 (Table 1.7-1).

[6] Available at: http://www.blm.gov/wo/st/en/info/regulations/Instruction_Memos_and_Bulletins/national_instruction/2011/IM_2011-59.html; http://www.blm.gov/wo/st/en/info/regulations/Instruction_Memos_and_Bulletins/national_instruction/2011/IM_2011-061.print.html.

> Pending applications on lands proposed as exclusion areas for utility-scale solar energy development in the Final Solar PEIS are likely candidates for denial.

BLM should delete this sentence. The PEIS otherwise makes clear that *all* applications[7] that qualify as pending applications, as that term is defined on pages 1-9 and 1-10 and in Table 1.7-1, should be subject to existing policies and not subject to the PEIS ROD. In light of the fact that BLM is not making sufficient lands available to support state and federal renewable generation development goals in the near term, it is critical that viable pending applications are treated fairly in the permitting process and not rejected out-of-hand because of lines subsequently drawn in the PEIS. These applications will undergo site-specific review as required by NEPA.[8] They were furthermore considered by BLM and have been consistently exempted from the requirements of the forthcoming PEIS ROD in both drafts of the PEIS. Any retroactive change in the status or approval process applicable to these projects could considerably stall the near-term development of utility-scale solar facilities—a result that could have significant environmental consequences not previously considered in the PEIS. Consistent with applicable legal requirements, BLM must consequently continue to process these applications under the framework in place before they came within the scope of the PEIS.[9]

At the same time, consistent with Instruction Memorandum No. 2011-060,[10] the Solar Industry strongly encourages BLM to seek confirmation of financial and technical capability from applicants for projects in the five states other than California (where such an audit was already performed in 2011) to winnow out speculative applications. (*See* Attachment B at p. 3 (May 2, 2011 Solar Industry Comment Letter).) This exercise will give BLM a better sense of the amount of land being made available for solar projects under the PEIS—and the generating capacity of the program—and requires a minimal expenditure of resources.

II. THE VARIANCE PROCESS MUST BE CLARIFIED AND MADE MORE FLEXIBLE

The SDPEIS provides a set of Variance Application Factors that will be "considered" by BLM when evaluating variance applications. Certain factors, however, describe "requirements" that applicants would need to satisfy to move an application forward. The Department has indicated that the variance factors will generally be treated as circumstances to be considered when evaluating an application. The Solar Industry views this interpretation as being essential to the success of the Solar Program, and further notes that if the variance factors were instead applied as requirements, virtually none of the 20 million acres classified as variance areas would be available for development. To ensure that variance lands represent a real option for siting projects, something that is critical in light of the limited amount of land

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[7] BLM should clarify that "pending applications" include second and third in line applications filed before the applicable deadlines. BLM should also clarify that amendments to previously approved applications are pending applications for the purposes of the SDPEIS.

[8] The PEIS should make clear that in performing this NEPA review, BLM will not rely on the maps or the resource determinations of the PEIS to inform its pending project NEPA analyses. Those analyses should not, explicitly or implicitly, tier off of the PEIS.

[9] We note that Appendix A does not contain the universe of known pending applications as BLM has defined that term. The Final PEIS should correct Appendix A and present a complete list. For clarity the list should include both "first in line" and later in line applications that qualify as "pending" based on their filing date.

[10] Available at: http://www.blm.gov/wo/st/en/info/regulations/Instruction_Memos_and_Bulletins/national_instruction/2011/IM_2011-060.print.html.

available in SEZs, BLM should further clarify that the factors should be evaluated individually, not cumulatively.

Establishing that the factors are "considerations" and not requirements is, however, only the first step in the process of providing much needed clarity on how the variance factors will operate. Certain factors are somewhat ambiguous or outright inappropriate. We therefore urge the following modifications:

A. Minimal conflict factors

The SDPEIS states that BLM will, when evaluating a variance application, consider "Documentation that the proposed project will be located in an area with low resources value and where minimal conflict with adjacent lands is likely (e.g. . . . brownfields . . . ;. . . . fallowed agricultural lands; [etc.])."[11] While these types of "minimal conflict" lands would be ideal sites for development and could be awarded special preference, in practice they generally do not exist on BLM land. Nor do we know of project land potentially "adjacent" to such lands.[12]

The failure to provide a workable variance process would essentially impose a moratorium on new utility-scale solar projects for the foreseeable future. To avoid this bleak future, BLM should ensure that the variance process is not unduly burdensome. Instead of requiring that variance projects be located in minimal conflict areas, BLM should allow the siting of such projects in the designated variance areas (i.e., not exclusion areas) that additionally do not meet any of the "high conflict" criteria set forth in BLM's Instruction Memorandum on pre-application and screening criteria for solar and wind energy applications (IM 2011-061) (describing characteristics of high, medium, and low conflict lands).

BLM has adopted most of the medium conflict criteria in the Instruction Memorandum as exclusion area criteria. The PEIS would therefore, for the most part, leave only the low conflict lands available for development. Even this approach, however, would be significantly less restrictive compared to the least/minimal conflicts standard in the SDPEIS. Specifically, under the Instruction Memorandum, as modified to account for the exclusion criteria in the SDPEIS, BLM could, and should, allow projects in the following areas:

- Lands specifically identified for solar or wind energy development in BLM land use plans;
- Previously disturbed sites or areas adjacent to previously disturbed or developed sites;
- Locations that minimize construction of new roads and/or transmission lines;
- Lands adjacent to designated transmission corridors;
- Lands that are not excluded due to their visual resource classification, subject to review and additional mitigation where required;
- Lands identified as suitable for disposal in BLM land use plans;
- Lands with wilderness characteristics outside Wilderness and Wilderness Study Areas that have been identified in an updated wilderness characteristics inventory, where conflicts can be resolved;

[11] SDPEIS at p. 2-35 (lines 8-16).
[12] A group of solar companies and environmental groups previously suggested that a "low conflict" approach would involve certain lands that would be "minimal" conflict and "avoid" certain lands that were high conflict, but no company has *ever* suggested that "minimal" conflict lands alone would qualify for a variance.

- Department of Defense operating areas, including areas with significant radar, airspace, or land use conflicts, where conflicts can be resolved;
- Areas where project development may adversely affect lands acquired for conservation purposes, where conflicts can be resolved;
- Areas with relatively low conflict characteristics that are adjacent to private lands that might be used for development; or
- Areas within groundwater basins that have been over appropriated by state water resource agencies, where a project proposes small or insignificant groundwater uses or commits to provide mitigation measures that will reduce the project impacts to an insignificant level.

In addition, we discuss below certain exclusion area factors (criteria that are akin to the medium conflict criteria in the Instruction Memorandum) that are inappropriate. To the extent that any of the criteria identified below are removed from the exclusion area criteria list, that change should open up those lands to variance applications, to the extent that those lands do not meet other exclusion area or high conflict area criteria.

If these standards are applied instead of the least/minimal conflict standards, variance projects might have a real chance of being sited and approved in appropriate areas. It is absolutely necessary for Solar Industry to have a real variance development option, at least initially, to compensate for the inadequate size and number of existing zones.

B. Desert Tortoise "Variance Process Requirements"[13]

The SDPEIS describes two options for "Desert Tortoise Variance Process Requirements." Option 1 would not impose any special variance requirements and would "consider all variance applications within the range of desert tortoise on a case-by-case basis in coordination with the [United States Fish and Wildlife Service ('USFWS')]." (SDPEIS at p. 2-35.) In stark contrast, Option 2 states that applicants for projects within the range of desert tortoise, outside of proposed connectivity areas, "*must provide*" documentation that tortoise density for the proposed project site is less than or equal to five tortoises per square mile, that the number of tortoises that would need to be translocated would be less than or equal to 35, and that the project will maintain at least one three mile wide, minimally disturbed connectivity corridor. (*Id.* at p. 2-35.) Applications within "proposed" connectivity areas will generally be discouraged, unless applicants can, after surveying an area three to four times larger than the proposed project site, identify a location for the project where tortoise density is less than or equal to two tortoises per square mile and native vegetation communities are degraded. (*Id.* at pp. 2-35 to 2-37.) The Solar Industry favors Option 1, because Option 2 has several unsupported, rigid requirements that have no place in the permitting process and no scientific basis.

The Solar Industry understands that the USFWS revised Desert Tortoise Recovery Plan ("DTRP") issued in May 2011 supports translocation density and movement corridor limitations. However, we have seen *nothing* in the revised DTRP to support the restrictive numerical limits in Option 2. The proposed numbers appear to have been pulled from thin air; no publically available or peer review document

[13] The title of this subsection on page 2-35 illustrates why the Industry has valid concerns about BLM's intent with regard to how it will use the variance "factors."

appears to justify them.[14] The desert tortoise Proposed Connectivity Areas map on page 2-36 similarly lacks a meaningful explanation and/or demonstration of widespread support from the scientific community. Indeed, a recent US Geological Survey ("USGS") study of the published literature concluded that "[p]ublished scientific information on the effects of any form of renewable energy development . . . is scant," and the limited research done to date has largely focused on the impacts of wind farms on birds and bats.[15] Neither the DTRP nor the recent USGS article serves as a basis for the lines drawn on the Proposed Connectivity Areas map.[16]

A search of the Mojave Desert Ecosystem Program Voyager GIS database further does not reveal a layer consistent with the Proposed Desert Tortoise Connectivity Areas as mapped in Figure 2.2-2. The reasonableness of the proposed connectivity area boundaries consequently cannot be assessed using publicly available information. It is furthermore impossible to assess the impact of the proposal on specific lands because the map is so small and obscured by certain features, such as highway labels. To ensure that public participants can make thoughtful, informed comments on this map, BLM must provide a description of the base layers and GIS processing techniques.

Given what some SEIA and LSA member companies know from their specific development experiences, the representations made in the Proposed Connectivity Areas map are questionable. BLM must explain the basis for the Proposed Connectivity Areas map (Figure 2.2-2) before drastically departing from its prior determinations. If BLM cannot provide a scientific basis for the map, then it should be removed from the PEIS.

The Solar Industry does not intend to develop solar projects in high-density desert tortoise areas and agrees that such areas should be avoided. However, rigid numerical requirements with no foundation in scientific evidence are improper and unjustified. The USFWS has not hesitated to intervene in specific areas where it has had concerns about connectivity.[17] Similarly, BLM has previously taken movement corridors and the contributions of a project to habitat fragmentation into account. The "new" emphasis on connecting functional habitat in the revised DTRP is not new to these agencies and BLM has provided no

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[14] Indeed, in the Revised Biological Opinion for the Ivanpah Solar Energy Generation System ("ISEGS"), issued *after* the revised DTRP, USFWS explained that linkage areas must be determined on a case-by-case basis and further determined that a 1.4 mile linkage area would be sufficient for that project. (USFWS, Biological Opinion on BrightSource Energy's Ivanpah Solar Electric Generating System Project at 72 (June 10, 2011), *available at* http://www.blm.gov/pgdata/etc/medialib/blm/ca/pdf/needles/lands_solar.Par.71302.File.dat/ISEGS_Reinitiation,%20Final%20BO.pdf.) The Desert Sunlight Biological Opinion also has a narrower requirement.

Three mile-wide connectivity corridors are not present throughout the range of desert tortoise even under natural and historical conditions. The Mojave population of desert tortoise has historically been well connected even in the presence of connectivity corridors much narrower than three miles. Stating that connectivity corridors of this size are *required* for the continued genetic flow of the desert tortoise thus directly contradicts best available science (Murphy et al. 2007; Hagerty and Tracy 2010).

[15] Jeffry E. Lovich & Joshua R. Ennen, *Wildlife Conservation & Solar Energy Development in the Desert Southwest, United States*, BioScience, Dec. 2011, at 982.

[16] Indeed, the PEIS should not rely on the USGS study at all, given that the study itself relies on the Draft PEIS to support observations about the desert tortoise, such as the observation that the species' "very presence at a site may be sufficient to exclude [utility-scale solar energy development] in special cases . . . ." *Id.* at 984.

[17] Industry remains quite concerned regarding the scientific basis behind the connectivity issue.

explanation for its proposed departure from case-by-case, site specific evaluations in coordination with the USFWS to determine whether desert tortoise considerations, including the feasibility of translocation, should work to prohibit development in a particular area. Again, at this time, the Solar Industry unanimously favors Option 1 over the arbitrary numeric limits that would apply under Option 2. At the very least, procedural safeguards—not numeric criteria—should be used to address potential conflicts between utility-scale solar projects and desert tortoise populations.

C. Transmission and infrastructure minimization requirements

The requirement to include a transmission plan ("[d]ocumentation that the proposed project will minimize the need to build new roads and/or transmission infrastructure")[18] in the Plan of Development ("POD") (alternatively, the variance application) could significantly and unnecessarily delay the permitting process in states where the transmission planning process is protracted and cumbersome. For example, in California the current wait time for transmission analyses is up to 24 months and utilities only accept applications at certain times of the year.[19] Developers should only be required to include an *estimated schedule for completion* in the POD. Applicants can then be required to submit the transmission analysis when it is available.

Similarly, variances should not be restricted to areas where "minimal" additional infrastructure (transmission, roads) will be needed. This requirement precludes the possibility of expanding existing transmission to new locations and sets up an artificial barrier for variances in areas where solar development would otherwise be allowed and transmission can be built. As BLM recognizes elsewhere in the SDPEIS, "it is likely that most new utility-scale solar energy development will require new transmission capacity . . . ." (*Id.* at p. 2-69.) At the very least, if infrastructure needs are a factor, "minimization" should not be objective. BLM could instead consider whether an applicant can demonstrate that it will optimize the capacity of existing and new infrastructure and avoid duplication in the use of or need for existing and new transmission, transmission interconnect facilities and access infrastructure.

D. Minimize impacts on water

The PEIS additionally proposes to require "[d]ocumentation that the proposed project will minimize impacts on water resources." (SDPEIS at p. 2-37.) Water use and groundwater impacts are site-specific considerations that should be addressed through the NEPA process and other applicable law. Companies should be encouraged to, and in some cases may be required to, optimize their technology's efficiencies with respect to water impacts. On top of this, mitigation measures may be imposed. A general requirement to "minimize impacts on water resources" (whatever that might mean) is an unworkable standard that is not suited to be a programmatic consideration.

E. Additional layers of pre-application process

[18] SDPEIS at p. 2-37.

[19] The California Independent System Operator Corporation ("CAISO") interconnection process currently restricts the submission of new applications to an Annual Interconnection Request window that opens and closes every March. CAISO's interconnection study process starts in June and takes 420 days. These steps must be completed before a developer can sign a Generator Interconnection Agreement.

Although not discussed in the Pre-application Meeting section (SDPEIS at p. 2-33), the Variance Process describes a public outreach requirement that would precede BLM's acceptance of a project for *subsequent* review under NEPA. (SDPEIS at p. 2-40 (describing a "pre-scoping public meeting that falls outside of the NEPA process for variance applications").) The public outreach process should begin with NEPA. The Variance Process should not introduce another layer of public review.

Along these same lines, the SDPEIS should not require Class III cultural resource surveys *before* an applicant may submit an application. (*See* SDPEIS p. 2-38.) Such surveys are extremely expensive. Applicants thus might waste hundreds of thousands of dollars to survey proposed project sites that BLM could reject from the outset for other reasons. For purposes of evaluating a variance application, BLM should instead require Class I or II cultural surveys, which can be used to identify areas of potential effect ("APEs"). The information obtained from these less rigorous protocols is entirely appropriate, and suitable, for use by BLM when evaluating applications. BLM should avoid expensive, premature survey requirements, as requiring developers to invest in a site early on will only discourage them from considering other locations.

F. General comments on the Variance Process

The variance areas should not be further reduced in the Final PEIS, as BLM suggests they will be on page 2-33 ("As the BLM continues to refine the list of proposed exclusions under the modified program alternative . . . the amount of land in variance areas will likely be reduced."). The exclusion areas, as explained in more detail below, are already too large. In addition, further restrictions on the development of utility-scale solar energy generation facilities, which could for the most part be permitted today after complying with NEPA, will expand the scope of the federal action being undertaken in the SDPEIS and could affect the environmental effects in a variety of ways. Unlike restoring opportunities for case-by-case evaluations of project applications (i.e., expanding variance areas), which BLM has analyzed as part of the No Action Alternative, significantly expanding the exclusion areas in the ROD for the PEIS could trigger a requirement to perform additional environmental review.

In general, there is obviously a tension between putting restrictions on variances so as to encourage zonal development, and lessening restrictions on variances (still subject to all biological and cultural screens) because the zones at this time are so inadequate. Until zones are adequate, however, BLM must provide a workable variance program, to ensure that development opportunities on public lands are not unduly constrained and to allow the use of public resources to achieve national renewable energy production objectives.

III. RESTRICTIONS IN PROPOSED ZONES

The current height and technology limitations are excessive, as they would exclude even efficient PV technologies (*e.g.*, PV with trackers), as well as taller, more land efficient power towers, and thereby provide perverse incentives to increase project footprints. Furthermore, the presumption that taller technologies will have greater impacts on visual resources is questionable. Any decision to allow solar development will create some visual contrasts from some vantage point. From a distance or from an elevated position, however, the impact of 10 foot panels on visual resources will not be appreciably different from the impact of 20 foot panels, troughs, or in many cases, power towers.

The 10 foot height limit and PV-only limitations on more than 25% of the SEZ acreage[20] should be eliminated, with visual considerations applied only on a case-by-case basis to mitigate actual visual impacts exacerbated by project height. Applied in this way, BLM could take into account whether height restrictions might mitigate impacts on visual resources based on the location of a project, the layout of its major components, and the number and types of viewers. BLM could further take into account the overall public reaction to a particular project. As recognized by BLM in the DPEIS, "[s]urveys have indicated that solar energy is generally viewed favorably by the public, because it is regarded as a nonpolluting, renewable resource, and it may be that, similar to wind energy projects, utility-scale energy development projects would be viewed less negatively or positively in terms of visual impacts as a result . . . ." (DPEIS at p. 5-162 (citations omitted).)

A blanket prohibition based on presumptions about the site-specific impacts of technology height is inappropriate. Visual impacts are but one of several factors that should be weighed in determining where to site a facility. Other factors include the energy production profile, efficiency of land use, and project viability (probability of obtaining Power Purchase Agreement ("PPA"), experience, financial strength, etc.). Unless a project is proposed in an area "*currently designated* as Visual Resource Management Class I or Class II", visual resource concerns alone should not provide the basis for an effective ban on development. (IM 2011-061 (discussing high conflict criteria; emphasis added).)[21]

IV. EXCLUSION AREAS SHOULD NOT BE BASED ON TECHNICAL CRITERIA OR THE UNBRIDLED DISCRETION OF BLM STAFF

The SDPEIS proposes to defined right-of-way ("ROW") exclusion area as "areas which are not available for location of ROWs under any conditions", a definition taken from BLM Land Use Planning Handbook H-1601-1. (SDPEIS at p. 2-15.) This unforgiving standard must be imposed with caution, particularly in the context of a program that is intended to last for a significant period of time and further intended to address a new and dynamically changing industry. More specifically, the criteria used to identify exclusion areas must include only the elements that are *essential* to preserving environmental values and must further be capable of uniform interpretation. Several of the exclusion criteria do not fit this vision.

A. Technical and Economic Criteria

Chief among the inappropriate criteria are those based on the presumed capabilities of developers' technologies: a 5% slope limit and a minimum insolation requirement of 6.5 kWh/m^2/day. Technology not only exists today, but is being deployed in the market, to make use of both higher slope and lower insolation lands.

As the SDPEIS notes[22], companies are currently building some parts of projects on slopes of up to 10% and in the future may be able to do more. A slope limitation of 5% is therefore antiquated, and does not have a reasonable basis. In addition, companies are now permitting and constructing projects in areas of

[20] Approximately 74,000 acres of SEZ land is restricted by the 10 foot height restriction. This height restriction effectively eliminates development in these areas of the SEZs.
[21] In addition, although we hope that BLM will do away with the unsupported and unnecessarily burdensome variance criteria identified in Section II, to the extent that any of these factors remain in effect BLM should clarify that they will not be applied to projects in SEZs.
[22] SDPEIS at p. D-3 (Appendix D).

the southwest with less than 6.5 kWh/m^2/day (*e.g.*, in the San Joaquin Valley). More broadly, large amounts of solar generation are coming on line in states such as New Jersey, where the insolation is far less than in the Southwest. The assumption that development will be uneconomic in areas with insolation levels of less than 6.5 kWh/m^2/day is not supported by real world evidence.

One compelling reason to drop technical criteria for exclusions areas is that such requirements might create "edge effects" by limiting the flexibility a developer has to modify its proposed project footprint to use adjacent (higher slope) lands to avoid environmentally sensitive areas. Excluding higher slope lands that could be developed in an environmentally-responsible fashion would increase sprawl, by eliminating the potential to maintain the planned size of a unit in one place and creating additional development pressure to generate the forfeited power at sites located elsewhere. At a minimum, if part of a project area exceeds the SPDEIS technology limits (typically, this would involve areas with higher slopes), then BLM should have the flexibility to approve the project as part of a case-by-case determination.

The exclusion of lands with solar insolation levels of less than 6.5 kWh/m^2/day is particularly inappropriate. As recognized in the DPEIS, BLM imposed this threshold based on *assumptions* about where utility-scale development is most economically viable.[23] To set the record straight, Direct Normal Irradiation ("DNI") measurements (represented as kWh/m^2/day) only assess the amount of solar radiation delivered to a particular area directly from the sun. For technologies that use mirrors of lenses for reflection/refraction (concentrating solar power, or "CSP"), DNI is the appropriate measure of the solar resource. These technologies require direct sunlight for efficient operation. However, conventional PV technologies use direct, diffuse, and even ground-reflected solar radiation (collectively, Global Horizontal Irradiation or "GHI"). DNI measurements consequently provide an incomplete assessment of the solar resource in a particular area as far as PV developers are concerned. Additionally, some CSP developers have determined that they can economically develop projects in areas with insolation levels as low as 5.5 kWh/m^2/day. Even if it might be appropriate to limit the development of utility-scale solar power plants on public lands based on a single factor in a developer's complex assessment of a project's economic viability, the 6.5 kWh/m^2/day threshold is not an appropriate or justified standard.

In addition, although the SDPEIS includes maps intended to depict the extent of the areas excluded based on insolation levels, the measurements for a given plot of land cannot be known without a site-specific study. The National Renewable Energy Laboratory ("NREL") solar resource estimates relied on to plot potentially appropriate development are regularly off by as much as 30%. Unlike previously designated Areas of Critical Environmental Concern, Desert Wildlife Management Areas, National Landmarks, etc., BLM cannot plot insolation on a map with certainty. Its usefulness as a screening tool on a programmatic level is consequently very limited.[24]

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[23] DPEIS at p. 2-7 ("That criterion was established on the basis of the *assumption* that at insolation levels below 6.5 kWh/m2/day, utility-scale development would be less economically viable given current technologies." (emphasis added)).

[24] Regarding insolation, BLM should also recognize that the economic viability of a project is not a concern for BLM under NEPA. Consistent with FLPMA, BLM must determine that the approval of a ROW application to develop and operate a utility-scale solar facility represents the highest and best use of the land. Because projects in variance areas will require a site-specific land use plan amendment as part of the ROW grant process, however, this determination is not part of the federal action being contemplated in the PEIS. BLM therefore has the legal authority to do the right thing and remove insolation from the list of exclusion criteria.

The Solar Industry believes that removing the insolation and slope criteria from the exclusion criteria list should not cause any environmental impacts or require further supplementation of the PEIS. Lowering the insolation floor and raising the slope ceiling, or removing these restrictions entirely, will likely increase the number of acres available in the variance area and thereby make additional land available for development after case-by-case NEPA analyses, as discussed below. However, all of the other exclusion criteria in Table 2.2-1 of the SDPEIS would still be in place to protect species, cultural resources and other environmental interests, wherever they are located. In addition, those lands—and much more—would be open to ROW applications for solar power plants under other alternatives considered in the SDPEIS and under existing rules. The proposed changes consequently do not make a decision, irreversible or otherwise, that would open more lands to development; rather, they simply take less land out of the current inventory of potential sites compared to other alternatives considered in the PEIS. The public has had a meaningful opportunity to comment on this and was given notice that the exclusion criteria may be too restrictive to allow sufficient land for solar energy development. (*See, e.g.*, SDPEIS at p. 2-69.) This change would not call into question the SDPEIS' sufficiency as an informational document.

In addition, the impacts assessment that begins on page 2-51 (Table 2.3-2) repeatedly states that although several types of impacts could be significant across the 20 million acres of proposed variance areas, "impacts could be minimized due to the required variance process." In other words, impacts from development in the variance areas are expected to be handled on a case-by-case, site-specific basis. The environmental impacts of moving a project onto higher slope lands and economic impacts of operating a project in an area with a lower insolation rating can be handled through that process.[25] The alternative, arbitrarily imposing technology-based screening criteria to restrict use of the public lands based on assumptions about the technology, would be clearly erroneous—especially in light of the fact that the Solar Industry has demonstrated that the assumptions are wrong.[26]

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[25] To further guard against allegations that removing these exclusion criteria might trigger the need to do a further supplemental review, BLM could instead allow applicants to propose an "override" of the exclusions through the variance process, at least in areas where slope, insolation, and other developer technology constraints are the source of the exclusion. BLM would, of course, still subject these override application to a full site-specific impact review under NEPA. Alternatively, BLM could allow applicants to depart from the slope and insolation exclusion criteria on a case-by-case basis, offsetting any additional land thereby developed by retiring other variance lands in the vicinity of a project that receives insolation or slope exceptions. Either of these options would further reduce the significance of the proposed changes. To be clear, however, the Solar Industry believes that simply deleting slope and insolation exclusion criteria would not "affect the quality of the human environment in a significant manner or to a significant extent not already considered . . . ." *Marsh v. Or. Natural Res. Council*, 490 U.S. 360, 374 (1989) (citation and quotation marks omitted) (describing the threshold for requiring a supplemental EIS).

[26] Some stakeholders will undoubtedly suggest that removing the technology-based exclusion criteria would trigger the need for yet another supplemental draft PEIS. Under NEPA, an agency must supplement a draft or final EIS where "[t]he agency makes substantial changes in the proposed action that are relevant to environmental concerns," or where "[t]here are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts." 40 C.F.R. § 1502.9(c)(1)(i)-(ii). However, "an agency need not supplement an EIS every time new information comes to light [or a change is made in the project design] . . . . To require otherwise would render agency decision making intractable." *Marsh*, 490 U.S. at 373. Rather, a supplement is required only where new information, or changes in the project, could lead to federal action that will affect the

B. Transparency

The process for excluding areas also needs more transparency. Most of the criteria on pages 2-16 and 2-17 are biological and cultural, and most are based on previously published data. The SDPEIS, however, does not provide clear references to the sources of these exclusions. The SDPEIS also fails to specify the criteria relied upon for particular exclusion area designations ("pink lands" on the various maps) and does not provide detailed maps that might allow companies to determine the basis for excluding specific acreage. BLM needs to add this detail to the final PEIS to ensure that the public has access to relevant information about the impacts of each exclusion.

C. Vague and subjective criteria

In addition, certain biological and cultural reasons for excluding lands require further definition and a sound legal or scientific basis for their imposition. Several of the proposed exclusions are vague and destined to be applied inconsistently across different decision makers. For example,

- Exclusion number 8 would prohibit development on lands "where BLM has made a[n unspecified] commitment to take certain actions with respect to sensitive species habitat, including . . . Mohave ground squirrel habitat . . . [and] fringed-toed lizard habitat." This standard should specifically identify authoritative commitments that could properly prohibit development and how they are established.
- Exclusion number 20 would require the exclusion of "additional lands outside the designated boundaries [of properties listed in the *National Register of Historic Places*] to the extent necessary to protect values where setting and integrity is critical to their designation or eligibility." The application of this standard, as drafted, could result in the exclusion of land based purely on individual staff members' sense of what is "necessary", which would not be a proper basis to prohibit development.
- Exclusion number 21 would preclude development in "areas with important cultural and archeological resources", leaving it to BLM field officers to determine, in their unbridled discretion, whether particular resources meet an undefined notion of "important." Again, this would not provide a proper basis to prohibit development.
- Exclusion numbers 25 ("lands within a solar energy development application found to be inappropriate for solar energy development") and 26 (lands previously proposed for inclusion in a SEZ and later (in the Supplemental Draft) deemed to be inappropriate) should only be excluded if they have been carefully studied in a manner that is equivalent to the detailed study of a project study area *and the study results indicate that the area would have high, if not insurmountable, resource conflicts*; exclusions should not be based on presumptions or unsubstantiated concerns

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quality of the human environment in a significant manner or to a significant extent *not already considered* . . . ." *Id.* at 374 (citation and quotation marks omitted, emphasis added). The impact of not imposing slope and insolation screening criteria was considered in the draft documents as part of the No Action Alternative. In addition, the SDPEIS relies on site-specific mitigation to check the impacts of any projects approved in variance areas, so total acreage is arguably not relevant. Preserving the status quo (case-by-case evaluations) should not have any greater environmental impacts not previously considered.

that development in neighboring areas would cause additional impacts.[27] In some of the applications referenced in footnote e, expanding on exclusion number 25, land was actually dropped for business reasons, not in response to biological, cultural, or other environmental concerns.

- Exclusion number 29, the most unrestrained of them all, could be read to allow BLM state or field offices to require exclusions based simply on ecological or cultural *concerns*, regardless of whether those concerns were substantiated at all. Such unbridled discretion would open the variance process to being controlled by individual preferences and undermines the certainty and consistency that the PEIS is supposed to provide, and that is required of BLM under its statutory authorities.

The listing of an area as being excluded has real and practically permanent consequences for the use of public lands for renewable energy generation projects. Consequently, the decision to exclude land must be based on clearly defined authority that ensures that the PEIS only imposes an absolute ban on development in mapped areas where impacts are truly unmitigatable. All other development decisions should be made on a case-by-case basis as part of BLM's conflicts analysis (*see* IM 2011-061), the NEPA process and any Section 106 consultation process.

D. Medium conflict criteria serving as exclusion criteria

As noted above, in Instruction Memorandum 2011-061, BLM proposed three categories of criteria that would be used to "to assist in prioritizing the processing of solar . . . energy development right-of-way applications." Projects with low potential for conflict would be processed in a timely, or possibly expedited, manner. Projects with a medium potential for conflict included those with resource conflicts that could potentially be resolved. Projects with a high potential for conflict might not be authorized.

The exclusion area criteria in the draft PEIS included all of the high conflict area criteria (or substantially similar criteria).[28] In addition, however, they also included most of the medium conflict area criteria—without providing any explanation of this significant change in policy: i.e., why conflicts in these areas

[27] In addition, this exclusion requires further definition to clarify what projects are included. The language of the exclusion itself states that it would apply only to projects where development was determined to be inappropriate "through an environmental review process that occurred prior to finalization of the Draft Solar PEIS." (SDPEIS at p. 2-17.) Read in isolation, this language would seem to refer to the Draft Solar PEIS published in 2010. However, since Desert Sunlight, approved in mid-2011, is among the projects covered by this exclusion, it may be that BLM intends for it to cover projects that had a complete environmental review before either (1) the publication of the Supplemental Draft or (2) the Final Solar PEIS.

[28] The Draft PEIS did not include exclusion criteria identifying "Lands near or adjacent to lands designated by Congress, the President, or the Secretary for the protection of sensitive viewsheds, resources, and values (e.g., units of the National Park System, Fish and Wildlife Service Refuge System, National Forest System, and the BLM National Landscape Conservation System), which may be adversely affected by development." DOE's portion of the SDPEIS only includes as guidance a recommendation to "[a]void impacts on special use lands such as NPS lands, Wilderness Areas, National Wildlife Refuge System lands, ACECs, Wildlife Management Areas, traditional cultural properties and other culturally sensitive sites, critical habitat for special status species, and military operations areas and other regulated military lands."

could potentially be resolved before the solar development ROD becomes final, but not afterwards. To ensure that the PEIS serves its purpose as an informational document describing the rationale for BLM's decisions, it must include some explanation of the reasoning behind banning development on most of the medium conflict lands, especially (1)"Right-of-way avoidance areas;" (2)"Areas where project development may adversely affect National Historic and Scenic Trails and National Recreation Trails;" and (3)"Developed recreation sites and/or facilities . . . ." (*See* SDPEIS at p. 2-16 to 2-17 (exclusion criteria 7, 10, and 18).) We do not contend that all such applications should be granted, for there could be some applications on medium conflict lands where the conflict proves insurmountable and significant. But the very notion of an "Exclusion Area" is that the applicant does not even get to try to resolve these medium conflicts. More explanation for this more drastic and permanent exclusion is necessary.

Finally, just as the SEZs can be reduced over time after a periodic assessment of needs related to SEZs, exclusion areas should also be revisited on a regular basis.

V. A CLEAR AND EXPEDITED PROCESS FOR ADOPTING NEW ZONES MUST BE ESTABLISHED

Regarding the future evolution of the PEIS, BLM should provide developers, local governments, and other interested parties with a clear and expedited process to nominate new zones, particularly until such time as sufficient zones near load and with transmission access have been established to meet federal and state policy objectives. An "open season" for nominating and evaluating new zones should follow the publication of the Final PEIS, with at least biannual open seasons established thereafter. In addition, developers should be allowed to file applications for areas outside of current zones that could be treated as "anchors" for new zones or as independent projects, depending on BLM's assessment of the potential of the area, and without any delay of review or development.

This matter is of critical importance to the success of a zone-based program, and to solar developers. The supplement drastically reduced (by over 50%) the amount of land in SEZs. Of the land that remains, significant portions are taken up by existing applications, proposed height restrictions that would preclude several technologies, and conflicts with Section 368 transmission corridors. The proposed SEZs are additionally too small, with a median size of only 5,873 acres—barely enough for two projects (approximate 683 MW total in each). Six SEZs contain under 5,000 acres and the De Tilla Gulch SEZ contains just 1,064 acres. These SEZs are simply not adequately sized for purposes of facilitating clustered development.

Developers need a process that will allow BLM to quickly add new zones, which in turn is necessary to ensure that sufficient lands will be available to meet Renewable Portfolio Standards ("RPS") goals and provide developers with the flexibility they need to work with the Balancing Area Authorities, the utilities, other transmission owners, and the market to come up with new clusters *that can be built*.

In the near term, BLM needs to diligently pursue the development of new SEZs. Review of the sufficiency of SEZs at least every five years is not enough, and will cause the program to fail to achieve its goals. For the next five years or until the land available for development in SEZs can meet the demand of state RPS and climate change policies, the BLM should instead commit to study potential new zones every year in states with significant renewable energy needs and/or transmission to bring renewable energy to load. In selecting these "SEZ exploration zones", BLM should prioritize the study of lands that have

already been partially studied (e.g., Renewable Energy Development Areas ("REDAs") in Arizona), so that the designation of additional SEZs can be further expedited.[29]

In addition, BLM should clarify that parallel regional planning efforts need not conform to the exact structure of the PEIS. Regional and sub-regional efforts to conduct limited studies of siting options, like the Restoration Design Energy Project ("RDEP") in Arizona, should be allowed to move forward with new innovations. For example, the RDEP intends to undertake studies that might not be sufficient for purposes of establishing SEZs, but will nevertheless provide significantly more information compared to what BLM has collected on the average variance area. These studies could be useful in efforts to identify some of the better variance areas (in other words, they have the potential to create "super variance" areas where BLM might focus developers' or its own efforts to identify new development opportunities outside of SEZs, or areas that might serve as precursors to new SEZs). The objectives and possible outcomes of the RDEP process and similar proceedings that might be undertaken in the future are not incompatible with the PEIS and BLM should make clear that such proceedings are not limited to establishing SEZs, generic variance areas, and exclusion areas as has been done in the SDPEIS. (*See* SDPEIS at p. 2-31.)

BLM should also be looking at developing a zone in the West Mojave *today*. The West Mojave is the area with the best general insolation in the United States, and remarkable proximity to one of the nation's largest load centers. As noted in the Solar Industry's comments on the original DPEIS, with its higher elevation and clearer skies, the solar radiation levels in the West Mojave are, in some locations, more than 10% higher than in the Eastern Mojave. As a result, the amount of land needed to generate the same amount of electricity is 10% less. The quality and nature of the radiation in the West Mojave also make it the single best area for development of concentrating solar power plants within the state of California. Moreover, the area is located in between two large military installations, Edwards Air Force Base and China Lake Naval Air Weapons Station, and much of the land is disturbed and made up of many small, private parcels. The lands in the West Mojave thus offer conditions that make siting solar energy generation projects there attractive for both developers and environmental stakeholders, as evidence by the fact that many in the conservation community have joined with us in calling for the BLM to include the West Mojave as one of the first additional SEZs. Finally, the West Mojave has transmission potential, as Southern California Edison's Tehachapi transmission line and the Los Angeles Department of Water and Power Barron Ridge line are both located in the area. In addition, projects in a West Mojave SEZ could potentially access the grid through the planned South of Kramer line, which will serve Abengoa Solar's permitted Mojave project.

Overall, in designating a new SEZ, BLM should base its decision on NEPA studies which demonstrate that resource conflicts are low or can be addressed and development prospects are high. SEZs should ideally be large enough to allow for siting flexibility and the development of multiple projects (ideally 1 GW

[29] In making this recommendation, the Industry does not mean to encourage exclusive reliance on other regional planning processes, such as the Desert Renewable Energy Conservation Plan ("DRECP") process, to designate new SEZs. These processes, at the least the DRECP in its current form, are not focused on creating zones; the DRECP is intended to develop a habitat conservation plan ("HCP"), not a plan for development. In addition, the DRECP will not provide the necessary relief in a timely manner (current expected completion date is 2014, and even that may be ambitious). A PEIS can be prepared (or supplemented) faster than a HCP, which is designed to tackle different issues.

or more).[30] They must be in areas with access to roads and a suitable workforce. They further must be sufficiently close to load or in areas where transmission can be reasonably expected to be available in time to serve the quantity of generation planned for the zone, considering current transmission planning processes and environmental considerations. Many of the current SEZs fail to meet several of these criteria,[31] and they should consequently not serve as models for the development of new zones.

VI. ASSUMPTIONS ABOUT TRANSMISSION THAT WILL BE USED TO JUSTIFY CURRENT AND FUTURE SEZ LOCATIONS ARE INCOMPLETE AND OVERLOOK LOCATIONS WITH GOOD TRANSMISSION OPTIONS

Sound, coordinated planning of transmission for zones is a critical component of smart from the start development. The process for planning construction and use of new transmission is, however, a complicated beast under the best of circumstances. The attempts by BLM and DOE to wade into these issues in the SDPEIS are admirable, but the analysis in the SPDEIS makes several missteps that must be corrected in the Final PEIS.

To start, the NERC data referenced in the Draft PEIS has not been updated since 2009 and is now outdated. BLM should revise this information to reflect the latest developments. In addition, the "hidden capacity" on existing transmission lines that the SDPEIS assumes will be available, if it truly exists, is, in practice, not actually of use to utility-scale projects because such projects cannot secure financing unless and until they have secured firm transmission capacity that will allow them to reliably transmit all of their generation to load centers.

Moreover, the capacity analysis proposed in the SDPEIS and applied to the Brenda SEZ presents, on its own, a misleading view of transmission availability. Thermal rating, without a power flow analysis, provides only a partial picture of the actual availability of transmission capacity as compared to the results one obtains when accepted transmission planning methodologies are applied. Such methodologies incorporate contingency analysis, which look at the complex, system-wide impacts of adding a generation facility to large alternating current grids given stringent regulatory requirements to maintain the integrity of the system even if multiple faults and line failures occur. Generally speaking, contingency analyses typically reveal additional limitations on the ability to add generation that are not apparent from a first-cut thermal analysis. Finally, the model transmission analysis that BLM proposes to follow does not take into account the massive queue that has built up in California and other western states. Developers, both conventional and renewable, have already spoken for significant amounts of hypothetical transmission.

Any analysis that is conducted without power flow modeling and standard contingency analysis will be flawed and counterproductive to facilitating rational development of high quality solar resources in an environmentally responsible manner. Proper analyses of transmission capacity are complex and resource-intensive, and are best undertaken by the responsible transmission planning entities. BLM and

[30] We say "ideally" because other than the Riverside East SEZ most or all of the SEZs are too small to accommodate multiple projects. It is possible that SEZs will need to be smaller, but ideally they should be large, so as to facilitate needed transmission.

[31] Indeed, in addition to the inadequate size of the SEZ, which is addressed throughout this comment letter, there are no available high-voltage power lines less than 25 miles from proposed SEZs. This is a critical oversight that will impact the feasibility of future development in the proposed zones.

DOE should work hand-in-hand with those entities to obtain the information they need to make proper decisions, rather than attempt to undertake this work on their own.

Additionally, at least while pending projects are still in the pipeline and companies are relying on the variance process while they wait for suitable zones for development, BLM has to consider how to facilitate transmission to these projects as well as zones. BLM further should be aware of projects planned on private land that are located near permitted and pending BLM projects. These private land projects could be used to support new transmission to projects on BLM land, but also may be competing with projects on public land for interconnection points and capacity. The transmission analysis needs to take these circumstances into account.

Overall, we recognize that BLM is not in the business of planning transmission. BLM might be able to impact planning processes by developing a relative ranking of zones and some meaningful development portfolios. BLM could then share these portfolios with Western Electricity Coordinating Council ("WECC")/Transmission Expansion Planning Policy Committee ("TEPPC") and other regional planning entities (e.g., Southwest Area Transmission ("SWAT"), California Transmission Planning Group ("CTPG"), and CAISO) and encourage these organizations to consider BLM's plans in their regular planning proceedings.[32]

BLM's ability to influence these proceedings is uncertain. Notwithstanding that fact, transmission considerations will need to be addressed through coordinated inter-agency efforts. Unilateral solutions, such as dedicated transmission lines to SEZs, as proposed in the PEIS, are not generally financially feasible from the perspective of the private sector, and cannot reasonably be expected to occur absent exceptional circumstances.

BLM can and must work to make transmission availability a central element of the solar program. It can make the most significant contributions by facilitating the construction of planned transmission, and by closely coordinating with transmission planning entities to better understand the transmission will likely be made available and its likely timeframe. BLM should coordinate with transmission planning agencies to identify how it can expedite permitting for transmission projects that will serve renewable energy on public and private lands. In addition, BLM should be targeting areas where transmission projects are most likely to be built in the near term (e.g., areas along the SunZia and Transwest lines) for the development of new SEZs.

VII. COMPETITIVE BIDDING AND LENGTH OF ROW TERMS

A. Competitive Bidding

As stated in the Solar Industry's comment letter on May 2, 2011, competitive bidding would most likely increase the costs of developing utility-scale solar projects on public lands, and thereby decrease opportunities for innovation that will help make the most of the public lands that are used for renewable

[32] Such proceedings include regional planning efforts required by the Federal Energy Regulatory Commission's ("FERC") Order No. 1000, the DOE-funded Regional Transmission Expansion Plan ("RTEP"). Other federal, state, and regional proceedings may also be informative, such as Western Area Power Administration planning efforts, National Interest Electric Transmission Corridor designations, and the Western Governors' Association's Western Renewable Energy Zones Phases III and IV.

energy. Combined with high rental rates, bonds, and other costs, some developers that might have pursued projects on public lands will pursue projects on private lands or not at all. The Solar Industry strongly opposes BLM's proposal to establish a competitive bidding process for solar ROW applications. Individual companies will be submitting comments consistent with this position in response to BLM's advanced notice of proposed rulemaking on this issue. *See* 76 Fed. Reg. 81,906 (Dec. 29, 2011).

B. Term for ROWs

BLM has determined, by policy (WO IB No. 2006-006), that the initial term of a ROW grant issued under the Federal Land Policy and Management Act of 1976 ("FLPMA") generally should not exceed 30 years. However, the 30 year cap is only a policy. The regulations require only that a ROW grant be limited to a "reasonable term" as established by BLM after considering "(i) The public purpose served; (ii) Cost and useful life of the facility; (iii) Time limitations imposed by licenses or permits required by other Federal agencies and state, tribal, or local governments; and (iv) The time necessary to accomplish the purpose of the grant", 43 C.F.R. § 2805.11(b)(1). BLM has stated in guidance documents that it will consider terms greater than 30 years based on the factors set forth in 43 C.F.R. § 2805.11(b)(1) and whether "the applicant/holder can demonstrate the 30 year term and provision for renewal is not sufficient." BLM Policy and Procedures for Issuance of "Long Term" Right-of-Way Grants and Easements Over Public Lands To Be Transferred Out of Federal Ownership 8 (June 2007).

The PEIS alludes to plans to limit the term of a solar ROW grant to 30 years. (SDPEIS at p. 2-2.) BLM's advanced notice of proposed rulemaking to establish a competitive bidding process and other policies confirm that BLM intends to establish such a rule. 76 Fed. Reg. 81,906 (Dec. 29, 2011). Although BLM is correct in observing, in support of the proposed rule, that Power Purchase Agreements tend to be 25-30 years, this timeframe does not take into account the construction or the decommissioning period for a project. An addition buffer of five to seven years should be built into the ROW grant period to account for these activities.

VIII. DOE REQUIREMENTS

The Programmatic Guidance in DOE's portion of the SDPEIS, similar to BLM's variance process, reads like a set of requirements—not guidance. Requirements to avoid de-shrubbing, avoid siting projects on prime or unique farmland, use technology that will minimize land disturbance, and avoid locations that would involve impacts on surface water bodies, ephemeral washes, playas and natural drainage areas are neither realistic nor required, and may be inconsistent with BLM practices. The Final PEIS should make clear that these components of the Guidance are intended to be just that—guidance, not rules.

IX. MISCELLANEOUS ISSUES

The following miscellaneous issues also warrant comment:

- As noted in the introduction to this letter, BLM appears to have abandoned the possibility that the PEIS would result in a zones-only development program. To the extent that a SEZ-only option is still a possibility, the Solar Industry strongly objects for all of the reasons given in its May 2, 2011 comment letter.

- The Pending Projects list in Appendix A is under- and potentially over-inclusive. As noted above, we strongly recommend that BLM winnow out speculative applications filed by companies that do not intend to develop facilities. In addition, however, we have identified several projects that meet BLM's definition of "pending project" that are missing from the list. Applications that need to be added to Appendix A include:

    1. CACA-049421 (Customer: Solar Partners V, LLC; received by BLM April 27, 2002; acres: 13,920)

    2. CACA-051967 (Customer: BrightSource Energy; received by BLM May 12, 2009; acres: 12,269)

    3. NVN-090476 (Customer: BrightSource Energy; received by BLM January 21, 2011; acres: 15,190)

    4. CACA-053138 (Customer: BrightSource Energy; received by BLM February 14, 2011; acres: 3,054)

    5. CACA-50390 (Customer: SolarReserve; filed August 22, 2008 [second in line application]; SolarReserve notified of status as a first in-line application on May 16, 2011; acres: 8,160)

    6. Sandy Valley III (NVN-[# TBD]) (Customer: Sandy Valley Solar III, LLC; received by BLM October 21, 2011; acres: 10,804)

    7. NextEra Sandy Valley (NVN-[# TBD]) (Customer: Boulevard Associates; received by BLM October 21, 2011; acres: 3,200)

  In addition to the applications identified above, BLM should review its records and update Appendix A to include all of the projects that meet the definition of "pending project" provided on pages 1-9 and 1-10. BLM should also review the information provided for applications on the list, as some solar companies identified discrepancies between the information in Appendix A and what they know to be true.

- Significant data gaps remain in the SDPEIS; BLM has stated that these gaps will be filled in the Final PEIS. This approach will deny public participants the opportunity to comment on significant matters where developer input in particular would be useful.[33] Assuming that a Final PEIS is the next step in this process, we strongly urge BLM to allow a minimum 60-day comment period on

[33] *See* SDPEIS at p. 2-19 ("A final proposal for SEZ-specific design features will be presented in the Final Solar PEIS."); *id* at p. 2-24 ("[I]nitial regional mitigation plans", which "will consider the cumulative impacts of development within a SEZ as well as ongoing conservation planning priorities", "will be presented in the Final Solar PEIS."), *id* at p. C-1 (recognizing that "[s]ome of the items identified in the action plans" ["plans that describe data gaps for individual SEZs and propose data sources and methods for the collection of additional data"] "will be completed by the BLM and presented in the Final Solar PEIS."); *id* at p. C-339 ("The planning-level inventory of water resources will be presented in the Final Solar PEIS."); *id* at p. C-44 (additional inventory and mitigation for vegetation resources); *id* at p. C-49 (additional inventory, avoidance, and mitigation requirements); *id* at p. C-49 (additional Key Observation Points ("KOPs")).

the final document, which would be consistent with the extra FEIS comment periods that BLM has allowed on project-specific EISs.

- On page 2-13, the SDPEIS states that "Transfers other than assignments must be approved by the BLM and may result in requirements for submittal of a new application or a Notice of Termination." BLM should provide clarity regarding the types of transfers, other than an assignment, to which this restriction is intended to apply. In particular, it is unclear whether BLM intends to impose an approval requirement when a new parent company purchases a subsidiary grant holder. Once rights are vested in a granted ROW, BLM should not interfere.

- The analysis of several SEZs concludes that a disproportionate impact on minority and low-income populations could occur whenever such populations are within 50 miles of a SEZ boundary. (*See, e.g.*, SDPEIS at p. C-22.) However, the SDPEIS does not explain the basis for or the relevance of this radius, or the relevant resources (air, visual, traffic) that might be involved in these impacts. This information should be included in the Final PEIS.

- Section C.2.2.4 places a new "Wilderness Characteristic" designation on approximately 11,925 acres in the heart of the Riverside East SEZ based on a 2011 update of the inventory of wilderness characteristics in the areas of the McCoy Mountains. (SPDEIS at p. C-60 (figure C.2.2-3).) On page C-76, the SDPEIS states that as a consequence of this new designation, "additional analysis of the visual values of these areas may be needed to determine if adjustments to the SEZ-specific mitigation identified in the Draft Solar PEIS are warranted." If the additional visual analysis results in a conclusion that the areas should be designated as Visual Resource Management ("VRM") Class II or III consistent (a conclusion that we would strongly disagree with), stringent and prohibitively costly visual resource mitigation requirements could apply to this area (in general and pursuant to the terms of the SDPEIS).

  The Solar Industry does not believe that the 2011 inventory that caused this new designation was conducted or interpreted properly.[34] Specifically, the wilderness characteristic designation is suspect in light of its apparent departure, without explanation, from the 2010 Visual Resources Inventory ("VRI") in the same area, which concluded that the area had VRM Class III characteristics. Even with this information in hand, the DPEIS declined to recommend that VRM classes be assigned to any of the lands within the Riverside East SEZ. (DPEIS at pp. 9.4-220 to 9.4-221.) When one considers the proximity of the area to the Blythe Airport, the recently approved Blythe Solar Power Project,[35] and the Town of Blythe, whether the lands can be deemed to embody the "naturalness[] and outstanding opportunities for either solitude or primitive

[34] There is, admittedly, no way to know for sure if the inventory was appropriate. The SDPEIS does not include the 2011 wilderness inventory or identify where it can be found. To comply with NEPA, BLM should make this document available.

[35] Currently, construction of this project is on hold while the developer attempts to re-permit the project to accommodate a change in technology. However, the developer undertook construction activities (development of roads, installation of fencing, grading, and clearance surveys) from late 2010 to mid-2011.

and unconfined recreation" seems highly unlikely.[36] The SDPEIS does little to allay these suspicions, giving the reader very little information about the 2011 wilderness characteristics inventory and observing only that the 2011 inventory and a 2010 VRI "reached somewhat different conclusions concerning visual resource values on the eastern side of the McCoy Mountains and the western face of the Big Maria Mountains." (SDPEIS at C-76.) This vague statement does not demonstrate to the public that BLM has fully considered its decision on this issue, nor does it provide the public with the necessary information to understand the wilderness characteristics decision.[37]

Significantly, even if BLM has properly characterized the area as having wilderness characteristics, BLM's policy documents require further analysis before it can consider the wilderness characteristics in a land use plan decision. Specifically, BLM must "[c]onsider and document the extent to which other resource values and uses of lands with wilderness characteristics would be forgone or adversely affected if the wilderness characteristics are protected."[38] Given the significant solar resources in the East Riverside SEZ, the national commitment to the development of solar energy on public lands, and the environmental benefits of clean solar energy, it seems likely that the calculus would favor solar development in this particular area.

- Certain design requirements are based on outdated and incorrect assumptions about technologies. Rather than impose hard and fast rules, the PEIS should simply require that the NEPA process take into account the following requirements:

    - Height Restrictions. Rather than a 100 foot limit in areas listed for meeting VRM Class II and III-consistent management objectives, or prohibiting power towers specifically (De Tilla Gulch, Fourmile East, and Gillespie), visual impacts should be assessed on a case-by-case basis. (*See* Attachment A, Item No. 16.)

    - Water Monitoring Requirements. Rather than require "less detailed analyses . . . for photovoltaic [PV] facilities and more detailed analysis for higher water use parabolic trough facilities", additional monitoring requirements should be imposed only on wet cooling projects or not at all. (*See* SDPEIS at p. C-343.)

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[36] BLM Instruction Memorandum No. 2011-154 (July 25, 2011) (Attach. 1 at pp. 4-8, available at http://www.blm.gov/pgdata/etc/medialib/blm/wo/Information_Resources_Management/policy/im_attachments/2011.Par.27443.File.dat/IM2011-154_att1.pdf.

[37] In addition, BLM has not explained the impact of the heavily mined McCoy Mountains, which were identified as Class IV lands in the 2010 VRI. This area boarders the proposed wilderness characteristics area, not far from the western boarder of the SEZ in the area impacted by the proposed wilderness characteristics designation.

[38] BLM Instruction Memorandum No. 2011-154 (July 25, 2011) (Attach. 2 at p. 2, available at http://www.blm.gov/pgdata/etc/medialib/blm/wo/Information_Resources_Management/policy/im_attachments/2011.Par.28612.File.dat/IM2011-154_att2.pdf).

- Footnote 1 on page 1-5 cites BLM's Land Use Planning Handbook, H-1601-1 (2005)[39] for the proposition that "A variance area is an area to be avoided that may be available for a solar energy right-of-way (ROW) with special stipulations or considerations . . . ." While the Solar Industry would agree that a variance area is an area that may be available for development, it cannot be, and is not, simultaneously an area to be avoided. Indeed, the language in the BLM Handbook actually states that "Right-of-way avoidance areas" are "areas to be avoided but may be available for location of right-of-ways with special stipulations" and distinguishes these areas from exclusion areas, which are "areas which are not available for location of right-of-ways under any conditions . . . ." (*Id.* at App. C, p. 21.) The SDPEIS simply uses the wrong construct to describe variance areas.

X. CONCLUSION

In his State of the Union address, President Obama recognized that while the differences in Congress "may be too deep right now to pass a comprehensive plan to fight climate change", the Administration still has powerful tools of its own for addressing this all-important issue; specifically, its authority to manage the nation's public lands. President Obama announced his intent to direct his Administration to make public lands available for the development of clean energy and more generally spoke of his aspirations for "a future where we're in control of our own energy." SEIA and LSA believe that DOI, BLM, and DOE have already done great work in furtherance of the President's agenda and hope that the President's words provide encouragement to the Departments to continue to devote resources to this lengthy, but extremely worthwhile, planning process.

However, the PEIS still requires work to get to a point where it will provide developers with meaningful and viable development opportunities in the short and long term. As part of this work, we urge the Departments to implement the changes described in this letter. These changes are critical if we are to ensure that the PEIS is more defensible and better designed to accomplish its purposes, and further ensure that it will not arrest the progress of the Solar Industry, which plays a crucial role in the Administration's plan to use public lands to generate clean energy.

Thank you for your time and consideration.

Sincerely,

Peter H. Weiner
of PAUL HASTINGS LLP

Jill E.C. Yung
of PAUL HASTINGS LLP

on behalf of the SOLAR ENERGY INDUSTRIES ASSOCIATION
and the LARGE-SCALE SOLAR ASSOCIATION

Attachment A: Supplemental Draft Solar PEIS – Comments on Appendix C
Attachment B: May 2, 2011 Industry Comment Letter on the DPEIS

[39] Available at http://www.blm.gov/pgdata/etc/medialib/blm/ak/aktest/planning/planning_general.Par.65225.File.dat/blm_lup_handbook.pdf.

Attachment A

Supplemental Draft Solar PEIS –
Comments on Appendix C

Supplemental Draft Solar PEIS – Comments on Appendix C
(Action Plans for Solar Energy Zones to Be Carried Forward)

Ref. #	Page	Text	Comment
1	General Comment	Various text throughout Appendix C.	The lists of "Potential adverse impacts identified in the Draft Solar PEIS" for each SEZ include many of the same elements found under the same heading in the discussions in Appendix B of areas that will be dropped from further consideration for SEZ designation. In light of this overlap, the line between potential impacts that warrant dropping or restricting development within a SEZ is not clear.
2	General Comment	The potential impacts section for several SEZs notes that "Minority populations occur within a 50-mi (80-km) radius of the proposed SEZ boundary; thus adverse impacts of solar development could disproportionately affect minority and low-income populations." (*See, e.g.* C-22; C-169.)	Stated in this way, the observations about potential impacts on minority populations are unhelpful. The PEIS fails to identify what resources (air, visual, transportation) might be impacted by solar development in a way that could have consequences for neighboring minority communities. The PEIS also does not explain the significance of the radius considered or conclude that the same radius is relevant regardless of the resource impacted. The Final PEIS should clarify these matters and identify the size of the population that might be impacted.
3	General Comment	Section 368 energy corridors might interfere with development in SEZs. (*See, e.g.*, C-37 (Imperial East; "A designated Section 368 energy corridor covers about 80% of the SEZ, potentially leaving less than 1,000 acres (4 km^2) available for solar development."); C-57 (Riverside East; same); C-98 (De Tilla Gulch; "A U.S. Department of the Interior Bureau of Land Management (BLM)-designated transmission corridor covers about two-thirds of the SEZ and could limit development in the SEZ because solar facilities cannot be constructed under transmission lines."); C-113 (Fourmile East; same).)	The impacts of Section 368 energy corridors on the total acreage in SEZs needs to be taken into account and transparently presented to the public. BLM should comment on the likelihood of approval for the development of generation facilities in these areas.
4	General Comment	Significant data gaps remain in the SDPEIS and BLM has stated that these gaps will be filled in the FPEIS. (*See* C-1 (recognizing that "[s]ome of the items identified in the action plans" ["plans that describe data gaps for individual SEZs and propose data sources and methods for the collection of additional data"] "will be completed by the BLM and presented in the Final Solar PEIS."); C-339 ("The planning-level inventory of water resources will be presented in the Final Solar PEIS."); C-44 (additional	This approach will deny public participants the opportunity to comment on significant matters where developer input in particular would be useful. To the extent that BLM intends to impose further restrictions on SEZs or new design criteria, BLM should provide a comment period on the FPEIS to ensure that stakeholders have an opportunity to correct any mistaken assumptions and conclusions.

Ref. #	Page	Text	Comment
		inventory and mitigation for vegetation resources); C-49 (additional inventory, avoidance, and mitigation requirements); C-49 (additional KOPs))	
5	C-22 to C-23 Gillespie SEZ	To reduce the visual resource impacts on this area and on Agua Caliente Road from solar development within the SEZ, allowable solar technologies within the SEZ will be limited to photovoltaic systems with height of panels no greater than 10 ft (3.3 m), or technologies with comparable or lower heights and reflectivity.	The SDPEIS imposes this condition despite the fact that "the SEZ Is in an area of low scenic quality . . . ." The conclusion in the SDPEIS that "weak to strong visual contrasts could be observed by visitors to Signal Peak WA, Woolsey Peak 25 WA, and Saddle Mountain SRMA, and travelers on the Agua Caliente Road, 26 Salome Highway and Old U.S. 80" is unhelpful, as it obscures the actual conditions of concern. Are the visual contrasts strong or weak? The evaluation of the resource should be made more internally consistent. (Please see the body of the comment letter for recommendations regarding the height restrictions proposed in the SDPEIS.)
6	C-22 Gillespie SEZ	The SDPEIS concludes that "The potential for impacts on significant paleontological and cultural resources is unknown. Impacts on cultural resources are also possible in areas related to the assumed access road."	Where impacts are possible simply because they are unknown, the PEIS should state only that they are unknown. The conclusion that impacts "are possible" suggests that some evidence points to this possibility.
7	C-53 Riverside East SEZ	"Solar development in the western portion of the SEZ would likely create conflict with existing residential use near Desert Center, Lake Tamarisk Resort, and scattered private residences."	The final Solar PEIS should address the number of residences that might be affected so that developers can use this information to better assess potential impacts of development.
8	C-56 Riverside East SEZ	"Concerns have been expressed in the past over the Salt Song Trail, and solar development within the SEZ is likely to be visible from the trail. Additional features of potential concern include Big Maria, Coxcomb, and Eagle Mountains, Alligator Rock, Black Rock, and McCoy Springs. The Soboba Band of Luiseno Indians and the Quechan have expressed concern over highly sensitive areas within their Tribal Traditional Use Areas."	While these concerns have been raised, the Salt Song Trail, to our knowledge, has not been definitively mapped and current uses have not been documented. To the extent that BLM intends to require developers to take the existence of the trail into account, developers must, at a minimum, know where it is. More generally, BLM should provide some guidance for how it intends to handle incidental impacts on the experience of those utilizing tribal resources near (visible from) potential sites for solar generation facilities.
9	C-58 Riverside East SEZ	"All forms of development within the area identified as needing to meet Visual Resource Management (VRM) Class II-consistent objectives in the Draft Solar PEIS will be limited to 10 ft (3.3 m) or under, and technology will be restricted to either photovoltaic technologies of less than 10 ft (3.3 m), or technologies with comparable or lower height and reflectivity. Within the area of the SEZ that was identified as needing to meet VRM Class III-consistent objectives in the Draft Solar PEIS, the solar development	The current height and technology limitations are excessive, as they would exclude even efficient PV technologies (*e.g.*, PV with trackers) and thereby provide perverse incentives to increase project footprints. Furthermore, the presumption that taller technologies will have greater impacts on visual resources is questionable. Any decision to allow solar development will create some visual contrasts from some vantage point. From a distance or from an elevated position, however, the impact of 10 ft panels on visual resources will not be appreciably different from the

Ref. #	Page	Text	Comment
		will be restricted to either PV technologies of less than 10 ft (3.3 m), or technologies with comparable or lower heights and reflectivity."	impacts of 20 ft panels or troughs. The 10 ft height limit and PV-only limitations on more than 25% of the SEZ acreage should be eliminated, with visual considerations applied only on a case-by-case basis to mitigate actual visual impacts exacerbated by project height.
10	C-83 Antonio Southeast SEZ	"On the western side of the SEZ that was labeled to meet VRM Class II-consistent objectives in the Draft Solar PEIS, all forms of development will be limited to 10 ft (3.3 m) or under, and the technology will be restricted to either photovoltaic technologies of less than 10 ft (3.3 m), or technologies with comparable or lower height and reflectivity. Within the area of the SEZ that was labeled to meet VRM Class III-consistent objectives in the Draft Solar PEIS, the solar development will be restricted to either PV technologies of less than 10 ft (3.3 m) or technologies with comparable or lower height and reflectivity."	See comment no. 9.
11	C-102 De Tilla Gulch SEZ	"The . . . SEZ area is 1,064 acres (4.3 km^2)."	This area is not nearly large enough to constitute a SEZ. Whether this area could support more than one project is questionable. Each project would need to be well under 100MW. Although we do not want to discourage BLM from making appropriate lands available for solar development, we would like to encourage BLM to focus the resources available for future SEZ development projects on options that create more substantial opportunities for development.
12	C-151 Amargosa Valley SEZ	"On the basis of the water impact analysis provided in the Draft Solar PEIS, development within the remaining area of the SEZ may need to be restricted to PV technology or a technology with equivalent or lower water use. Updated analyses taking the revised SEZ boundaries into consideration will be included in the Final Solar PEIS."	Technology limitations are inappropriate. To the extent that water impacts are a concern, the PEIS should place limits on the amount of water that can be used and leave it to the developers to determine whether they can construct or operate within those limits (or, alternatively, secure replacement water).
13	C-243 Afton SEZ	"On the basis of the water impact analysis provided in the Draft Solar PEIS, development within the remaining area of the SEZ may need to be restricted to PV technology or a technology with equivalent or lower water use. Updated analyses taking the revised SEZ boundaries into consideration will be included in the Final Solar PEIS."	See comment no. 12.
14	C-339 Transmission	"An important finding from the SLT analysis is that there appears to be spare capacity available in the existing 500-	This assertion is not true. The error appears to be the result of the omission of a power flow analysis. The most recent, definitive analysis of

Ref. #	Page	Text	Comment
	Analysis	kV network linking the proposed Brenda SEZ to major load areas and potential solar energy markets."	solar renewable development in Arizona showed the need for major upgrades. (*See, e.g.*, Arizona Corporation Commission's recently sponsored study on Renewable Energy Export, 11/1/2011, which concluded that Palo Verde (Delaney) to Colorado River and North Gila to Imperial Valley 500 kV lines were both needed to accommodate increase renewable generation in the state.) The model should be modified to consider "parallel" or loop flow (power from a source to sink will travel on multiple paths); include contingency considerations (contingency coverage requirements that give the appearance that a line has room because that is the case under normal conditions); and account for queue considerations and how to reserve transmission for projects in zones. Alternatively, BLM could turn over its priority projects to WECC/TEPCC and other regional planning entities (e.g., SWAT, CTPG, and CAISO) for analysis in annual planning proceedings.
15	C-343 Groundwater Analysis	The SDPEIS proposes to require "less detailed analyses . . . for photovoltaic [PV] facilities and more detailed analysis for higher water use parabolic trough facilities . . . ."	Additional monitoring requirements should be imposed only on wet cooling projects or not at all. There is no reason to require that certain CSP projects increase their monitoring above the requirements applicable to PV projects. Even presuming that all PV projects will use less water than all CSP projects, more water use does not make a project more likely to violate water use restrictions imposed by the ROW grant and NEPA documents.
16	C-344 Visual Resource Design Features	"No vertical development over 100 ft (30.5 m), including transmission towers and other structures."	Along the same lines as the comments on 10 foot height restrictions and PV only areas, BLM should consider on a case-by-case basis the impact of facility height on visual resources. Actual visual impacts can be significantly affected by site-specific considerations. While it is appropriate for the PEIS to offer a tool box of solutions for mitigating visual impacts (e.g., color treatments), it is not appropriate to bar the use of particular technologies across large areas.

Attachment B

May 2, 2011
Industry Comment Letter
on the DPEIS

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May 2, 2011 76145.00002

VIA OVERNIGHT UPS & INTERNET

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

Re: Comments of LSA, CEERT and SEIA on Draft Solar PEIS

To whom it may concern:

We live at a time of unique opportunity. Solar energy developers, conservation organizations, utilities, and all levels of Federal and State governments have united as never before to address our need for environmentally responsible clean energy. That need must be met in part through the development of utility-scale solar energy, and reasonable standards must be put into place to encourage that development. Every step we take will be watched by those who come after us.

In that spirit of urgent necessity and collaborative problem-solving, we offer the following comments on behalf of the Large-scale Solar Association (LSA), the Center for Energy Efficiency and Renewable Technologies (CEERT), and the Solar Energy Industries Association (SEIA) on the Draft Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States (Draft PEIS), published by the Bureau of Land Management (BLM) and the U.S. Department of Energy (DOE) on December 17, 2010. These comments have been submitted via overnight UPS and the form at http://solareis.anl.gov/involve/comments/index.cfm.

LSA and SEIA are coalitions of solar companies. CEERT is a coalition of renewable energy companies and environmental organizations. All three seek to promote the environmentally responsible development of solar energy and associated transmission. LSA, CEERT, and SEIA are committed to working with the Departments of the Interior (DOI), Energy (DOE), and other federal agencies, environmental and conservation organizations, Native American tribes, state agencies, and other stakeholders to achieve this goal.

The PEIS represents an unprecedented and commendable effort to promote the responsible development of utility-scale solar energy, which will be key to securing our nation's energy independence and reducing greenhouse gas emissions. In particular, the PEIS will guide the development of utility-scale solar projects on BLM-managed lands for

the foreseeable future, as well as establish programmatic environmental guidance for evaluating utility-scale solar projects for DOE's financing decisions. However, unlike some other planning efforts, because BLM and DOE are preparing the PEIS at a time when solar power projects on public lands are being (and must be) developed, the PEIS must adapt to and account for these existing realities. Planning for the future without supporting current efforts could result in a net loss of solar energy development.

As we explain further below, the goals of the PEIS are salutary. BLM's recent Instruction Memoranda regarding screening criteria, due diligence, and NEPA review[1] also further the universal goal of providing direction and clarity to developers trying to site utility-scale solar projects on public lands, such as by identifying high-conflict areas and eliminating speculative applications.

However, the Draft PEIS needs much more work to make it a useful tool that (a) ensures that developers are able to maintain their forward momentum with existing applications, and (b) establishes a roadmap for environmentally responsible and technically and economically feasible utility-scale solar siting and permitting over the long-term. That program should facilitate environmentally-responsible permitting.

Our comments can be summarized very briefly as follows:

1. BLM should continue to process existing applications. BLM should reject applications that are in high-conflict areas (as defined below in Section II.A) *and* do not have a Notice of Intent when BLM and DOE issue a Record of Decision (ROD) for the Final PEIS. (Applications already far along in the NEPA process will be resolved through that process.) BLM should process the remaining applications according to the criteria set forth in BLM's February 7, 2011 Instruction Memorandum.[2] These combined criteria are sufficient to prioritize and reject projects, as appropriate.

2. BLM should not adopt the Solar Energy Zone (SEZ)-only alternative analyzed in the Draft PEIS. The SEZs suffer from the problems identified above and below, fail to sufficiently address the nation's urgent need to reduce greenhouse gas emissions, and provide little or no added environmental benefit over alternatives that provide more flexibility. Because the SEZ-only alternative does not fulfill the purpose and need of the PEIS, comply with applicable laws and mandates, and has not been adequately analyzed, it is not legally defensible.

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[1] *See* IM No. 2011-059, National Environmental Policy Act Compliance for Utility-Scale Renewable Energy Right-of-Way Authorizations (Feb. 7, 2011); IM No. 2011-060, Solar and Wind Energy Applications – Due Diligence (Feb. 7, 2011); IM No. 2011-061, Solar and Wind Energy Applications - Pre-Application and Screening (Feb. 7, 2011).

[2] IM No. 2011-061, Solar and Wind Energy Applications - Pre-Application and Screening (Feb. 7, 2011).

3. BLM should take action to eliminate speculative applications. Specifically, BLM should subject all existing applications, as of the date of the Final PEIS, to the technical and financial screening criteria in BLM's February 7, 2011 Instruction Memorandum.[3] This will ensure that all viable projects can proceed to a Notice of Intent within a reasonable period of time and that any non-viable projects will be eliminated.

4. Limiting applications to the currently proposed SEZs after a certain date does not make sense because they are already insufficient and will be subject to additional culling in the next phase of environmental review. The currently proposed SEZs will be reduced in number and acreage in the Final PEIS for a variety of reasons (e.g. visual impacts and wildlife corridors). The SEZs that are near load and transmission already are full with applications; there is little or no space for new applications. A date cutoff would serve as a two- to three-year moratorium while BLM identifies, studies, and designates new areas for development. Although utility-scale solar development is also occurring on private lands where available, the utility-scale solar industry will fail if there is a moratorium on new development on public lands. There must be some acceptance of new applications (other than in high conflict areas) outside of the currently proposed SEZs.

5. The proposed SEZs in the Draft PEISs are inadequate. The SEZs are not sufficiently close to load or transmission; they have not been studied to assure that conflicts are low and development prospects are high; they are too few and too small; and they do not provide real incentives for development within their boundaries. Stated positively, BLM should propose and designate SEZs based on technical criteria (insolation, slope); known, low conflicts with biological, cultural, and other resources; and known access to transmission and proximity to load. SEZs would provide real incentives for development within their boundaries, such as project-specific Environmental Assessments (EAs) instead of EISs and assurance of transmission interconnection. BLM should also work with the Federal Energy Regulatory Commission (FERC) to encourage expedited deployment of new or upgraded transmission facilities serving SEZs. SEZs also would be large enough to allow for siting flexibility, and BLM would establish a clear process for expanding SEZs and adding new ones.

6. BLM should not adopt its proposed non-environmental exclusions as currently mapped. The excluded areas (in pink on maps provided in the PEIS) are overly broad, include some existing viable applications, do not have an evidentiary basis for their exclusion, and are not explained transparently in the document. Further work is necessary to understand and discuss which lands should be excluded. Specifically, the non-environmental exclusion criteria need to be modified.

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[3] *Id.*

7. BLM should subject new project applications (i.e., those filed after BLM and DOE issue the PEIS ROD) to the agreed upon screening criteria that BLM adopts in the ROD.

8. BLM should determine the criteria for additional SEZs, and specify conditions under which it would restrict new applications outside of SEZs. There are a number of circumstances under which extra-SEZ applications will make sense. These include applications where adjacent private land, combined with non-SEZ federal land, provides sufficient acreage for a project, where the inclusion of federal land adjacent to a SEZ would avoid unacceptable impacts in the SEZ or where the land outside the SEZ is determined to have fewer conflicts. When BLM provides well-crafted incentives for well-sited SEZs, these incentives will steer most development within the SEZs. All new applications that are not in high conflict areas should be timely processed.

In setting forth our recommendations for improvements to the PEIS, we are cognizant of BLM's and DOE's staffing and resource constraints. The industry is ready to assist BLM and DOE with ensuring that they have the resources they need to effectively perform the many tasks before them. However, we urge the agencies to ensure that no resources are re-allocated away from the processing of existing solar energy development applications. Such action would strain existing investments and likely would cause capital currently devoted to solar energy projects to be shifted into other investments. This shift would adversely affect the solar energy industry and undermine critical efforts to meet renewable energy goals and mandates.

I. Background

On May 29, 2008, DOE and BLM published in the Federal Register a Notice of Intent to prepare the Solar Energy PEIS to develop and implement agency-specific solar energy development programs and to evaluate solar energy development on BLM-administered public lands. *See* 73 Fed. Reg. 30,908 (May 29, 2008); *see also* 74 Fed. Reg. 31,307 (June 30, 2009) (announcing BLM's intention to designate SEZs as part of PEIS process).

The goals of the PEIS are to "create a more efficient process for authorizing solar energy development on public lands." 74 Fed. Reg. at 31,308. This process also is intended to:

- *Facilitate* near-term utility-scale solar energy development on public lands;
- *Minimize* potential environmental, social, and economic impacts;
- Provide the solar industry *flexibility* in proposing and developing solar energy projects (location, facility size, technology, etc.);
- Optimize existing *transmission* infrastructure and corridors; and

- *Standardize* the authorization process for solar energy development on BLM-administered lands.

Draft PEIS at ES-3; 74 Fed. Reg. at 31,308. As stated in more detail in our comments below, we are concerned that the Draft PEIS does not meet these intended goals because it:

- Does not *facilitate* development due to its failure to propose sufficient SEZs near load and transmission and its failure to sufficiently analyze biological and cultural constraints within the proposed SEZs;

- Does not avoid or *minimize* environmental and cultural impacts due to its failure to analyze these impacts prior to determining SEZ boundaries and locations;

- Would not provide *flexibility* under the SEZ-only alternative and would appear to constrain flexibility arbitrarily under some of the Preferred Alternative maps, unless further explanations are forthcoming;

- Does not optimize existing *transmission* infrastructure because of inadequate study of transmission as related to SEZs and to projected development on private lands; and

- Does not *standardize* the authorization process or streamline the environmental review process for projects on public lands because so much analysis is left for individual projects.

We appreciate the monumental efforts that have gone into preparing the Draft PEIS. However, these and the other issues we discuss below must be addressed if the Final PEIS is to be as useful as it can and needs to be.

Finally, we recognize the difficulty of writing a long-term planning document at the same time that the agency and all stakeholders are engaged in intensive short-term decision-making regarding the same lands, technologies, and resources that are addressed in the PEIS. In some states, such as California, other long-term planning activities such as the Desert Renewable Energy Conservation Plan (DRECP) should further inform BLM's planning. The solar industry would be severely handicapped to the detriment of the public and all stakeholders if these current activities are not accounted for and prioritized. Our comments and suggestions are designed to provide a roadmap for developing a long-term and sustainable siting and permitting program while giving due attention to existing project applications.

II. Comments on the Draft PEIS (BLM)

A. BLM should commit to the timely processing of existing applications.

The Draft PEIS states that pending "applications are being processed in accordance with the BLM's current Solar Energy Policies (BLM 2007, 2010a,b)." The PEIS also cites BLM's June 30, 2009 Federal Register notice (74 Fed. Reg. 31,307), in which BLM stated that:

- Any entity with an existing application for lands within the [proposed SEZs] received by the BLM prior to June 30, 2009 will continue to be processed under the BLM's current procedures.

- Applications received after June 30, 2009 for lands inside the [SEZs] will be subject to the [ROD] for the Solar PEIS and any alternative procedures developed by BLM for non-competitive and competitive processes.

- All applications received for lands outside of the [SEZs] will be processed under the BLM's current procedures.

- Any right-of-way (ROW) grant for a solar energy application issued after the BLM's ROD for the Solar PEIS may be issued subject to the requirements adopted in the ROD.

BLM should commit to processing existing applications under existing procedures and guidance (including BLM's February 7, 2011 Instruction Memoranda) in a timely manner, regardless of where the applications are located. To adequately protect biological, cultural, recreational, visual, and other resources, BLM should reject applications[4] that do not have a Notice of Intent as of the date that BLM and DOE issue the ROD for the Final PEIS, and that are in high-conflict areas, which we would define as:

- Designated critical habitat for federally threatened and/or endangered species, in accordance with the language of IM 2011-061.

- Areas of Critical Environmental Concern (ACECs) and Desert Wildlife Habitat Management Areas (DWMAs).

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[4] By "applications" we refer to applications for utility-scale solar projects, not applications for associated transmission infrastructure and linear facilities. BLM should not automatically exclude such infrastructure and facilities from areas that present high conflicts for projects, and should review and permit applications for such facilities according to standard procedures.

- Lands that have been formally proposed by federal agencies for designation as wilderness, or proposed for a national monument or wilderness designation in S.2921 (111th Congress).

- Lands that were originally part of a renewable energy ROW application and were eliminated from that application by BLM or the applicant due to resource conflicts. For example, where the final project represents a smaller or different footprint to avoid wildlife habitat, rare vegetation or desert washes, the excluded portion of the ROW should no longer be available for development. This category includes projects that BLM rejected because they were located within areas subject to a 1% development cap in applicable land use plans.

- Lands that have conservation value and were purchased with federal, state, or private funds, and donated or transferred to the BLM for conservation purposes.

- Lands purchased with federal, state or private funds, and donated or transferred to BLM expressly as mitigation for project impacts.

We raise the need to process existing applications first because it applies regardless of what the Final PEIS says. Many pending applications are far along in the environmental review and permitting process, and already have PPAs and priority in the transmission interconnection process. These projects are the most viable given their commercial value and investment, and are necessary to maintain the utility-scale solar industry's forward momentum. Those applications that are not as far along still represent substantial investment by developers and should also be processed. In addition, we urge BLM to avoid delaying or imposing new requirements on any project that is well into the NEPA process but does not have a ROD by the time BLM adopts a ROD for the Final PEIS. The critical point is that failing to timely process existing applications is the same as denying them. Put another way, the PEIS not only must provide an improved program for siting and permitting utility-scale solar projects on public lands, it must provide an immediate and reasonable path forward for the existing projects that are crucial to the industry's continued viability.

Finally, new project applications filed after BLM and DOE issue the ROD for the PEIS should be subject to the screening criteria BLM adopts in the ROD and processed according to queue position. As with existing applications, new high conflict applications outside well-sited and adequate SEZs should be rejected.

B. The proposed SEZs need substantial work if they are to be a useful component of a solar energy program for public lands.

BLM should focus on facilitating rather than restricting solar development on public lands. By carefully studying and designating SEZs, BLM can provide real incentives for developers to locate their projects within SEZs and away from areas with high conflicts.

1. Characteristics of useful SEZs

BLM would propose and designate SEZs based on the following criteria:

- *Adequate insolation and maximum slope.* In the Draft PEIS, BLM excluded lands with greater than 5% slope and/or solar insolation levels below 6.5 kWh/m^2/day. These are suitable initial thresholds, but the lands they exclude may become more attractive over the 20-year life of the PEIS.[5] BLM should allow for the designation of SEZs that include lands that do not meet these thresholds.

- *Minimal species or cultural resource conflicts.* SEZs can and should be chosen only *after* detailed studies indicate good places for development. Identifying SEZs before these studies are complete does not assist solar development or environmental or cultural resources; instead of creating "go" zones, BLM risks creating "we don't know" zones that are not effective in meeting the goals BLM has set for the PEIS. If SEZs have resource conflicts that have not been analyzed, they create the false perception that sufficient land is being provided when it is not. Based on the collective experiences of developers, we estimate that 60-90% of the proposed SEZs will turn out to be unavailable for development due to (as-yet) unknown conflicts.

- *Close to load and transmission infrastructure and capacity.* Many of the proposed SEZs face severe transmission constraints, and those that do not already are full of applications. Again, if SEZs are located far from load and transmission, they create the false perception that there is sufficient land for development.

- *Large and numerous enough to allow for flexibility and industry growth.* The Draft PEIS contemplates that additional or expanded SEZs can be proposed, evaluated, and designated, but there is no concrete process for doing that on a timeframe that is meaningful. Initial SEZs will be necessary but not sufficient, especially since many lands (especially in California) already are the subject of applications. In the Final PEIS, BLM must have a workable process in place and underway for expanding and adding SEZs.[6] We provide specific suggestions for new SEZs below.

- *Ability to support real incentives for development.* The Draft PEIS identifies potentially helpful but vague incentives to develop in SEZs. These incentives are key to

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[5] In just a few short years, many photovoltaic (PV) systems have evolved and can now utilize slopes in the 8-10% range.

[6] BLM should allow for increases in renewable portfolio standards, at least for the six states covered by the PEIS. As renewables become more prevalent, there will be incentives to export the power they generate to other states where solar resources are not as abundant.

the word "facilitated" in "Area for Facilitated Development," and they must be more concrete. For example, BLM should provide for streamlined environmental review in the form of EAs instead of EISs; provide concrete assurances that projects in SEZs will be able to connect to the grid;[7] and withdraw SEZs from other uses including mining and oil and gas development (or at least prioritize solar over those uses).[8]

Below we discuss a few of these criteria in more detail, focusing on where the proposed SEZs fall short so that BLM can develop better ones.[9]

2. The proposed SEZs require substantial additional analysis and thought if they are to be useful.

Areas in which BLM chooses to promote solar development can and should be chosen only *after* detailed biological, cultural, and transmission studies indicate that they are good places for development. Identifying SEZs before these studies are complete does not assist solar development or protect environmental or cultural resources; instead of creating "go" zones, BLM risks creating "we don't know" zones that are not effective in meeting the goals BLM has set for the PEIS. In addition, if SEZs are located far from load and transmission, or have resource conflicts that have not been analyzed, they create the false perception that sufficient land is being provided when it is not. Finally, the SEZs also need to be larger and more numerous. Much of the area of the proposed SEZs already is covered by existing applications, particularly in California, and there are no SEZs proposed in the West Mojave, Chocolate Mountains, or other high-value areas.

a. The SEZs are not informed by ground-level biological surveys or analysis or allow for the future incorporation of the DRECP.

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[7] For example, BLM could work with FERC, Independent System Operators, Public Utility Commissions (PUCs), and utilities on joint transmission planning to accomplish these results.

[8] For this reason, we support BLM's recent interim and proposed final rules to segregate lands for utility-scale solar development to prevent conflicts with new mining claims. *See* 76 Fed. Reg. 23,198 (Apr. 26, 2011) (codified at 43 C.F.R. § 2091.3-1(e); 43 C.F.R. § 2804.25(e)); 76 Fed. Reg. 23,230 (Apr. 26, 2011).

[9] Our aspiration is that BLM develops SEZs that are, in fact, areas of *facilitated* development (AFDs), with an emphasis on incentives to develop projects within zones rather than on restrictions on projects outside of zones. The characteristics we describe above—thorough biological and cultural studies, access to adequate transmission infrastructure and load, and direct development incentives—would underscore this carrot-based approach. A stick-based approach would impede solar development with little environmental benefit. *See* Section II.C below.

Key to siting utility-scale solar projects is the relative presence of sensitive species and their habitats. If the SEZs are to minimize the impacts of solar projects on these species and habitats, including habitat connectivity, and provide incentives for development within their boundaries, they must be located in areas with (a) known and (b) relatively few biological resource conflicts. BLM also must know that the ecosystems within SEZs are capable of accommodating a certain level of development (i.e., that they have adequate carrying capacity), and establish workable mitigation measures to avoid, minimize, and mitigate the impacts of that development.

BLM has not undertaken the "in-depth environmental analyses" that underlie such informed decisionmaking, and that BLM promised when it announced the solar zone concept. *See* 74 Fed. Reg. 31,307, 31,308 (June 30, 2009). Specifically, BLM has not conducted detailed, ground-level biological surveys or engaged in a detailed consultation with the U.S. Fish & Wildlife Agency (FWS) under Section 7(a)(2) of the Endangered Species Act (ESA), 16 U.S.C. §§ 1531-1544. Instead, it appears that BLM relied on existing, gross data and undertook a much less detailed consultation under Section 7(a)(1) of the ESA to generalize about biological resources, decide where to locate SEZs, and develop mitigation measures. As a result, developers still must conduct protocol-level surveys of sites proposed for development within SEZs and engage in first-in-time Section 7(a)(2) consultation with FWS—the opposite of the "streamlined environmental process" and "very limited additional environmental analysis" that the Draft PEIS promises. *See* Draft PEIS at 2-11, 6-33. Moreover, we fully expect that detailed biological surveys will reveal significant biological resources (and therefore conflicts) within much of the proposed SEZs, making that area unavailable for development. This is not a useful outcome.

Aside from biological considerations, the PEIS fails to quantify indirect impacts to lands in the SEZs, except in specifically designated areas. The PEIS does not analyze National Heritage Areas, scenic byways, un-inventoried portions of historic trails, state parks and wildlife areas, and other locally significant areas or attractions. Without this analysis, it is difficult to determine whether the SEZs will be viable since impacts to these areas could require significant mitigation.

In addition, BLM did not base its SEZ designations or energy policies and design features on the California Desert Renewable Energy Conservation Plan (DRECP). The DRECP, which is still under development, will be a Habitat Conservation Plan under the ESA and a National Communities Conservation Plan under the California Endangered Species Act (CESA), Cal. Fish & Game Code § 2050 *et seq.*, and is being developed by the Renewable Energy Action Team, of which BLM is a member. Once it is complete, the DRECP will: (a) identify and map areas for renewable energy development; (b) identify and map areas intended for long-term natural resource conservation; and (c) establish best management practices and guidance. Unless the PEIS accounts for the DRECP's final recommendations (or provides for their incorporation) regarding areas for development and conservation, as well as design features, the PEIS may not cohere with those well-

studied recommendations. *See* LSA/SEIA/CEERT SESA Comments, at 13 (Sept. 14, 2009). This is not a useful outcome.

Solution: The Final PEIS, including the designation of any SEZs, should incorporate a mechanism for adjustment of SEZ boundaries in light of the final DRECP. BLM can bolster both the DRECP and the SEZs by engaging in full Section 7(a)(2) consultation with FWS and gathering (or have FWS gather) detailed biological resource information on the acreage within designated SEZs.[10] The SEZs then can become truly noncontroversial "go" areas for solar energy projects.

If BLM cannot perform these tasks prior to finalizing the PEIS, it should expressly recognize that the designated SEZs are shells or outlines of possible development zones to be studied further, not actual development areas themselves, and should not claim that the entire area (or any percentage of it) is available for development until there is more information about these issues.[11]

b. The SEZs are not informed by ground-level cultural surveys or analysis or even landscape-level consultation under Section 106.

Equally key to siting utility-scale solar energy projects is the relative presence of cultural resources, including resources that are or may be sacred to Native American tribes. Section 106 of the National Historic Preservation Act (NHPA), 16 U.S.C. § 370f, requires agencies to evaluate the potential impacts of their decisions on certain eligible cultural and historic resources before making those decisions.

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[10] The Draft PEIS states that, "for all proposed SEZs, government-to-government consultation and inter-agency consultation are still ongoing and could result in the identification of additional concerns." Draft PEIS at 6-33 n.7; *see also* Draft PEIS at 6-100. We are hopeful that this consultation includes ESA Section 7(a)(2) consultation with FWS.

[11] By way of further example, the Draft PEIS states that BLM used the following tools to evaluate areas for designation as SEZs: site-specific GIS; Google Earth; BLM GeoCommunicator website (BLM and USFA 2010); BLM LR 2000 system (BLM2010b); local BLM staff; BLM's 1:100,000 Surface Management Status maps; visits by assessment teams; and BLM Rangeland Administration System web site. Draft PEIS App. M at M-4 to M-7. A typical developer will usually conduct a far more in-depth investigation of a prospective site, relying on protocol-level biological and cultural surveys and detailed record reviews, investigations of onsite and offsite rainfall and natural drainage conveyances, preliminary evaluations of soil characteristics, and analyses of proximity to existing pipelines, rail unloading facilities, access roads, telephones and cell towers, industrial services, fire districts, and, of course, transmission infrastructure.

Recognizing this obligation, BLM has undertaken Section 106 consultations for individual solar energy projects. Yet BLM has not done so for the Draft PEIS.[12] A programmatic Section 106 consultation would assist BLM in evaluating the potential impacts of the PEIS on cultural resources, and in avoiding or minimizing those impacts. BLM cannot designate SEZs or develop programmatic mitigation measures without the information that such consultation would generate.

Similarly, BLM did not perform detailed surveys of cultural resources before designating SEZs, so that developers could avoid conducting, or at least minimize, such surveys.

Solution: BLM should gather detailed information about cultural resources before designating SEZs. At a minimum, BLM should conduct a programmatic Section 106 consultation for the PEIS and conduct detailed cultural resource surveys of proposed SEZs. As with biological resource studies, if BLM cannot perform these tasks prior to finalizing the PEIS, it should expressly recognize that the designated SEZs are shells or outlines of possible development zones to be studied further, not actual development areas themselves, and should not claim that the entire area (or any percentage of it) is available for development until there is more information about these issues.

c. The proposed SEZs do not facilitate development on already-disturbed private lands because BLM failed to designate SEZs near such private lands.

The Draft PEIS states that BLM tried to integrate information about private lands into the Draft but was unable to do so due to time constraints. *See* Draft PEIS at 1-14. Appendix E, for example, assumes that much, if not the majority, of near-term utility-scale solar energy development will be on private lands, but the PEIS does not locate zones to achieve synchronicity with opportunities for development on private lands. These opportunities are publicly identified through filed permit applications or designated through a state and local land use and transmission planning processes, and the PEIS must undertake this effort or refrain from drawing conclusions in the PEIS based on incomplete assessments..

The assumptions in the PEIS, which are based on the absence of critical information about, and consideration of, private lands, have three consequences. First, future transmission likely will not be planned based on the availability of and constraints associated with public *and* private lands. Federal efforts to site future transmission may be particularly susceptible to this oversight by focusing only on public lands. Second, the

[12] The Draft PEIS states that, "for all proposed SEZs, government-to-government consultation and inter-agency consultation are still ongoing and could result in the identification of additional concerns." Draft PEIS at 6-33 n.7. We are hopeful that this consultation includes Section 106 consultation with federally-recognized tribes, their designated representatives, and any other appropriate stakeholders.

SEZs are not planned to capitalize on private land opportunities, and do not optimize land use and environmental planning benefits by mixing and matching public and private lands or by being adjacent to what may become disturbed private lands as a result of solar projects located on public lands. Third, environmental impact assessment on both the public and private side of the review will not take the sum of public and private lands into account and there likely will be little effort to coordinate using public and private lands for compensatory mitigation. Many nongovernmental organizations (NGOs) and local governments favor such coordination.

Solution: Consider the addition of SEZs with these private land considerations in mind. Utility-scale solar projects proposed on private lands should be easy to identify based on pending conditional use permit applications. Specifically, if BLM previously rejected certain public lands near degraded private lands for SEZ designation because of small size, BLM should reconsider that decision in issuing the Final PEIS.

d. Many of the SEZs are in areas where utility-scale solar projects are less likely to be built because transmission access and/or proximity to load are absent.

A SEZ that lacks adequate access to existing or planned transmission is a cemetery for utility-scale solar projects. Similarly, a SEZ that is located too far from where electricity is needed may never be developed because the cost of transporting electricity to the load centers is too high. Many of the proposed SEZs suffer from one or both of these problems.

Consider the following factors, which dictate where solar developers will site their projects. First, the target development for SEZs is large projects (likely 50 MW or greater), and the market for large projects is in California (an overwhelming majority of the RPS requirement in the Western Interconnection is in California). This fact favors larger or more (or both) SEZs in California and Arizona.

Second, in areas with very large wind energy potential, the market for solar energy is constrained because of economics. Thus, for the eastern front of the Rocky Mountains (Wyoming, Colorado, New Mexico), wind projects will be favored in certain RPS markets, with minimal set asides for solar projects. California, Arizona, and Nevada may provide better markets for solar power, at least as compared to certain areas in other states.

Third, large interregional transmission lines in the West primarily were built to move baseload resources from east to west. The existing interstate transmission grid was developed and sized according to these baseload resources (usually coal-based electricity but also some nuclear and hydropower) in the east, and was designed to move this energy to the load centers in California and, to a lesser extent, Phoenix and Tucson. There may be some small spare capacity on these lines during certain times of the day and year, but

little of the firm capacity needed to service a solar facility with predictable and daily output.

Fourth, it is difficult for utility-scale solar projects to competitively support large transmission costs. A transmission system wheel[13] creates a major obstacle to a solar project's economics, and two wheels destroy it. In addition, it is difficult to economically carry large transmission costs on a resource with a 25-30% capacity factor (it is difficult enough for a baseload resource with a 90-100% capacity factor), and many power purchase agreements with the major California utilities do not allow wheeling over multiple transmission systems, thus creating an insurmountable hurdle. Finally, many existing and proposed transmission lines have capacity divided or reserved by several utilities. Some of the capacity is reserved for specific use by a utility. In the majority of cases, a project must tie into a California Independent System Operator (CAISO) interconnection point to qualify for inclusion in the California RPS. This restriction eliminates the use of many existing or proposed transmission lines for delivery of power into California.

As a result of these factors, and as developers understand, solar power is best generated as close as possible to its retail market and in areas with ready access to existing or planned transmission with adequate capacity. With the exception of the Riverside East and Imperial East SEZs in California, and in general the Arizona SEZs, BLM did not adequately account for this calculus in designating the proposed SEZs.[14]

As the table below discusses in more detail, too much total area of the proposed SEZs is too far from load, and many SEZs lack adequate transmission access. Indeed, of the 18 proposed SEZs, 5 (comprising 112,955 acres) are more than 20 miles from existing transmission, a distance past which it is often economically infeasible to build interconnection lines. Although some SEZs are in areas where new transmission capacity is proposed, developers have no certainty about when transmission lines will be built in

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[13] A transmission "wheel" is transmission service over a single transmission provider's system. To move power to a distant location, a project may need to piece together several transmission wheels, or segments. For example, a project may need to deliver electricity over a transmission line to get the terminus of a proposed major inter-regional transmission line, then over the inter-regional transmission line, then over a line from a distant terminus of the inter-regional line to a distribution station. If a single transmission provider owns all three lines, there is only one wheel; if two or three providers own those lines, there are two or three wheels.

[14] The Draft PEIS admits that, in evaluating whether to designate additional transmission corridors, BLM "only considered the locations of existing transmission lines and designated corridors and did not look at the available capacity on existing lines." Draft PEIS at 1-14. We submit that BLM did not adequately consider the locations or capacity of existing or planned transmission lines in proposing SEZs.

those corridors.[15] As for the remaining 13 SEZs, BLM has not performed any type of impact study to determine whether or not there will be capacity available on these lines.[16]

State	SEZ / BLM Field/District Office	Acres	% of Total SEZ Acres
Colorado	Antonito Southeast (La Jara/Conejos)	9,729	
	De Tilla Gulch (Saguache/Saguache)	1,522	
	Fourmile East (La Jara/Alamosa)	3,882	
	Los Mogotes East (La Jara/Conejos)	5,918	
	Total :	**21,051**	**3.1%**
New Mexico	Afton (Las Cruces/Dona Ana)	77,623	
	Mason Draw (Las Cruces/Dona Ana)	12,909	
	Red Sands (Las Cruces/Otero)	22,520	
	Total:	**113,052**	**16.7%**
Utah	Escalante Valley (Cedar City/Iron)	6,614	
	Milford Flats South (Cedar City/Beaver)	6,480	
	Wah Wah Valley (Cedar City/Beaver)	6,097	
	Total:	**19,191**	**2.8%**
	The SEZs designated in Colorado, New Mexico, and Utah collectively comprise 21.9% of the total SEZ acreage. We are skeptical that much of this land will be developed with solar energy.		
Arizona	Brenda (Lake Havasu/La Paz)	3,878	
	Bullard Wash (Hassayampa/Yavapai)	7,239	
	Gillespie (Lower Sonoran/Maricopa)	2,618	
	Total:	**13,735**	**2.0%**

[15] This concern is heightened by the recent vacatur and remand of DOE's National Interest Electric Transmission (NIETC) Corridors and associated NEPA review. *See Cal. Wilderness Coal. v. DOE*, 631 F.3d 1072 (9th Cir. 2011).

[16] We are happy to provide more detail about these constraints by meeting with BLM.

State	SEZ / BLM Field/District Office	Acres	% of Total SEZ Acres
	It is unclear why such a solar resource-rich state has the smallest percentage of SEZ-designated acres. The solar market in Arizona is emerging and there is much more potential in that state than the Draft PEIS recognizes. (Indeed, BLM recognizes that "development could be constrained in Arizona and Colorado by the amount of land available under the SEZ program alternative." Draft PEIS at 2-23.) Indeed, the Draft PEIS has just touched the surface of suitable sites in Arizona. For example, Arlington West, Dendora, Hassayampa, Harquahala, Yuma, La Paz, and sites near Palo Verde are not included. Moreover, the limited amount of reconnaissance performed for the existing recommended sites on biological and cultural resources will leave the proposed SEZs open to duplicative and costly analysis. Supplemental locations, along with the existing locations, should be studied more carefully. In addition, the selection of SEZs should reflect the existing lines that will interface with known reconductoring for increased capacity.		
Nevada	Amargosa Valley (Southern Nevada/Nye)	31,625	
	Delamar Valley (Ely/Lincoln)	16,552	
	Dry Lake (Southern Nevada/Clark)	15,649	
	Dry Lake Valley North (Ely/Lincoln)	76,874	
	East Mormon Mountain (Ely/Lincoln)	8,968	
	Gold Point (Battle Mountain/Esmeralda)	4,810	
	Millers (Battle Mountain/Esmeralda)	16,787	
	Total:	**171,265**	**25.3%**
	Nevada is a relatively small market, but it has significant potential. BLM manages roughly 68% of the land within Nevada's boundaries and yet the Draft PEIS proposes to make very little of that land available for solar development under the Preferred Alternative (only a miniscule amount would be available under the SEZ Alternative), including areas in Clarke and Nye Counties. In addition, there is a disconnect between new generation capacity and transmission projects proposed for southern Nevada and the destination for the electricity those projects would generate and carry. Additional SEZs would address these two concerns.		
California	Imperial East (El Centro/Imperial)	5,722	
	Iron Mountain (Needles/San Bernardino)	106,522	

State	SEZ / BLM Field/District Office	Acres	% of Total SEZ Acres
	Pisgah (Barstow/San Bernardino)	23,950	
	Riverside East (Palm Springs/Riverside)	202,896	
	Total:	**339,090**	**50.1%**
	The most promising proposed SEZ is the Riverside East SEZ, which already has seen significant development interest. However, we understand that BLM will sharply reduce the developable acreage in this SEZ because of visual and wildlife corridor concerns. Iron Mountain is remote from any significant transmission. Iron Mountain also is of concern to the conservation community. The Pisgah SEZ has suitable planned transmission access but portions of the SEZ have biological resources which create high litigation risk, limiting the prospects for development that could utilize the planned transmission. As a practical matter, we believe that Iron Mountain should be removed from the SEZ list, not count toward needed acreage, and be replaced by other SEZs in California.		

In sum, too few of the proposed SEZs are in California and Arizona, where the load centers are. In addition, many of the proposed SEZs lack adequate access to transmission and/or have other constraints that would threaten their utility as useful development zones. *See* Section II.B.6 below (recommending that additional zones be developed in promising areas).

Solution: Re-evaluate potential SEZs to better account for proximity to load centers and transmission access. BLM should consult with the CAISO, as well as other transmission authorities, to generate better assessments of transmission proximity and capacity, and factor those assessments into any SEZ designations. Again, BLM should also work with the FERC to encourage expedited deployment of new or upgraded transmission facilities to serve SEZs.

e. A significant portion of the total zoned acreage within California is in areas that are controversial.

As the table above makes clear, nearly 130,000 acres (20%) of the proposed California SEZs are in two SEZs (Iron Mountain and Pisgah), portions of which have important biological resources. Conservation organizations have sharply opposed Iron Mountain and some have also opposed Pisgah. As a practical matter, we believe that the Iron Mountain SEZ should be eliminated given its distance from transmission and resource conflicts. For these reasons, it is imperative that other California SEZs be studied and designated in the very near term. Our concern with the PEIS is that BLM may "declare victory and leave" the field, leaving inadequate SEZs and a perception that siting issues have been resolved.

Solution: Remove Iron Mountain from the SEZ list and designate new SEZs in California to replace it. See Section II.B.6 below (proposing specific areas for further study as SEZs).

f. The SEZs need to be larger and more numerous.

(i) Many of the proposed SEZs, particularly in California, already are the subject of pending applications.

According to data obtained from BLM public database for California,[17] of the 339,090 acres currently proposed as SEZs, pending ROW applications already cover 108,864 acres. These applications reduce the supposed 677,384 acres available under the SEZs by 16% overall and by 32% in California. *See* Figure 1 and Table 1 below.

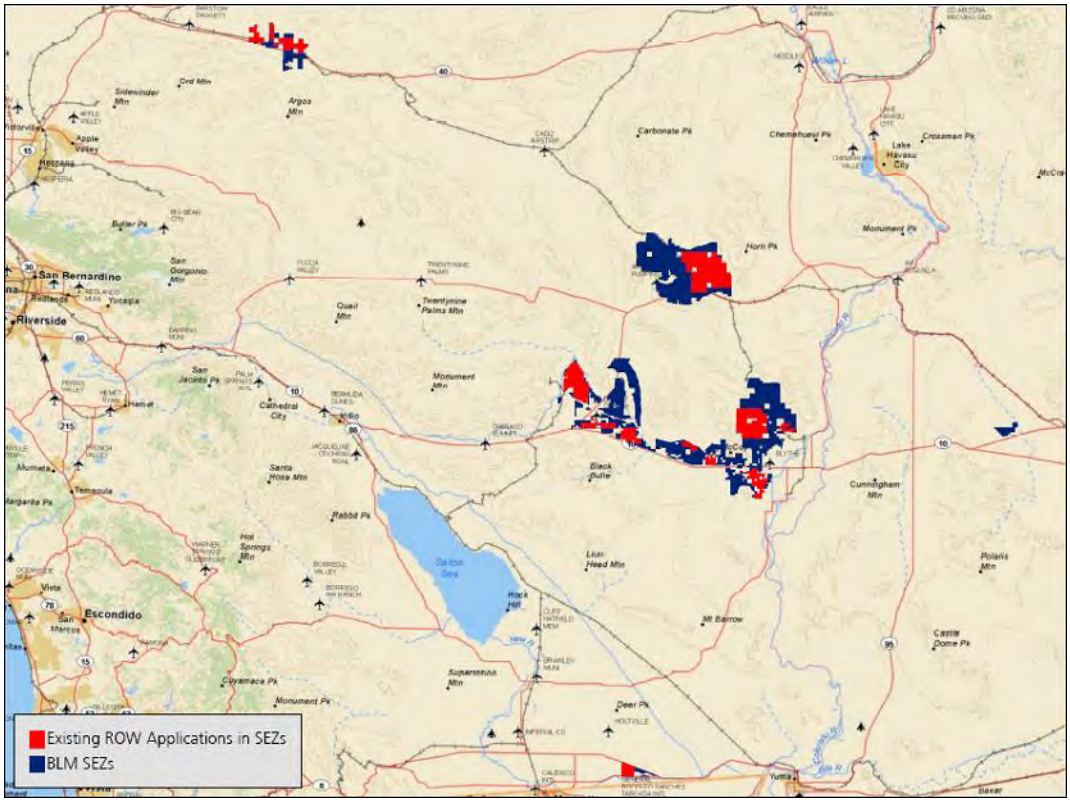

Figure 1. Existing ROW applications in proposed California SEZs.

[17] BLM, RenewEnergyROW (shape file) (available at ftp://ftp.blm.gov/pub/CA/gis/ca_sync/geodatabasesZIP (last visited Mar. 10, 2011)).

Proposed SEZ	Acreage of SEZ	Existing ROW Acreage	Proposed SEZ	Acreage of SEZ	Existing ROW Acreage
Imperial East			Riverside East		
SolarReserve		3,822	Cuckwalla Solar 1		4,090
Total	5,722	3,822	Palen Solar I, LLC		5,080
Iron Mountain			Desert Sunlight Holdings, LLC		14,800
Leopold Companies- Ward Valley		35,304	Ridgeline Energy, LLC		1,820
Total	106,522	35,304	enXco-McCoy		12,830
Pisgah			enXco-Eagle Mountain Soleil		1,055
enXco TroyLake Solar		3,532	FPL Energy-McCoy		7,040
enXco Caboose		3,518	enXco-Mule Mountain		1,990
Calico Solar, LLC-Calico		4,488	Genesis Solar, LLC-Genesis Solar		1,950
Total	23,950	11,538	First Solar-Desert Quartzite		7,290
			Ridgeline Energy-Desert Center II		255
			Total	202,896	58,200
			Total	339,090	108,864

Table 1. Acreages of proposed SEZs in California vs. Acreage of existing ROW applications in SEZs.

(ii) BLM should evaluate and propose SEZs within the West Mojave and the Chocolate Mountains of California, and additional SEZs in Nevada and/or Arizona.

The Draft PEIS does not propose designating any SEZs in the West Mojave and/or the Chocolate Mountains. Yet the West Mojave region in Eastern Kern County and West San Bernardino County, along with parts of the counties of Inyo and Los Angeles, is considered by many to be the most important and valuable solar resource area in California—and for good reason. This area is strategically located near two electric transmission corridors owned by Southern California Edison and the Los Angeles Department of Water and Power. It is also adjacent to the Tehachapi Wind resource area, which would allow complimentary development of wind and solar resources, significantly reducing integration costs.

The West Mojave region additionally offers some of the world's highest quality solar radiation levels. Because of higher elevation and clearer skies, the solar radiation levels in the West Mojave are, in some locations, more than 10% higher than in the Eastern Mojave. As a result, the amount of land needed to generate the same amount of electricity is 10% less. The quality and nature of the radiation in the West Mojave also make it the single best area for development of concentrating solar power plants within the state of California. Moreover, the area is located in between two large military installations, Edwards Air Force Base and China Lake Naval Air Weapons Station, and much of the land is disturbed and made up of many small, private parcels. The lands in the West Mojave thus offer conditions that make siting solar energy generation projects there attractive for both developers *and* environmental stakeholders, as evidence by the fact

that many in the conservation community have joined with us in calling for the BLM to include the West Mojave as one of the first additional SEZs.

This area may have been excluded from the initial list of SEZs because it is already subject to a Habitat Conservation Plan and federal land use plan amendment known as the West Mojave ("WEMO") Plan. Finalized in 2005, the WEMO Plan presents a comprehensive strategy to conserve and protect the desert tortoise, the Mohave ground squirrel, and nearly 100 other sensitive plants and animals and the natural communities of which they are a part. The Plan set aside 1.5 million acres of prime solar development land for a state protected species (the Mohave ground squirrel), lands for expansion of military reservations, as well as tens of thousands of acres for off road vehicle use. Unfortunately, the Plan failed to take account of the region's extraordinary solar resources and did not identify any land for renewable energy development. The Plan generically designated 1% of the certain restricted areas for all remaining uses, including renewable energy, but even this carve-out is unhelpful because BLM failed to include a process for identifying which lands would be acceptable for solar development.

Although the WEMO Plan aims to provide a comprehensive strategy to conserve and protect sensitive wildlife and their natural communities, the underlying science upon which vast amounts of land were set aside was not robust. For example, in the case of the Mohave ground squirrel, the available biological data was extremely weak, and relied upon outdated research from a single investigator. Based on this questionable evidence, the Plan reserved 1.5 million acres to protect core and non- core habitat (the Plan does not distinguish between the two) for a single state-only listed species.

Whether or not intentional, BLM's refusal to plan for renewable energy development in the WEMO Plan area has encouraged, and will continue to encourage, solar developers to seek to develop projects in less advantageous areas. In some instances, projects have been and will be sited in areas with significantly greater potential for environmental conflict because developers cannot overcome the severe restrictions of the WEMO Plan. In light of these circumstances, and questions surrounding the development of the WEMO Plan noted above, we suggest that BLM revisit the Plan as part of these PEIS proceedings to consider the creation of one or more SEZs in the West Mojave.

Admittedly, BLM's planning and review of the West Mojave will require significant resources. Efforts being undertaken in other contexts may be leveraged to save some time. For example, the State of California, through the California Energy Commission, has recently launched an extensive vegetation mapping exercise, the results of which should provide important and timely information for the BLM's review of the WEMO Plan, and for the California DRECP. In addition, CEERT, as part of its coordination of California's Renewable Energy Transmission Initiative (RETI) planning effort, has developed a map of the West Mojave which identifies the recommended areas which should be evaluated by BLM as part of its analysis of the West Mojave as a new SEZ. Even with these resources, there is still much work to be done to identify SEZs, but it will

be worthwhile to provide for development opportunities in this region with unparalleled solar resources.

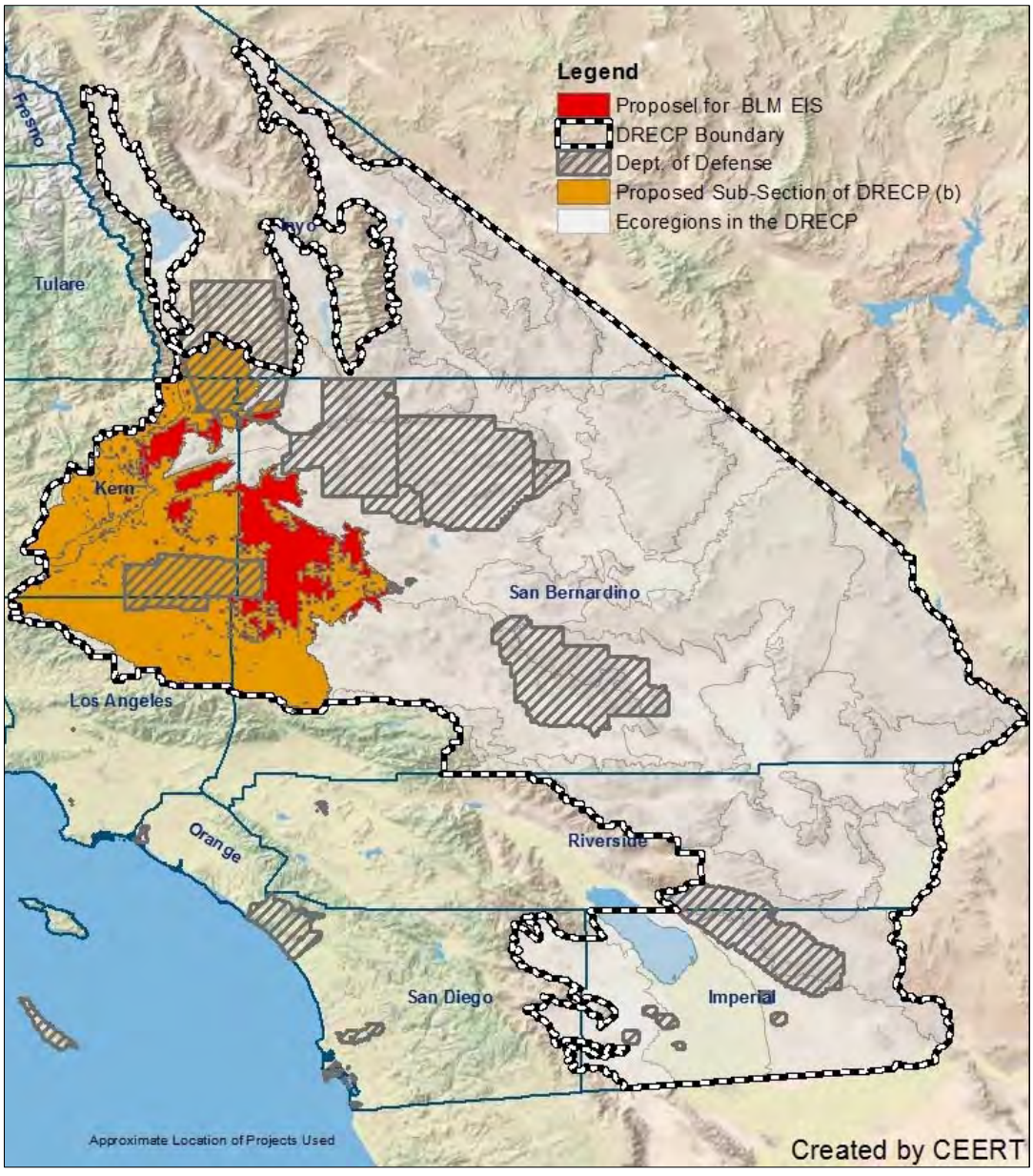

Figure 2. Suggested zone for studying the possibility of SEZs in the West Mojave.

Regarding the Chocolate Mountains, BLM has already indicated some intention to designate a SEZ in that area. We think it wise for BLM to consider SEZs in the

Chocolate Mountains and the area of the WEMO Plan. BLM should act with alacrity if these are new areas that it believes would accommodate significant solar development.

Consistent with the comments above, BLM should also consider designating more lands in Nevada and Arizona for solar development. In Arizona, we are informed that the BLM State Director excluded any acreage from SEZ consideration that is subject to a pending application. As a result, there were no applications in the areas that BLM identified as proposed SEZs, but many applications in other areas—thereby producing the opposite outcome intended for the PEIS; BLM should consider including those other areas. It is unclear how the proposed SEZs in Nevada were identified, or why there are not more SEZs in a state in which BLM manages 67% of the available land. These states have more and better areas with regard to insolation, load, and transmission, and the Draft PEIS unfairly ignores or minimizes the viability of their promising areas.

Solution: As stated above, BLM should establish a consistent process for identifying and approving new SEZs or SEZ expansions (assuming, of course, that those SEZs follow the recommendations we have laid out above). Such process will be important if BLM designates SEZs, and BLM should identify that process in the Final PEIS. BLM also should begin evaluating new potential SEZs in the West Mojave, Chocolate Mountains, lands identified in the Arizona Restoration Design Energy Project, and other areas. Figure 3 below depicts one possible area for West Mojave utility-scale solar development.

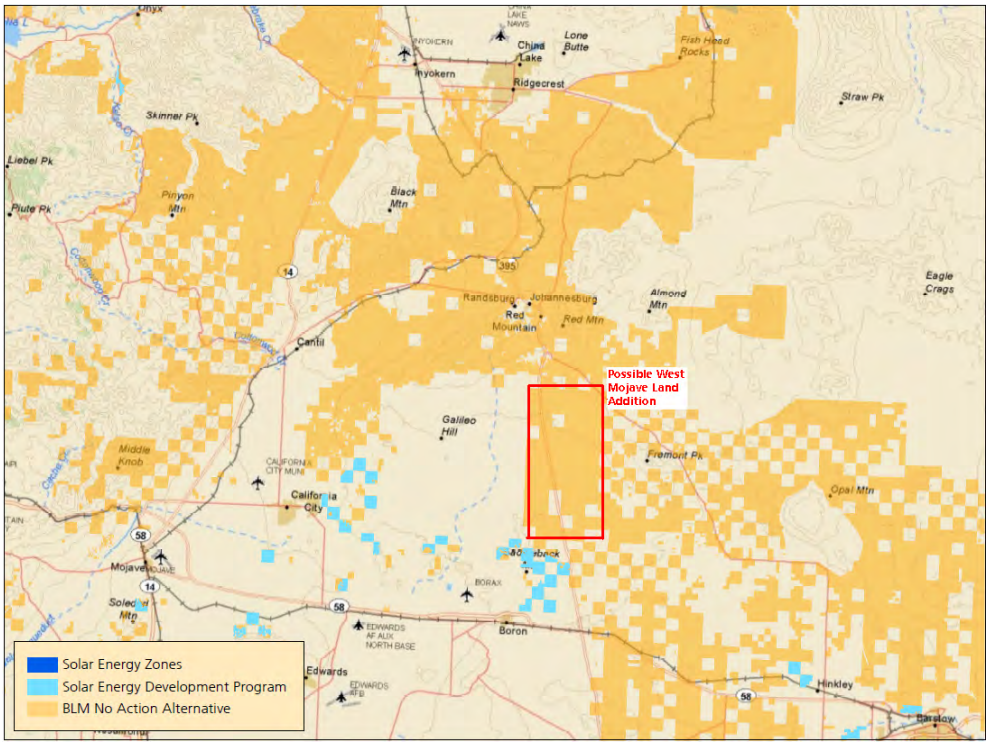

Figure 3. Proposed starting point for SEZ evaluations in the West Mojave.

3. The proposed SEZs do not adequately account for aviation, seismic, and state and local government considerations.

a. Aviation

The Draft PEIS notes that the locations of the proposed SEZs were developed considering all military and civilian airfields within five miles of the SEZ boundary. The Draft PEIS notes that the military also provided information that was used to identify potential area-wide impacts. In many instances, the military identified specific potential issues and concerns with SEZs that have been incorporated into the analysis. Because of the potential for differential impacts caused by different solar technologies and the various types of military uses, specific impact analysis and definition of impacts were not possible. Where military or civilian airfields are within 25 mi (40 km) of a SEZ, this was noted as a potential conflict.

The Draft PEIS states, however, that since FAA regulations would control activities near these facilities, no additional analysis was performed. Because of the site-specific nature of the potential impact on military airspace, no assessments of the potential level of impact could be made.

At least four of the SEZs are in known Special Use Airspace (SUA) zones: Bullard Wash in Arizona; Iron Mountain and Riverside East in California; and Red Sands in New Mexico. While SUA-related height restrictions are not likely to cause an impact to trough, PV or dish technologies, they could serve as a constraint on power tower technology. The lengthy FAA process for removing height restrictions could take up to one year to complete. In addition, determining the impact of FAA and military altitude restrictions must be done in the initial stages of a project, and obtaining an official position from the military on its aviation concerns can take up to one year from the time the request is made.

b. Seismic considerations

Seismic information for the Draft PEIS was determined from the USGS, state of California and literature reviews. Data included USGS Quaternary Fault and Fold database of the USA class A fault search, National Earthquake Information Center Database. This information was reviewed within a 100 km radius of the center of each SEZ. While these are excellent sources of information, project seismic requirements are defined by local or state codes and are usually subject to the International Building Code (IBC). The seismic investigation used for the Draft PEIS apparently did not consider the IBC, which is the defining requirement for projects.

c. Water resources

Regardless of whether a plant employs dry or air cooling, PV or dish technology, a small amount of water may be required for potable, sanitary, mirror cleaning, and other routine

maintenance activities. The Draft PEIS does not provide sufficient analysis of water resources. Determination of the adequacy of water resources is typically performed by a hydrology study, evaluation of nearby wells or by drilling test wells and having consultations with state or local water agencies. At this point, there is no way to determine if the proposed SEZs can provide enough water for the potential projects that could be placed in that SEZ.

If the PEIS requires multiple projects to be situated on a given site, then there is a high likelihood that a number of projects could exceed the ability of the underground reservoir and associated recharge system to provide water over the lifetime of the project or projects. Only a detailed assessment prior to designating a SEZ would provide enough information to make the determination of adequate water resources.

d. State and local considerations

In the selection of the SEZs, BLM staff was asked to identify areas near existing transmission or designated corridors. These areas also needed to be near existing roads, have slope of 1 to 2% or less with 5% slope as the maximum slope considered feasible, and contain a minimum of 2500 acres. Additionally, the preliminary results from the Western Governors Association Western Renewable Energy Zone Initiative were taken into consideration. Draft PEIS at App. D-1. Criteria from the Arizona Renewable Resource and Transmission Identification subcommittee also were used. Draft PEIS at App. D-21. BLM then selected the potential SEZs as being areas of low sensitivity.

In addition, BLM has not consulted with state or local authorities to determine significant issues that may arise in those arenas. BLM should engage state and local authorities to identify any potential issues in advance.

Solution: BLM should account for potential aviation, seismic, and water resources considerations when designating, or adjusting the boundaries of, SEZs. BLM also should engage in interagency cooperation with state and local governments to identify and mitigate any concerns, as well as with the FAA and the Department of Defense to identify and mitigate any concerns. *See also* Section II.F ("Miscellaneous issues").

4. BLM should prescribe a process for applying for land within designated SEZs, and only after it provides for public comment on that process.

The Draft PEIS does not specify a process for developers to apply for and secure parcels within designated SEZs, other than to suggest that BLM might use competitive bidding. As we explain below in Section II.F, we do not support a competitive bidding system because of the added costs such a system would impose on projects.

Whatever process BLM develops, BLM should not adopt that process without providing for public review and comment, including hearings. To be specific, BLM should not adopt a SEZ application process in the Final PEIS (unless BLM provides another public comment period, including on the proposed process) or in an Instruction Memorandum or other document that is not accompanied by a public comment period. The manner in which any SEZs will be made available for development will be vitally important to many developers and they should be given the opportunity to submit their views.

C. BLM should select the Solar Energy Development Program (Preferred) Alternative over the SEZ Alternative, but the Preferred Alternative also needs clarification and modification.

BLM should select the alternative that strikes the best balance between promoting utility-scale solar energy development and avoiding and minimizing the impacts of such development. The Solar Energy Development Program Alternative achieves that goal so long as BLM (a) *is able to designate SEZs in accordance with our comments above*, and (b) *modifies or clarifies the lands it would exclude from development* under the Preferred Alternative.

If BLM is unable to evaluate and designate SEZs that meet the criteria we have set forth above, we respectfully request that BLM evaluate and consider selecting a fourth alternative. Under this alternative, BLM would (1) finalize siting criteria and "comprehensive program administration and authorization policies and design features" (*see* Section II.D & Attachment A (discussing necessary modifications to policies and design features)); (2) clarify that the SEZs are interim pending further work and that they do not indicate that the entire acreage will be available or suitable for development; (3) conduct the additional work required to make the SEZs useful and publish a supplemental EIS and ROD once that work is complete.

However, we believe that BLM is capable of taking the actions we have recommended and issuing a Final PEIS in a timely manner. Whatever alternative BLM adopts, BLM must provide a clear and timely path forward for existing applications.

Among the two action alternatives considered, BLM is right to identify the Solar Energy Development Program Alternative as the agency's Preferred Alternative. As BLM explains, the Preferred Alternative "would likely result in the highest pace of development at lowest cost to the government, developers, and stakeholders," in part by providing the greatest siting flexibility. At the same time, the Preferred Alternative would "provide a comprehensive approach for ensuring the potential adverse impacts would be minimized to the greatest extent possible." Draft PEIS at ES-29. The Preferred Alternative would exclude solar development in the most sensitive areas, encourage development within the SEZs, and provide the greatest degree of flexibility in siting and designing projects—flexibility that is crucial to the long-term success of the utility-scale solar industry. *See*

generally Draft PEIS at 6-31 to 6-40, 6-48 to 6-53 (discussing benefits of Preferred Alternative).[18]

Our support of the Preferred Alternative—and in particular truly useful SEZs—is subject to several important caveats, discussed in Sections II.C.1 and II.C.2 immediately below.

1. Designation and incentives for SEZs

As we discuss above in Section II.B, the SEZs need substantial additional work if they are to be useful SEZs.

Policies to encourage development in fully-vetted SEZs make sense—indeed, they are crucial if SEZs are to have any value. These include, among other things, providing for streamlined environmental review in the form of EAs, providing expedited transmission interconnection assurances, and withdrawing SEZs from other uses including mining, oil and gas development, and grazing.[19] However, these incentives should not result in unreasonable delays in the processing of applications for projects outside SEZs. Such a result would yield a de facto SEZ-only alternative, which is untenable for the reasons we discuss below.

2. Modification of excluded lands criteria

In calculating which lands to exclude from solar development under the Preferred Alternative, BLM excluded lands that failed to meet basic criteria (greater than 5% slope and/or solar insolation levels below 6.5 kWh/m^2/day) or that fell within a special designation or contained special characteristics (e.g., ACECs, designated critical habitat, wilderness characteristics). The result is the exclusion of roughly 70 million acres of BLM-managed lands, as shown in pink on the state-by-state maps reproduced in the Executive Summary and throughout the PEIS. It is difficult to tell which screen or screens—slope, insolation, ACEC, etc.—was or were used to exclude any given acre. BLM should provide easy access to GIS data and shape files to make this screening process more transparent.[20] This is of particular concern to developers with existing projects located within the pink (excluded) areas—not only do they want to know what

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[18] We note below that no other energy industry is limited to zones, whether in addition to other development or solely in zones.

[19] We urge BLM to describe with particularity the incentives for development within SEZs, which the Draft PEIS describes only generally.

[20] In addition, BLM should not adopt blanket exclusions based on assumed conflicts with preexisting, approved human uses. Solar development is not inherently incompatible with all other uses and, through negotiations with preexisting users of a site, developers may be able to design facilities that allow for multiple uses to coexist. This is particularly true in instances where a proposed solar facility might conflict with existing recreational uses.

screen or screens BLM has applied to the lands that are the subject of their ROW applications, they want to work with BLM to address any concerns that those screens raise.[21] In accordance with our comments in Section II.A above, BLM should commit to timely processing these existing applications during the preparation of the Final PEIS and regardless of what the PEIS says.

Finally, certain of BLM's screening criteria for the Preferred Alternative are overly restrictive. Subject to the third caveat immediately above, we refer not to areas with special designations or certain sensitive resources (e.g., wilderness characteristics) but to basic land characteristics, including lands that have greater than 5% slope and/or solar insolation levels below 6.5 kWh/m^2/day, or which are located in special recreation areas. While these lands are unlikely to be the subject of initial development potential and interest, they may become more attractive over the 20-year life of the PEIS.[22] Certainly some of the private lands which solar companies are being urged to develop have lower insolation or greater slope, and as technologies progress, there may be projects that can utilize much steeper slopes. Moreover, while the bulk of an application may be in an area with 5% slope or less, some arrays may be moved up a hillside to an 8-10% slope (where current technology may be slightly less efficient) for purposes of avoiding resource conflicts. The exclusions, therefore, must be subject to a rule of reason. Categorically eliminating these lands from development does not account for this fact and serves little purpose.[23] The PEIS should recognize that these non-environmental factors currently limit development interest and feasibility but may not do so in the future, and allow for development in areas with those characteristics (assuming that other siting criteria are met).[24]

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[21] An example of such a constructive program is occurring in the Ivanpah Valley watershed in California and Nevada, where multiple stakeholders have agreed to study the biological characteristics and constraints of that area. Collaborative studies of this sort are preferable for the purpose of assessing where development should and should not take place, and under what conditions.

[22] In just a few short years, many photovoltaic (PV) systems have evolved and can now utilize slopes in the 8-10% range.

[23] The Draft PEIS recognizes that "concerns exist that by excluding [these] lands …, the BLM could be removing lands that some developers may find both technically and economically feasible to pursue in the future." Draft PEIS at 6-38. Indeed, almost the entire State of Nevada, 67% of whose lands BLM manages, is neither pink nor blue, but white—unavailable for development under any proposed alternative—in the Draft PEIS's maps. Moreover, the immense amount of land in pink, without explanation, leaves little of Nevada available for development. We strongly urge BLM to reconsider this determination, especially where not based on species concerns. *See* Section II.B.4-.6 (advocating for additional SEZs in Nevada).

[24] In any event we support BLM's decision to allow excluded areas to remain open to development of supporting infrastructure such as access roads and transmission lines. *See* Draft PEIS at ES-7 n.4 & 2-7.

3. The SEZ Alternative would significantly stymie utility-scale solar development with no added benefit.

Compared to the Preferred Alternative, the SEZ Alternative likely would slow the pace of development without offering any appreciable environmental protection advantage. Specifically, the SEZ Alternative likely would forestall many projects from being built, and force others on to private land.[25] This shift would drastically increase the cost of private land for development and compensatory mitigation, in turn further curbing solar development generally, including on already-disturbed lands.[26] Such a result would fail to meet BLM's goal of locating 10,000 MW of renewable energy on public lands.

In addition, utility-scale solar facilities seek to produce energy at a price that approaches grid parity, a critical achievement that will be arrested if developers face severe restrictions on their ability to develop economically feasible projects. Economic feasibility requires not only reasonable land valuations but flexibility in siting and the ability to develop in close proximity to load centers and with adequate access to the electricity market (i.e., transmission). The SEZ Alternative would eliminate this flexibility[27] and, given that many of the proposed SEZs are not close to load or transmission, leave developers stranded in remote areas with little market or transmission access. *See* Section II.B.4 (discussing market and transmission access problems with SEZs). The Draft PEIS does not fully evaluate these and other impacts associated with the SEZ Alternative.

What is worse, the SEZ Alternative would create these adverse impacts without offering any appreciable environmental protection benefit. While the SEZ Alternative could reduce or eliminate some of the impacts that might come from potentially dispersed development under the Preferred Alternative, the SEZ Alternative could "result in greater concentrations of impacts in the vicinity of the SEZs," Draft PEIS at ES-29, as well as in the SEZs themselves, Draft PEIS at 6-53. This is a real risk considering that BLM lacks

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[25] *See* Draft PEIS at 6-53 (stating assumption that "development that does not occur on BLM-administered lands was assumed to be made up for by development on non-BLM-administered lands"). This statement, however, does not account for the fact that private land cannot accommodate all (or even most) of the projects that otherwise would be built on public lands; there simply are not enough private lands that are commercially viable for this shift to occur.

[26] A zones-only approach on BLM-managed land could more directly discourage development on private lands adjacent to restricted (i.e., "no go") areas. State and local permitting authorities might be disinclined to permit projects on lands near areas that BLM has categorically excluded from development. While this outcome is possible under the Preferred Alternative, as well, far more private lands could suffer from this problem under the SEZ Alternative.

[27] Developers require and ask for a *reasonable* degree of flexibility. The SEZ Alternative would allow development on approximately 0.15% of BLM-managed lands in the six southwestern states covered by the PEIS. The Preferred Alternative would allow development on 4.9% of such lands. This is a critical difference but one that, even under the Preferred Alternative, would leave the overwhelming majority of BLM-managed lands off-limits to solar development.

the information it needs to accurately assess the SEZs' potential resource conflicts and carrying capacity. *See* Section II.B.

The SEZ alternative would not yield any net benefits to environmental protection over an alternative (like the Preferred Alternative) that provides more flexibility but imposes appropriate restrictions to ensure responsible development. As the Draft PEIS recognizes, the SEZ Alternative would (the Draft PEIS says "might" but that is far too optimistic) "reduce the flexibility of both the agency and developers in terms of identifying appropriate locations for utility-scale development. *There are likely to be economically attractive sites for solar energy development outside of the SEZs that can meet the environmental protection measures outlined in the PEIS*." Draft PEIS at 6-43 (emphasis added). Siting criteria that restrict development in high-conflict areas (*see* Attachment A and BLM's recent interim guidance[28]), combined with well-considered design policies and mitigation measures, can effectively promote solar development, preserve siting flexibility, and minimize adverse impacts; the SEZ Alternative cannot. The Preferred Alternative (with the modifications we propose) strikes an appropriate balance between promoting solar development and restricting it; the SEZ Alternative does not. No other industry that extracts energy resources or develops energy on BLM-managed lands is limited to zones, and there is no reason why the utility-scale solar industry, which is actively committed to responsible development and which supports significant restrictions to achieve that end, should be treated differently.

There are two more points. First, the SEZs would be inadequate even though they total 677,000 acres—463,000 acres more than the total acreage BLM estimates will be needed to produce 24,000 MW of solar-generated energy on BLM-managed lands over the 20-year life of the PEIS. As we discussed in detail in Section II.B above, many of the SEZs lack adequate access to existing or planned transmission, are located too far from load centers, already are the subject of applications, and/or raise concerns about sensitive resources. In addition, BLM lacks adequate detailed biological and cultural information about the SEZs to know whether additional problems will arise when developers try to site specific projects within the SEZ boundaries. It is highly likely that these known and potential conflicts will significantly reduce the amount of available or suitable acreage within the proposed SEZs for utility-scale solar development.[29] *See* Draft PEIS at 6-35

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[28] BLM, Instruction Memorandum No. 2011-061, *Solar and Wind Energy Applications - Pre-Application and Screening* (Feb. 7, 2011), available at http://www.blm.gov/pgdata/etc/medialib/blm/wo/Communications_Directorate/public_affairs/news_release_attachments.Par.79538.File.tmp/IM2011.61.Prescreening.pdf.

[29] BLM recognizes that not all of the land within the SEZs will be developable, although it optimistically assumes that 80% will be developable. Draft PEIS at 2-23. As discussed above and in Section II.B, this figure does not adequately account for the known and potential constraints associated with the proposed SEZs. See also Draft PEIS at 6-33 (recognizing that areas within the 22 million acres identified as available for development under the Preferred Alternative likely would not be "suitable for development because of as yet unidentified conflicts with other

("Based on the potential conflicts identified, some of the proposed SEZ areas may be reduced in size or eliminated entirely when the final SEZs are identified in the ROD for this PEIS."). The Draft PEIS appropriately recognizes this fact and concludes that, as a result, "it is possible that the amount of lands that would be available under the SEZ program alternative might not be enough to support full development of the RFDS in states other than Arizona and Colorado." Draft PEIS at 6-44; *see also* Draft PEIS at 6-40 to 6-45, 6-48 to 6-53 (discussing limitations of SEZ Alternative); Draft PEIS at 6-52.

Second, the SEZs would be inadequate even though BLM could expand or add new SEZs in the future. As BLM recognizes, BLM would need to propose a land use plan amendment and subject any proposed expanded or new SEZ to environmental review under NEPA. *See* Draft PEIS at ES-7, ES-12, 6-31 n.5. That is a multi-year process that cannot respond nimbly to developers' needs and market dynamics.[30] In addition, if development is restricted to SEZs, adequate SEZs are needed now, not in the future. The proposed SEZs are far from adequate for the reasons discussed above; developers will not build many of their projects and shift the remainder to private lands unless and until these inadequacies are addressed. BLM's ability to expand or add new SEZs cannot save the SEZ Alternative from its own problems.[31]

To be clear, in addition to believing that the SEZ Alternative would make bad policy, we believe that BLM cannot legally choose the SEZ Alternative. As discussed above, the SEZ Alternative does not fulfill the purpose and need of the PEIS or comply with applicable laws and mandates, and its impacts have not been adequately analyzed.

D. Energy policies and design features (Appendix A)

Many of the energy policies and design features proposed in Appendix A to the Draft PEIS are reasonable and necessary to protect natural resources. However, certain policies and features are unnecessarily restrictive because they are costly to solar development and

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resources"); Draft PEIS at 6-39 (same); Draft PEIS at 6-33 n.7 ("[G]overnment-to-government consultation and inter-agency consultation are still ongoing and could result in the identification of additional concerns" in the proposed SEZs). Our member companies' experiences over the last few years suggest that far less of the proposed SEZs—perhaps as low as 10-40%—will be developable.

[30] In fact, BLM considered suggestions to include additional SEZs in the Draft PEIS but could not because "the site-specific evaluation of SEZs requires a large amount of data and lengthy evaluation time." Draft PEIS at 2-29. Such process will be even longer if BLM gathers the information and conducts the analysis that we think is necessary for useful SEZs.

[31] This is not to say that BLM should not establish a process for identifying and approving new SEZs. *See* Section II.B.6. Such a process will be important if BLM designates SEZs, and BLM should identify that process in the Final PEIS. The point here is that that process cannot sufficiently ease, on a meaningful timeframe, the unreasonable constraints the SEZ Alternative would impose.

yet provide little benefit to the environment. The preference to avoid, then minimize, then mitigate adverse impacts is generally sound, but in some instances unnecessarily sacrifices development where mitigation can be truly effective, or where the impact at issue is not significant in the first place. As a result, a requirement to avoid and/or minimize impacts can unintentionally and unnecessarily add costs to a project.

We appreciate BLM's effort to provide specificity in the PEIS, but the agency must be careful to avoid broad brush strokes where small ones are needed. That is, some policies and design features may not apply to all projects. BLM should take care to craft the policies and features to avoid unintended or unnecessary constraints to solar development, and should allow for varying site conditions and solar field design.

Specific comments on the proposed policies and design features in Appendix A are provided in Attachment A to this document.

E. Rental and bonding policies

The Draft PEIS states that "elements of [BLM's] existing policies addressing rental fees, terms of authorization, due diligence, bonding requirements, and BLM access to records would remain in effect." Draft PEIS at ES-6 n.3. BLM should modify these policies to be less expensive and less restrictive for solar developers.

1. Rental policy

On June 10, 2010, BLM issued Instruction Memorandum No. 2010-141, *Solar Energy Interim Rental Policy* ("2010 Rental Policy"). The policy expires on September 30, 2011. Under the methodology reflected in the 2010 Rental Policy, the annual rent for a solar project located on BLM-managed lands depends on the project's acreage, power capacity, and type of solar technology. Although the rental policy helpfully provides a greater level of certainty for developers (which is helpful in negotiating PPAs and other contracts), the rents it establishes are too high. BLM should use the Final PEIS to establish a new policy that takes the following considerations and points into account:

- Most BLM lands that are desirable for solar development are located in arid regions where public land value is based on grazing, recreational or open public use. As such, rents—particularly acreage-based fees—should not be very high given the nature of the BLM lands proposed for use. BLM must remember that solar developers do not acquire BLM's mineral rights when they receive a ROW grant.

- Utility-scale solar companies have begun securing similar or comparable private lands for project development and/or mitigation. These land values are typically in the range of $900-$2,500 per acre, excluding mineral and water rights. These lands generally do not have agricultural, industrial, or other development value, other than the proposed solar use.

- Using standard industry MAI appraisal methods, and also using Uniform Appraisal Standards for Federal Land Acquisitions (Yellow Book standards), annual rental values should be in the range of $72-$200 per acre per year, given a capitalization rate of 8%. When acreage- and capacity-based fees are combined, BLM's 2010 Rental Policy establishes much higher values, particularly for Riverside County in California, with little explanation. BLM's rents also appear to be based largely on the value of irrigated agricultural land, which have a higher value than the non-irrigated lands on which most projects are proposed.

- Rental fees are self-reinforcing in that they are to be used to set the "highest and best" use of BLM-managed lands (i.e., BLM may determine that the alternative highest and best use for a given parcel is another large-scale solar facility, rather than grazing, recreation, etc.). For this reason, BLM must be especially careful in its calculations.

- According to the Draft PEIS, BLM typically uses a 50% encumbrance factor when setting acreage-based rents. However, for utility-scale solar projects, BLM uses a 100% encumbrance factor "to reflect the high density land use common to solar energy projects." Draft PEIS App. A at A-11. Yet the Draft PEIS also states that the capacity-based fee is necessary to "capture the increased industrial use value of the authorization, above the limited rural/agricultural land value captured by the base rent." Draft PEIS App. A at A-12. Because BLM already has doubled the base rent encumbrance factor it normally uses, it is unclear how BLM can justify an additional capacity-based fee can be justified.

The rents established by the 2010 Rental Policy impose a significant burden on the economic feasibility of many projects, at a time when solar energy is not yet cost-competitive with other sources of electricity.[32] Moreover, high rental rates on public lands lead to higher purchase prices for private lands, making it ever more difficult to develop projects and purchase lands for compensatory mitigation. BLM should reduce the acreage- and/or capacity-based fees to arrive at more reasonable rental rates.

If BLM insists on charging the high rates set forth in the 2010 Rental Policy, it should adjust the number of acres deemed to be occupied by a solar facility. For example, rather

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[32] Per the 2010 Rental Policy, base rent for a 250-MW, 1,950-acre project in Riverside County will be $313.88 per acre per year, or $17.8 million over the project's estimated 30-year life (assuming a 20-year PPA with no extension). A net present value calculation using the Rental Policy's assumed federal discount rate of 5% yields $4,825 per acre per year. If the capacity-based rent factor is added (assuming that the project begins operation within 3 years), total rent over 30 years increases by $17.7 million, with a total net present value of $7,951 per acre per year. This value far exceeds the market price of similarly-situated lands.

than calculating the number of acres occupied based simply on the ROW grant, BLM should calculate that number based on the number of acres that project facilities physically occupy. Such calculation would be a better measure of a project's impact and provide for a more reasonable rent schedule. Alternatively, BLM could reduce the encumbrance factor to 50% for that land that does not actually house the facilities associated with a project.

2. Bonding policy

On October 13, 2010, BLM issued Instruction Memorandum No. 2011-003, *Solar Energy Development Policy* ("2010 Solar Policy"). The policy expires on September 30, 2011. Among other things, the Policy requires developers to post a performance and reclamation bond for each project. Acceptable bond instruments are cash, cashier's or certified checks, certificate or book entry deposits, negotiable U.S. Treasury securities, surety bonds, irrevocable letters of credit, and an insurance policy that identifies BLM as the beneficiary. A bond must cover liabilities associated with hazardous materials, decommissioning, and reclamation. In calculating bond amounts, BLM will look to the bonding requirements applicable to mining operations under 43 C.F.R. Subpart 3809.

BLM should use the Final PEIS to revise the bonding requirements set forth in the 2010 Solar Policy. We understand and support the important obligation to decommission solar projects and reclaim BLM-managed lands when those projects reach the end of their useful economic lives. We also appreciate that BLM allows bond amounts to be increased on a graduated basis during construction. However, the bond instruments that BLM will accept are too narrow and the bond amounts that BLM is requiring are too high.

a. The bonding requirements for surface mining operations do not and should not apply to utility-scale solar projects.

The 2010 Solar Policy indicates that BLM calculates bonds for utility-scale solar projects in part by using the surface mining requirements set forth in 43 C.F.R. Subpart 3809, §§ 3809.500-.599. This approach is misplaced, imposes onerous and unnecessary costs on the solar industry, and provides no additional public land protection.

BLM promulgated surface mining financial assurance regulations in response to the "inability or unwillingness of some operators to meet their reclamation obligations" as mine operators simply abandoned mines. 65 Fed. Reg. 69,998, 70,002 (Nov. 21, 2000). To avoid, or at least limit, taxpayer liability for unsecured or undersecured surface disturbances caused by mining, BLM now requires a project developer to provide financial assurance that it will be able to cover all costs of reclamation. 43 C.F.R. §§ 3809.500-.599. Reclamation concerns identified in the surface mining context include: (1) isolation, control, or removal of acid-forming, toxic, or deleterious substances; (2) re-grading and reshaping to conform with adjacent landforms, facilitate revegetation, control drainage,

and minimize erosion; (3) rehabilitation of fisheries and wildlife habitat; (4) placing growth medium and establishing self-sustaining vegetation; (5) removal or stabilization of buildings, structures, or other support facilities; (6) plugging of drill holes and closure of underground workings; and (7) providing for post-mining monitoring, maintenance, or treatment. 43 C.F.R. § 3809.5 ("Reclamation").

In contrast to surface mining operations, there is little risk that solar projects will be abandoned and BLM left with significant reclamation liability. A mine can become unprofitable due to unexpected and sudden swings in commodity prices. The decision to shut down a mine is driven by the need to eliminate the ongoing cash drain which occurs when operating costs exceed revenue during low price periods, even for mines with substantial remaining deposits. (As commodity prices swing, that portion of the deposit that is economic to mine ("reserves") also changes.) In contrast, a typical utility-scale solar power plant can require well over $1 billion in capital investment, in effect representing a pre-payment of "fuel cost", and before it can be built, must be first be secured by a long-term power contract (called a power purchase agreement, or PPA) with a utility customer at a fixed price for the power it generates. The project is either project-financed or balance sheet-financed by an owner with the financial resources to fund the significant capital investment required to build or acquire the solar facility.[33] In addition, the closest point in time at which a solar power plant is to be decommissioned is predictable—i.e., tied to the term of the PPA, which typically lasts 25 years with the possibility of extensions. Finally, a solar power plant has very low operating costs (since the "fuel" is "pre-paid"), providing healthy cash margins from fixed revenues. For all these reasons, it is extremely unlikely that the owner of a solar project or its lenders would walk away from a project. For these reasons, BLM's surface mining requirements are inapplicable to solar projects.

The 2010 Solar Policy also does not establish a transparent process for calculating the amounts of performance and reclamation bonds. Under the Policy, a developer must submit a Reclamation Cost Estimate to the BLM authorized officer, who sets the bond amount in coordination with the Solar Energy Bond Review Team. While we appreciate the good relationships developers share with BLM authorized officers, and the effort to ensure that bonds are consistent, developers have little input beyond the RCE into the bonds that are required for their projects.

b. Acceptable bonding instruments should include corporate guarantees backed by financial tests.

The 2010 Solar Policy states that "BLM will not accept a corporate guarantee as an acceptable form of bond." This is unnecessarily restrictive. BLM's requirements and

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[33] Indeed, BLM makes a showing of such financial feasibility a requirement for securing a ROW. 43 C.F.R. §§ 2804.12(a)(5), 2804.26(a)(5); *see also id.* § 2884.11(c)(9), 2884.23(a)(5) (imposing same requirement for ROW grants under Mineral Leasing Act).

goals could be satisfied by a corporate guarantee backed by a demonstration of adequate financial capacity to cover project reclamation and decommissioning costs. BLM has discretion to accept corporate guarantees as financial assurance. *See* 43 U.S.C. § 1764(i) ("*Where he deems it appropriate*, the Secretary concerned *may* require a holder of a right-of-way to furnish a bond, *or other security*, satisfactory to him to secure all or any of the obligations imposed by the terms and conditions of the right-of-way or by any rule or regulation of the Secretary concerned.") (emphasis added); *see also* 43 C.F.R. § 2805.12(g) (providing that, "*[i]f* BLM requires," a ROW grant holder must obtain "a surety bond *or other acceptable security*") (emphasis added).

Other federal and state agencies rely on a broad range of financial assurance instruments, including corporate guarantees. For example, the U.S. Environmental Protection Agency and the Nuclear Regulatory Commission accept a financial test (based on a company's year-end audited financials) and a parent company guarantee that demonstrate sufficient financial viability for addressing the decommissioning and cleanup costs associated with hazardous waste handling, storage and treatment and/or radioactive isotope handling.[34] 40 C.F.R. Parts 264, Subpart H; 40 C.F.R. Part 265, Subpart H; and 10 C.F.R. Parts 30. Similarly, the California Department of Toxic Substances Control accepts a financial test or corporate guarantee, trust fund, letter of credit, and/or insurance in lieu of a surety bond for securing the decommissioning and cleanup costs associated with hazardous waste handling, storage and treatment. *See* 22 C.C.R. §§ 66264.143(f), .145. Under the financial test option, an applicant must provide, on an annual basis, externally-audited financial statements and must maintain certain debt-to-asset/income ratios. *Id.* § 66264.143(f). Under the corporate guarantee option, a parent, grandparent, or sibling company may provide financial assurance in place of the applicant by providing essentially the same information required under the financial test. *Id.* § 66264.143(f). Given this governmental precedent for allowing other financial instruments—particularly in the hazardous waste context, where negative environmental impacts are likely more serious, and reclamation costs likely much higher, than in the solar context—BLM should provide similar flexibility here.

Moreover, the point of financial assurance is not that *BLM* must have adequate funds to cover reclamation costs at the moment when decommissioning and reclamation are required, but rather that there must be *someone* who has those funds and is legally obligated to provide them at that moment. As discussed above, the owner of a solar power plant is uniquely positioned to provide assurance through a financial test/corporate guarantee

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[34] These financial assurance mechanisms are part of the requirements set forth in the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. § 6901 et seq. and the Atomic Energy Act of 1954, as amended (68 Stat. 919) and under title II of the Energy Reorganization Act of 1974 (88 Stat. 1242).

because the owner will have a PPA and on-going obligations that disincentivize and even preclude easy abandonment of its project.[35]

We also are aware that BLM Manual MS-2805, which states that "bonds are normally required" for ROW grants, reflects BLM's typical practice. *See* BLM Manual MS-2805, Terms and Conditions for FLPMA Grants, § .12D. However, as BLM is aware, solar power plants are not like most uses that BLM approves by ROW grant. BLM typically uses ROW grants to permit smaller, less intensive facilities (including linear facilities), which have correspondingly lower reclamation costs. For those projects, a surety bond may make sense. But for more capital-intensive uses covering larger areas, like solar power plants, the value of the solar plant far exceeds any reasonable estimate of the reclamation and decommissioning costs that will be incurred at the end of the plant's economic life.

Requiring a surety bond or similar instrument can impose millions of dollars of additional annual cost, in some cases nearly doubling annual operating costs. By way of example, if BLM requires a reclamation bond of $10 million, a letter of credit or surety bond with a rate as high a 6% would impose $600,000 in additional annual operating costs. These added costs would jump to $2.1 million for a $50 million reclamation bond. These excessive costs are particularly problematic for projects that already have signed PPAs, since the costs cannot be passed on to customers. The added costs go to financial institutions as profit, not to BLM (or even the United States Treasury) as cost recovery or program support funds, and are not covered by DOE loan guarantees. The added costs impede the solar industry's effort to provide electricity at competitive prices, and provide no additional protection of public lands.

Finally, BLM imposes mandatory minimum bonding requirements in the oil and gas leasing context. *See* 43 C.F.R. subpt. 3401 ("Bonds"). While restrictive, mandatory, and minimum bonding requirements are appropriate in the oil and gas context due to the real and catastrophic potential for natural resource damages, as evidenced by the recent oil spill in the Gulf of Mexico, solar projects present significantly fewer and less severe potential harms, for the reasons outlined above. Accordingly, use of more expansive financial assurance instruments is appropriate in the utility-scale solar context.

c. Bond amounts should be reduced, including to reflect a reclamation credit.

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[35] With solar projects, most of the investment is in the ground. There are no variable fuel costs that could cause a plant to shut down in the middle of extreme volatility. A developer with a PPA has more incentive to maintain the plant and continue operations because most of its costs are already sunk. The developer will only need to cover its going-forward costs (e.g., insurance, rent, operations and maintenance) even in the worst case scenario where a lender foreclosed on a loan.

Regardless of whether BLM allows a financial test/corporate guarantee as a form of security, BLM should reduce the bond amounts it requires through operation of the 2010 Solar Policy. As discussed above, letters of credit and surety bonds impose excessive operating costs on projects. Also as discussed above, the risk of abandonment of a project is minimal, and the value of a solar project high, factors BLM should include in its bond calculations. Because BLM conducts periodic review of bond amounts, it can adjust the amount of a required bond closer to the time that decommissioning actually will occur. One option that would capture these factors and set more appropriate bond amounts would be to maintain a portion of the reclamation bond in the form of security, to be increased each year throughout the term of a project's PPA. The total bond amount would be achieved a few years prior to expiration of the agreement. If the agreement is extended, BLM and the project developer could modify the amount of required security.

In Instruction Memorandum No. 2011-003 and in Draft PEIS Appendix A, BLM elected not to follow standard energy industry practice and recognize a reclamation credit at the decommissioning stage that could help to offset the size of reclamation bond required. We disagree with a decision by BLM to rely on mining reclamation guidance to establish requirements for this phase due to resource impacts that are very different than those of a solar power plant. The concrete, glass, metal, and other infrastructure used to construct a solar facility have a recognized value in the marketplace of recycled products and BLM's standards should reflect that fact.

F. Miscellaneous issues

The following miscellaneous issues also bear comment:

- The nature and extent of BLM's cooperation with the California Energy Commission is crucial to the siting of future solar thermal projects in California. The permitting of several initial projects revealed both benefits and problems with the agencies' coordination efforts. We urge BLM to consider how those problems might be overcome for future projects.

- We urge BLM to develop policies for fostering more and better interagency coordination generally. The MOU in California among BLM, FWS, the California Energy Commission, and the California Department of Fish and Game is an example of how an MOU can improve interagency coordination. There may be other tools, such as inter-agency working groups, that can foster coordination.

- Coordination among the Departments of the Interior, Defense, Agriculture, and Transportation, and the Federal Energy Regulatory Commission, to improve the identification and resolution of conflicts in the development of solar projects and transmission could ensure greater consistency and predictability in conflict resolution. Coordination among agencies with resource management responsibilities could similarly establish uniform

mitigation requirements applicable in areas with certain characteristics and thereby ensure that developers are not required to mitigate the same impacts in more than one way.

- The Final PEIS should contain more specific guidance on coordination with military and civilian aviation and radar concerns. BLM entered into an MOU with the Defense Department concerning aviation issues associated with wind energy projects—similar MOUs with the Defense Department and the Federal Aviation Administration would more efficiently resolve similar issues associated with utility-scale solar projects.

- The Final PEIS should consider how the federal policies will coordinate with the mitigation measures that will be developed as part of the California DRECP, and those in the recently issued FWS guidance on the Bald and Golden Eagle and Migratory Bird Treaty Act, Executive Order 13186, regarding migratory birds and renewable energy projects. This recommendation also relates to the suggestion above that BLM coordinate with other agencies with resource management responsibilities to ensure that developers are not subject to multiple mitigation standards.

- Competitive bidding likely will increase the costs of developing utility-scale solar projects on public lands. Combined with high rental rates, bonds, and other costs, some developers that might have pursued projects on public lands will pursue projects on private lands or not at all.

III. Comments on the Draft PEIS (DOE)

DOE has evaluated two alternatives in the Draft PEIS: a no action alternative and an action alternative (the preferred alternative) under which DOE would "develop programmatic guidance to further integrate environmental considerations into [DOE's] analysis and selection of solar projects that [DOE] will support." PEIS at 7-1; 75 Fed. Reg. 78,980, 78,983 (Dec. 17, 2010). In other words, DOE would develop criteria it would use to decide which projects to invest in and to streamline the NEPA reviews DOE conducts for those investment decisions. DOE states that this guidance would apply to "all lands," not just those that BLM manages. Draft PEIS at ES-36 to ES-38. DOE correctly concludes that the preferred alternative would reduce adverse impacts of utility-scale solar development, increase the pace and decrease the costs of that development, and accelerate the greenhouse gas-reducing and economic benefits that are expected from that development. Draft PEIS at ES-38 to ES-39. We support DOE's preferred alternative, though we would like clarification on exactly which "lands" the criteria would apply to.

Although not part of the Draft PEIS, DOE may elect to establish guidance for "previously disturbed lands" (the definition of which is unclear) and similarly, DOE may also elect to promote guidelines for locations near populated areas. Most industrial

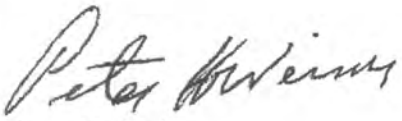
facilities prefer to locate away from populated areas. While this may sound good from a land-use perspective, locating sites near populated areas will raise concerns from the local populace and may result in additional cost impacts to the projects.

IV. Conclusion

LSA, CEERT, and SEIA sincerely appreciate BLM's efforts to promote responsible solar energy development of public lands through the preparation of the Solar PEIS. With the important additional work and modifications we have discussed above, the PEIS can serve a critically useful role in promoting and guiding the development of solar energy while protecting our natural environment.

Thank you for your time and consideration.

Sincerely,



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Attachment A: Comments on Appendix A (proposed policies and design features)

Attachment A

Draft Solar PEIS – Comments on Appendix A
(Proposed Energy Policies and Design Features)

Page	Text	Comment
General Comment	Various text throughout Appendix A.	Use of the term "avoid" should be limited to situations where absolute prohibition of an activity is necessary. "Avoid" is used extensively throughout Appendix A, but often in situations where avoidance is not necessary or the impacts can be otherwise mitigated without prohibiting the activity.
General Comment	Various text throughout Appendix A.	Design features and mitigation should be intended to mitigate a potentially significant impact, not to always eliminate or minimize the potential for impacts, regardless of their significance. Cumulatively, these requirements can become very expense and may be unnecessary. These types of requirements should be addressed at the project level, not the programmatic level.
General Comment	Various text throughout Appendix A.	The proposed design features seem to be primarily directed at limiting available land, but do not in turn provide specifics about what land will be left after all the limitations are imposed.
General Comment	Proposed addition to Appendix A.	The final Solar PEIS should address and clarify how its provisions will or will not modify the several solar-related BLM Instruction Memorandums that were released over the past few years: • IM-2007-097- Solar Energy Policy (4/4/07) • IM-2009-167- Application of Visual Resource Management to Renewable Energy (7/7/2009) • IM-2010-141- Solar Interim Rental Policy (6/10/10) • IM-2011-003- Solar Energy Development Policy (10/13/10) • Solar Plan of Development (1/31/2011) • IM-2011-059- NEPA Compliance for Utility Scale (2/08/11) • IM-2011-060- Solar and Wind Due Diligence (2/08/11) • IM-2011-061- Solar and Wind Pre-Application and Screening (2/08/11)
A-13 "Megawatt	The MW capacity fee established by this IM is: $5,256 per MW for photovoltaic (PV) solar projects; $6,570 per MW	How are these fees applied if a facility is down for routine or major maintenance? How are these fees applies if a facility is down due to loss

Page	Text	Comment
Capacity Fee" Para. 4	for concentrated PV and concentrated solar power (parabolic trough, power tower and solar dish/engine) projects without storage capacity; and $7,884 per MW for concentrated solar power projects with storage capacity of 3 hours or more.	of a major generating component?
A-17 "Term of Authorization" Para. 2	The BLM will therefore issue all solar energy right-of-way authorizations for a term not to exceed 30 years.	There should be flexibility when it comes to determining the term of a solar right-of-way because the expected life of many solar facilities is well beyond 30 years.
A-19 "Diligent Development" Para. 5	The BLM authorized officer may suspend or terminate the authorization when the holder fails to comply with the diligent development terms and conditions of the authorization (43 CFR 2807.17).	This provision would provide for exclusions if the BLM or other agencies do not accomplish their obligations in an agreed-upon time, or impede financing. It should be made clear that only affirmative failures on the part of the holder warrant suspension or termination.
A-19 "Diligent Development" Para. 8	In addition, the grant will specify that any idle, improperly functioning, or abandoned equipment or facilities that have been inoperative for any continuous period of 3 months must be repaired, placed into service, or removed from the site within 30 days from receipt of a written Notice of Failure to Ensure Diligent Development, unless the holder is provided an extension of time by the BLM authorized officer.	The time period provided for in this provision must be flexible, as equipment failure – of a main step-up transformer, for example – can result in extensive repair times.
A-20 "Performance and Reclamation Bond" Para. 3	The BLM authorized officer may increase or decrease the bond amount at any time during the term of the right-of-way authorization, consistent with the regulations (43 CFR 2805.12(g)).	Most financial institutions view unfavorably the ability of a bond amount to fluctuate, absent some type of cap.
A-20 "Performance and Reclamation Bond"	If a holder uses herbicides extensively, this component of the bond amount may be significant.	"Extensive use" is too general and subjective.

Page	Text	Comment
Para. 5		
A-26 Lines 12-14	The BLM may offer lands within solar energy zones (SEZs) for competitive ROW authorizations on its own motion or as a result of nominations by the public.	Existing applications within SEZs should be given an opportunity to complete the application process before sites are competitively bid.
A-26 Lines 16-18	If lands within SEZs are not offered competitively, solar energy development applications for such lands will receive priority processing over other solar energy development applications.	This would have an adverse impact on existing applications outside of SEZs and could delay advanced solar projects due to lack of committed BLM resources.
A-26 Lines 20-22	The BLM will discourage applicants from filing ROW applications for the purpose of speculating, controlling, or hindering development of solar energy on public lands.	How would this be implemented? Timeframes for advancement of permitting? Demonstration of financial capability? We agree that there should be mechanisms to prevent speculative applications and the PEIS should provide guidance that a field office can use to identify speculators, but existing applications should be given a reasonable opportunity to complete the ROW process.
A-27 Lines 9-13	The BLM will review applications for land use plan conformance (43 CFR 1610.5-3). To be considered further, applications must conform to the existing land use plan as amended by the Solar Programmatic Environmental Impact Statement (PEIS), including all solar ROW exclusions identified in Table 2.2-2.	Projects should be allowed to show compatibility with existing land use plans on a site-specific basis. It may be feasible to design projects to be compatible in areas that would otherwise preclude solar development. Given the complexity of BLM land management programs, it is likely that some amendment to an existing RMP will be required. To condition applications on a requirement that no RMP amendment be necessary would exclude many otherwise viable and environmentally compatible solar projects.
A-27 Lines 40-44	Entities seeking to develop a solar energy project on BLM-administered lands shall contact any potentially affected grazing permitee/lessee, in conjunction with BLM staff, to discuss potential impacts of the proposal, possible alternatives that could be addressed in scoping for the National Environmental Policy Act (NEPA), and potential mitigation and compensation strategies.	Situations where there are prior claims to the land can be problematic to solar development, since proposed mitigation measures may be too expensive to justify development. The BLM should make every effort to identify areas of potential overlap.
A-28 Lines 1-5	Entities seeking to develop a solar energy project on BLM-administered lands shall contact the owner of any federal mining claim located with the boundaries of the proposed	Same comment as above.

Page	Text	Comment
	solar energy project, in conjunction with BLM staff, to ensure that there is a potential for resolving any conflicts with federal mining claims.	
A-30 Lines 40-43	Management goals and objectives for special status species (such as the sage grouse and desert tortoise) that the BLM has identified in land use plans or goals and objectives substantiated by best available information or science shall be incorporated into the POD for proposed solar energy projects.	T&E species will be subject to Section 7 review and Biological Opinion conditions – this should not reach beyond these requirements.
A-34 Lines 24-25	The solar ROW authorization may be assigned consistent with the regulations, but all assignments are subject to approval by the BLM authorized officer.	There should be criteria for denial of assignment. It should be based on factors like the assignee's financial ability to perform and not on arbitrary factors.
A-34 Lines 46-47 A-35 Lines 1-3	….[Design features and exceptions]…. authorizations. It is anticipated that variations in the design features presented will be approved in very limited circumstances. Those design features that do not apply to a given project will need to be described as part of the project file along with an appropriate rationale. Additional mitigation measures may be identified and required during individual project development and environmental review.	This highlights the need for the design features to be very carefully crafted so that they are applicable to all projects and situations, and exclude requirements that may not apply or that could unnecessarily constrain development. Detailed requirements should be left to the project ROW approval.
A-35 Lines 12-13	Many of the proposed design features indicate the need for project-specific mitigation plans (see Table A.2-1 [which includes, among others: Glint and Glare Assessment, Mitigation, and Monitoring Plan; Heliostat Positioning Plan; and Unanticipated Burial Contingency Plan]).	Implementation of a glint and glare plan is not practical because glint and glare are dependent on mirror positions, sunlight angles, and viewer angles, all of which are changing constantly during the day. Existing solar facilities have operated for years with no reported glint and glare problems. It is not clear what a "Heliostat Positioning Plan" would require, but this type of information is proprietary and should not be required in any document that may become public.
A-36 Lines 39-42	Consolidation of access and other supporting infrastructure shall be required for single projects and for cases in which there is more than one project in close proximity to another	This should be qualified that consolidation will be required where feasible and safe, and where such consolidation is necessary to reduce environmental and land use impacts to less than significant.

Page	Text	Comment
	in order to maximize the efficient use of public land.	
A-37 Lines 35-38	Any lands that have not been recently inventoried for wilderness characteristics or any lands that have been identified in any citizen's wilderness proposal shall be inventoried for wilderness characteristics prior to any solar development action being approved within these areas.	What would be the timing for this requirement and what kind of study would it involve? This seems to have serious schedule and cost implications for the project. The requirement that "any citizen's wilderness proposal" be evaluated in a ROW application creates an opportunity for nuisance filings that would be expensive and could delay otherwise viable solar development. Citizens' wilderness proposals should be vetted by BLM for merit before burdening solar projects with inventorying these proposals.
A-38 Lines 19-24	Activities of project developers shall be coordinated with the BLM and other stakeholders to ensure that impacts on wild horses and burros and their management areas are minimized. Issues to be addressed could include the installation of fencing and access control, provision for movement corridors, delineation of open range, traffic management (e.g., vehicle speeds), and access to water sources.	Implementation of wild horse and burro movement corridors could affect plant operations and introduce the potential for injuries to horses or burros where operating personnel cross such a corridor.
A-38 Lines 44-46	The ROWs for solar facilities shall be large enough to ensure there is a sufficient fire break inside the ROW so there would be no threat to facilities from either a wildland fire approaching from outside the ROW or a fire ….	Achieving "no threat" may not be feasible. The requirement should be to mitigate risk to less than significant.
A-39 Lines 13-14	Public access through or around solar facilities shall be retained to permit continued use of public lands and non-BLM administered lands.	"Through" facilities is likely problematic from a liability and security standpoint, and access around facilities may require action by BLM with regard to designation of new roads/trails. Applicants may have limited ability to comply with "around solar facility" access.
A-39 Lines 16-17	Solar facilities shall not be placed in areas of unique or important recreation resources.	This requirement should be evaluated on a case-by-case basis. Some solar development in these areas may be feasible without adversely impacting recreational use.
A-39 Lines 34-37	The FAA shall be contacted early in the process of considering a solar energy project application to determine if there might be any potential impacts on aviation and if any mitigation might be required to protect military or civilian	The FAA process is fairly well defined and it may not allow for routinely reviewing projects early in the process. Proposed projects will file for any necessary FAA review as required by FAA regulations.

Page	Text	Comment
	aviation use.	
A-41 Lines 5-10	Land disturbance (including crossings) in natural drainage systems and groundwater recharge zones, specifically ephemeral washes and dry lake beds, are to be avoided. Any structures crossing drainages must be located and constructed so that they do not decrease channel stability or increase water volume or velocity. Developers shall obtain all applicable federal and state permits.	"Avoided" is too restrictive. Disturbance in these areas should be allowed, provided impacts are adequately mitigated to less than significant. Ephemeral washes can be very small and mitigation of impacts to these features may often be feasible. Because of the land use requirements for solar project, some drainage crossing may be necessary. This requirement should be revised to "minimize," not "avoid."
A-41 Lines 12-13	Solar facilities or components (e.g., heliostats, panels, dishes, and troughs) shall not be placed in natural drainage ways.	"Shall not be placed" is too restrictive. Placement in these areas should be allowed, provided impacts are adequately mitigated to less than significant.
A-41 Lines 26-29	New roads shall be designed to follow natural land contours and avoid or minimize hill cuts in the project area and avoid existing desert washes. Siting of new roads and walking trails (if any) is to be consistent with the designation criteria specified by the BLM in 43 CFR 8342.1.	This is too restrictive. Following contours to the extent feasible should be required (otherwise you cannot gain or lose elevation; flat roads only); avoiding washes completely is too restrictive. Again, it should be tied to impacts and subject to mitigating impacts to less than significant.
A-41 Lines 41-43	Areas with unstable slopes shall be avoided, and local factors that can cause slope instability (e.g., groundwater conditions, precipitation, earthquake activity, slope angles, and the dip angles of geologic strata) shall be identified.	Avoiding unstable slopes is too restrictive; can often mitigate unstable conditions.
A-42 Line 25	Originally excavated materials shall be used for backfill.	Excavated materials should be used to the extent they provide suitable backfill.
A-42 Lines 34-35	Drainage crossings shall be stabilized as quickly as possible, and channel erosion from runoff caused by the project shall be prevented.	Preventing erosion from runoff is not always practical; should be "mitigated."
A-43 Lines 21-22	Construction traffic shall avoid unpaved surfaces (to reduce the risk of compaction) and reduce speed to lessen fugitive dust emissions.	"Avoid" is too restrictive. Not all roads should be paved, and dust emissions can be mitigated.
A-44 Line 30	Construction on wet soils shall be avoided.	Avoiding wet soils to too restrictive. This could unnecessarily preclude winter construction activities.

Page	Text	Comment
A-44 Lines 35-36	All design features developed for the construction phase shall be applied to similar activities during the operations phase.	Not all construction phase design features may apply to operations. This should say "all applicable" design features shall be applied.
A-48 Lines 15-16	Natural drainages and a pre-project hydrograph shall be maintained for the area.	May not be feasible or necessary to maintain all minor drainages. This design feature should require that the project design should maintain downstream hydrographs and provide for protection of onsite improvements.
A-48 Lines 23-24	Siting in identified 100-year floodplains shall not be allowed within the development.	Minor construction, such as transmission poles should be allowable. This can be accomplished without significant impact to flood plain.
A-51 Lines 40-43	Construction activities shall avoid land disturbance in ephemeral washes and dry lakebeds; any unavoidable disturbance would be minimized. Stormwater facilities shall be designed to route flow around the facility and maintain pre-project hydrographs.	May not be feasible or necessary to avoid all drainages. Mitigation could accomodate development in certain drainages.
A-53 Lines 22-23	If chemical dust palliatives (suppressants) are used, they shall be selected and applied in accordance with the facilities Dust Abatement Plan.	BLM should standardize the acceptability of palliatives – allowed by some BLM offices but not others.
A-54 Lines 13-14	Water use shall be minimized by implementing conservation practices, such as treating spent wash water and storing it for reuse.	Capturing and storing wash water from a solar facility may have unacceptable cost and environmental consequences. Recovering spent wash water from a PV facility would not be feasible.
A-54 Line 40	Topsoil removed during construction shall be reused during reclamation.	This should be worded to make it clear that storage of topsoil is for reclamation following construction and not reclamation following decommissioning. It would not be practical to store topsoil for the life of the project.
A-55 Lines 11-13	To the extent practicable, projects shall be sited on previously disturbed lands in close proximity to energy load centers to avoid and minimize impacts on remote, undisturbed lands.	Sites that meet these criteria are likely very limited. Perhaps this design feature should simply say that sites that meet these criteria are desirable.
A-56 Lines 5-15	Projects shall be sited and designed to avoid direct and indirect impacts on important, sensitive, or unique habitats	Fully avoiding **any** direct and indirect impacts is usually not feasible. Feature should say that impacts will be avoided where feasible or

Page	Text	Comment
	in the project vicinity, including, but not limited to, waters of the United States, wetlands (both jurisdictional and nonjurisdictional), springs, seeps, streams (ephemeral, intermittent, and perennial), 100-year floodplains, ponds and other aquatic habitats, riparian habitat, remnant vegetation associations, rare or unique biological communities, crucial wildlife habitats, and habitats supporting special status species populations (including designated and proposed critical habitat). For cases in which impacts cannot be avoided, they shall be minimized and mitigated appropriately. Project planning shall be coordinated with the appropriate federal and state resource management agencies.	practical, and will otherwise be mitigated to less than significant, as necessary.
A-57 Lines 17-18	Fences shall be built (as practicable) to exclude livestock and wildlife from all project facilities, including all water sites.	This could conflict with biological interests, in some cases, where it may be desirable to allow wildlife access to the site (wildlife permeable fencing). Fencing to exclude wildlife should be on a case-by-case basis depending on the site and wildlife characteristics.
A-57 Lines 24-25	Developers shall avoid the placement of facilities or roads in drainages and make necessary accommodations for the disruption of runoff.	Avoiding drainages completely is too restrictive; requirement for avoidance should depend on the drainage feature and the potential impact.
A-57 Lines 33-38	Projects shall avoid surface water or groundwater withdrawals that affect sensitive habitats (e.g., aquatic, wetland, and riparian habitats) and any habitats occupied by special status species. Applicants shall demonstrate, through hydrologic modeling, that the withdrawals required for their project are not going to affect groundwater discharges that support special status species or their habitats.	Requirement should not necessarily be to avoid if it can be shown that the impact is less than significant.
A-57 Lines 42-44	The capability of local surface water or groundwater supplies to provide adequate water for the operation of proposed solar facilities shall be considered early in the project siting and design. Technologies that would result in large withdrawals that would affect water bodies that support special status species shall not be considered.	"Large withdrawal" is too general and subjective. Requirement should be site-specific and consider the amount of the withdrawal compared to the water supply available.

Page	Text	Comment
A-59 Lines 16-18	Activities shall be timed to avoid, minimize, or mitigate impacts on wildlife. For example, crucial winter ranges for elk, deer, pronghorn, and other species should be avoided, especially during their periods of use.	Should allow for possibility to mitigate rather than avoid.
A-60 Lines 10-11	Project activities shall not be located in or near occupied habitats of special status animal species. Buffer zones shall be established around these areas.	"Occupied habitat" is too restrictive. Habitat could include foraging habitat, which should not necessarily be precluded from project activities, particularly if the species is not a federal or state threatened or endangered species.
A-65 Lines 7-13	Prior to any ground-disturbing activity, seasonally appropriate walkthroughs shall be conducted by a qualified biologist or team of biologists to ensure that important or sensitive species or habitats are not present in or near project areas. Attendees at the walkthrough shall include appropriate federal agency representatives, state natural resource agencies, and construction contractors, as appropriate. Habitats or locations to be avoided (with appropriately sized buffers) shall be clearly marked.	The purpose and timing of any walkthroughs or surveys is project specific. Protocols and attendance would be determined based on resources present and the project schedule. Agency involvement in any walkthrough would have to be at the agency's discretion, not a requirement of a Design Feature.
A-66 Lines 6-12	Meteorological towers, soil borings, wells, and travel routes shall be located to avoid important, sensitive, or unique habitats, including, but not limited to, wetlands, springs, seeps, ephemeral streams, intermittent streams, 100-year floodplains, ponds and other aquatic habitats, riparian habitat, remnant vegetation associations, rare natural communities, and habitats supporting special status species populations as identified in applicable land use plans or best available information and science.	Avoiding these features is too restrictive and may not be necessary in all situations. Site characterization activities should be conducted in accordance with site conditions and local BLM office guidance.
A-67 Lines 24-26	Open trenches could also entrap smaller animals; therefore, escape ramps shall be installed along open trench segments at distances identified in the applicable land use plan or best available information and science.	The requirement for escape ramps should only apply to sensitive species.
A-67	As directed by the local BLM field office, Joshua trees (*Yucca*	To require salvage of these species, it should be certain that there is a

Page	Text	Comment
Lines 40-44	*brevifolia*), other *Yucca* species, and most cactus species shall be salvaged prior to land clearing, and they shall be transplanted, held for use to revegetate temporarily disturbed areas, or otherwise protected as prescribed by state or local BLM requirements.	demand or need for these species, otherwise there may be no place to relocate these plants.
A-68 Lines 6-7	Reestablishment of vegetation within temporarily disturbed areas shall be done immediately following the completion of construction activities, provided such revegetation will not compromise the function of the buried utilities ….	Revegetation should occur at a seasonably appropriate time to maximize success. "Immediately" following construction may not be optimal if it would occur during the dry season in a desert environment. Best timing for revegetation is likely fall or spring.
A-69 Lines 7-9	The lower 18 in. (46 cm) of the fencing shall be a solid barrier that would exclude entrance by amphibians and other small animals.	Excluding amphibians and other small animals should be determined on a project-by-project basis. It may not always be beneficial to exclude these species.
A-71 Lines 42-45	Habitat disturbance shall be minimized by using helicopters for construction to lessen the need for access roads, and by locating transmission facilities in previously disturbed areas. Existing utility corridors and other support structures shall be used to the maximum extent feasible.	Use of helicopters should not be mandatory in all cases. If there are existing access roads or if roads can be constructed without significantly affecting habitat, surface installation should be allowed.
A-74 Lines 1-2	Newer and cleaner equipment that meets more stringent emission controls shall be leased or purchased.	This needs to be more specific as to what is required. Newest and cleanest may not be necessary in all locations and may not be available. This could unnecessarily add significant costs to a project. This BACT-related requirement necessarily is addressed in project permitting.
A-74 Lines 16-22	All unpaved roads, disturbed areas (e.g., areas of scraping, excavation, backfilling, grading, and compacting), and loose materials generated during project activities shall be watered as frequently as necessary to minimize fugitive dust generation. In water-deprived locations, water spraying shall be limited to active disturbance areas only, and non-water-based dust control measures shall be implemented in areas with intermittent use or use that is not heavy, such as stockpiles or access roads.	Dust palliatives are not allowed by all BLM field offices – non water-based dust control measures shall be implemented – under current practices this may not be allowed.
A-75 Lines 1-2	Wind fences shall be installed around disturbed areas that could affect the area beyond the site boundaries (e.g., nearby	This should only be applicable to significant effects. Mitigating any effect is too costly and unnecessary.

Page	Text	Comment
	residences).	
A-75 Lines 4-8	All soil disturbance activities and travel on unpaved roads shall be suspended during periods of high winds. A critical site-specific wind speed shall be determined on the basis of soil properties determined during site characterization, and monitoring of the wind speed shall be required at the site during construction, operation, and reclamation.	Suspension of activities should be based on inability to mitigate dust, not just because of high winds. High winds during rain or wet soil conditions may not be a problem.
A-76 Lines 9-14	Because of low winds and stable atmospheric conditions occurring in the early morning from late fall to early spring, the highest 24-hour concentrations of particulate matter during construction would be attributable to activities occurring during those hours. Thus, soil disturbance activities should be eliminated or minimized under these atmospheric conditions, particularly for construction activities occurring near facility boundaries.	This is overly restrictive. If dust can be mitigated, construction activities should not be constrained.
A-76 Lines 34-35	Alternative-fuel, electric, or latest-model-year vehicles shall be used, when available, as facility service vehicles.	If the facility has few emissions, as stated above, it is not necessary to restrict vehicle type, particularly in attainment areas.
A-78 Lines 16-20	A qualified and licensed professional landscape architect with demonstrated experience with the BLM's VRM policies and procedures shall be a part of the developer's and the BLM's respective planning teams, evaluating visual resource issues as project siting options are considered. The visual issues shall be addressed throughout the planning and design process, and the final project plans shall reflect intended methods for mitigating visual impacts.	Should allow for visual design specialist without being a licensed landscape architect. This requirement could unnecessarily eliminate qualified individuals or firms.
A-80 Lines 30-33	Project developers shall exhaust opportunities to minimize visual dominance of projects by siting projects outside the viewsheds of KOPs or by siting them as far away as possible, diminishing dominance by maximizing visible separation with distance.	Having to "exhaust opportunities" is not appropriate for a programmatic document. Requirements should be tied to the visual impacts, and should not have to be exhaustive in all situations. Not all KOPs are equally sensitive to visual impacts, and requirements should be evaluated on a project-by-project basis.
A-81 Lines 1-2	Locating facilities near visually prominent landscape features (e.g., knobs and waterfalls) that naturally draw an observer's	Prohibiting placement of facilities near any knob or waterfall, regardless of size or significance is overly restrictive. Small, insignificant features

Page	Text	Comment
	attention shall be avoided.	could unnecessarily preclude development of a project in the area.
A-81 Lines 18-21	Linear developments (e.g., transmission lines, pipelines, roads) shall follow the edges of natural clearings or natural lines of transition between vegetation type, topography, etc. (where they would be less conspicuous) rather than pass through the center of clearings.	Requirements under this design feature should be to the extent practical. Depending on the site characteristics, these requirements could render a project infeasible.
A-81 Lines 26-29	In visually sensitive areas, air transport capability shall be used to mobilize equipment and materials for clearing, grading, and erecting transmission towers, thereby preserving the natural landscape conditions between tower locations and reducing the need for permanent and/or temporary access roads.	Air transport should be used to the extent necessary to reduce visual impacts to less than significant; it may not be necessary in all situations. Construction access would not necessarily require establishment of permanent roads. However, if permanent surface access is required, the use of air transport during construction would not reduce visual impacts.
A-82 Lines 10-15	Where screening topography and vegetation are absent or minimal, natural looking earthwork landforms, vegetative, or architectural screening shall be used to minimize visual impacts. The shape and height of earthwork landforms must be adapted to the surrounding landscape, and must consider the distance and viewing angle from KOPs in order to ensure that the earthworks are visually unobtrusive.	This should be addressed on a project-by-project basis. Screening, particularly with earthwork landforms, may not be practical or necessary in many situations, and the screening itself could have adverse environmental impacts.
A-83 Lines 9-10	Solar panel backs shall be color-treated to reduce visual contrast with the landscape setting.	Requirement should be project- and technology-specific, otherwise it could be adding unnecessary cost to projects.
A-84 Lines 21-22	…. shall not cause excessive reflected glare. Low-pressure sodium light sources shall be used to reduce light pollution. Full cut-off luminaires shall be used to ….	Should not specify a particular type of light (low-pressure sodium) in a programmatic document. Over the life of the document, other lights may be developed that are more appropriate.
A-85 Lines 4-5	Commercial symbols or signs and associated lighting on buildings or other structures shall be prohibited.	Would this mean no project name, company name or logo on buildings or entrance signs? That would seem unnecessarily restrictive.
A-86 Lines 25-26	The visual color contrast of graveled surfaces shall be reduced with approved color treatment practices.	It would seem that color treatment of gravel could be expensive and may need environmental review to determine the impact of the treatment on the environment. Again, this should be considered on a project-by-project basis; it may be unnecessary where gravel surfaces are not visible from sensitive visual locations.

Page	Text	Comment
A-87 Lines 31-33	The project developer shall maintain revegetated surfaces until a self-sustaining stand of vegetation is reestablished and visually adapted to the undisturbed surrounding vegetation.	It is unclear when re-vegetation is expected to occur. Re-establishing vegetation inside of an operating solar power plant can cause problems with facility operations by hampering access to equipment during operations and maintenance.
A-91 Lines 4-5	If residences or sensitive receptors are nearby, noisy equipment, such as turbines and motors, shall be placed in enclosures.	This requirement should be tied to an impact and not just if receptor is "nearby." Impacts on nearby receptors will be dependent on distance, natural noise screening, and ambient conditions.
A-92 Lines 3-8	If a noise from a transformer becomes an issue, a new transformer with reduced flux density, which generates noise levels as much as 10 to 20 dB lower than National Electrical Manufacturers Association (NEMA) standard values, could be installed. Alternatively, barrier walls, partial enclosures, or full enclosures could be adopted to shield or contain the transformer noise, depending on the degree of noise control needed.	"Becomes an issue" needs to be defined. Change out of transformers is a very costly requirement and transformer design should be determined at the permitting stage, not after the fact. If the transformers meet the design criteria, replacement should not be required.
A-95 Lines 16-17	Project developers shall conduct a records search of published and unpublished literature for past cultural resource finds in the area …	How does the BLM propose that a developer conduct a records search of "unpublished" literature? Does this require investigations of oral records with the people of the area? There should be some objective criteria.
A-103 Lines 38-40	Project developers shall survey project sites for unexploded ordnance, especially if projects are within 20 mi (32 km) of a current DoD installation or formally used defense site.	Surveys for unexploded ordinance should only be required in areas where there is evidence of, or a high probability, of occurrence.
A-108 Lines 18-20	Because of the high global warming potential of sulfur hexafluoride (SF_6), the use of alternative dielectric fluids that do not have a high global warming potential shall be required.	If an alternative to SF_6 is required, that alternative should be identified. Additionally, any alternative identified should be demonstrated to be viable through consultation with the electrical industry.
A-126 Table A.2-2 (Cont.)	*Water Resources*: … Land disturbance activities should avoid impacts to the extent possible near the regions surrounding Palen Lake, Ford Dry Lake, and McCoy Wash.	The reference to the term "regions" is extremely broad and could imply that activities that would have no impact on these features should be avoided. In addition, the reference should be to "Palen *Dry* Lake," as it is not an active waterbody.
A-126 Table A.2-2 (Cont.)	*Vegetation*: … All wetland, riparian, playa, dry wash (including dry wash microphyll woodland), sand dune and sand transport areas, and chenopod scrub habitats within	The reference to the maintenance of a "buffer area" is not defined and could be interpreted more broadly than required under applicable federal and state requirements. This reference should be qualified to state that a

Page	Text	Comment
	the SEZ should be avoided to the extent practicable, and any impacts minimized and mitigated. A buffer area should be maintained around wetland, riparian, playa, and dry wash communities to reduce the potential for impacts on these communities on or near the SEZ.	buffer area if required by ACOE/EPA Clean Water Act jurisdiction or CDFG SAA jurisdiction should be maintained.
A-127 Table A.2-2 (Cont.)	*Wildlife (All)*: To the extent practicable, avoid ephemeral drainages, Palen Lake and Ford Dry Lake, wetlands, McCoy Wash, and the Colorado River Aqueduct.	While the language is qualified with reference "[t]o the extent practicable," there should be some recognition that ephemeral drainages are ubiquitous throughout the desert environment of the SEZ and avoidance will be nearly impossible for any site of significant size. As noted previously, the reference should be to "Palen *Dry* Lake."
A-127 Table A.2-2 (Cont.)	*Special Status Species*: Disturbance of desert playa and wash habitats within the SEZ should be avoided or minimized to the extent practicable. In particular, development should be avoided in and near Ford Dry Lake, Palen Lake, and McCoy Wash within the SEZ.	Same comments as previously regarding the practical inability to avoid impacts to "desert playa and wash habitats," ambiguity regarding "in and near" referenced features, and the reference to "Palen *Dry* Lake."
A-128 Table A.2-2 (Cont.)	*Visual Resources:* Within the SEZ, in areas west of the northwest corner of Section 6 of Township 006S Range 017E, and in areas north and west of the northwest corner of Section 30 of Township 005S Range 018E, visual impacts associated with solar energy development in the SEZ should be consistent with VRM Class II management objectives, as determined from KOPs to be selected by the BLM within Joshua Tree NP and the Palen-McCoy WA.	The reference to visual resource impacts associated with Joshua Tree National Park is of concern. The principal problem with the proposed BMP is that it seeks to amend existing designations solely for solar projects when the Visual Resource Inventory (VRI) determination should be based on the resources as opposed to a proposed project. The BMP may be inconsistent with BLM's site-specific VRI findings and therefore not supported by any factual basis. In addition, the KOPs for Joshua Tree NP should be identified in the Solar PEIS, and not left to subsequent BLM "to be determined" discretion.
A-128 Table A.2-2 (Cont.)	*Cultural Resources*: Significant resources clustered in specific areas, such as those in the vicinity of Palen and Ford Dry Lakes, focused DTC/C-AMA activity areas that retain sufficient integrity, and Native American trails evident in the desert pavement should be avoided.	In light of the widespread presence of DTC/C-AMA-associated historic resources (many of which are of marginal historic value), the reference to "avoided" impacts should be qualified by reference to "to the extent practicable." Recovery may be more appropriate in some circumstances.

Thank you for your comment, Katie Umekubo.

The comment tracking number that has been assigned to your comment is SEDDsupp20179.

Comment Date: January 27, 2012 20:49:14PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20179

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Comment Submitted:

NATURAL RESOURCES DEFENSE COUNCIL

January 27, 2012

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Delivered via web form and US Postal

Re: Comments on the Supplement to the Draft Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States, 76 Fed. Reg. 66958-66960 (October 28, 2011)

Dear Director Abbey:

The Natural Resources Defense Council (NRDC) appreciates the opportunity to submit these comments in response to the Supplement to the Draft Programmatic Environmental Impact Statement (PEIS) for Solar Energy Development in Six Southwestern States, released on October 28, 2011. NRDC is a national, nonprofit organization of scientists, lawyers and environmental specialists dedicated to protecting public health and the environment. Founded in 1970, NRDC has more than 1.3 million members and online activists nationwide, served from offices in New York, Washington, D.C., Chicago, Los Angeles, San Francisco and Beijing. These comments are intended to supplement the broader sets of comments already submitted by NRDC and our partners.

For more than three decades, NRDC has been deeply engaged in efforts to protect the publicly-owned lands and resources under the jurisdiction of the Bureau of Land Management (BLM). More recently we have been intensively involved in the efforts of the BLM and the Department of the Interior to process and review proposals to construct and operate utility-scale solar energy power plants on public lands, particularly in California, and to develop a sound environmentally responsible program for managing the solar resources found on those lands. We appreciate the decision to modify the preferred solar energy development program alternative that was described in the Draft PEIS in response to public comment and especially the commitment to zone-based development, both of which are reflected in the Supplement to that draft. We firmly believe that, given the impacts of utility-scale solar development, an approach that guides such development to the most appropriate places is essential to increasing access to and use of solar energy while protecting the unique and sensitive resources of our public lands.

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While the preferred program alternative that is presented in the Supplement is much improved over the alternative in the Draft, several issues require additional attention, as detailed in these comments.

1. **Measures should be adopted to better include and inform the public in managing BLM's solar resources.**

With the release of the Supplement, NRDC greatly appreciates the time and investment that the BLM made in providing additional details regarding the composition of the revised solar energy zones (SEZs). This was evident on the day the Supplement was released, when BLM established on its website a document bank that provided opportunities for the public to download key geospatial information datasets along with a suite of additional maps depicting the revised SEZs. It cannot be overly stressed how important it is to provide stakeholders these types of data, particularly given the challenges that stakeholders encounter in relation to the process of evaluating the suitability and veracity of proposed programmatic measures as incorporated within the Supplement. Such data are instrumental in being able to fully evaluate the scope of a proposal, and can often lead to greater consensus driven outcomes given that the full range of stakeholders are properly informed.

To ensure that stakeholders are fully engaged, we believe that there are a few instrumental measures that the BLM should implement as the agency adopts a programmatic framework to site and permit solar projects:

a. *A full commitment to transparency calls for the BLM, at minimum, to develop and maintain one authoritative, publicly available list of active solar project right-of-way (ROW) applications—including notice of any change in pending, closed, and approved ROW application status.* While we commend the BLM for attempting to publish an authoritative list of active ROW applications in the Supplement,[1] the BLM still does not maintain a centrally-hosted, authoritative list of all ROW applications—active or not. The lack of such a list is a severe impediment to public engagement in the management of our public lands.

b. *The BLM should centrally provide and host up-to-date Geographic Information Systems (GIS) boundaries of all pending ROW applications.* In NRDC's attempt to evaluate the revised SEZs, conservation areas, and developable areas, we attempted to analyze how these changes comported with active ROW applications and with the reconstituted SEZs. But since the February 2011 termination of public access to BLM's Legacy Rehost 2000 System (LR2000) GIS server, it was fundamentally impossible to form empirically sound conclusions about the footprint of ROW applications given that publicly available ROW

[1] Per a joint comment letter that NRDC has signed with members of the solar industry and other stakeholders, we understand that some applications that appear to be pending have been omitted from this list. Those applications are detailed in that letter.

data was invariably obsolete.[2] The lack of definitively sanctioned and accurate GIS ROW data forces stakeholders to, at best, make educated suppositions regarding how ROW applications fit into the programmatic proposals that are put forward in the Supplement. More problematically, the lack of accurate and publicly available ROW data undermines the tenets of a comprehensive solar program, by creating potentially false conclusions about the suitability of individual ROW applications.

c. *The BLM should provide data to stakeholders that fully encapsulate the range of electrical transmission lines, existing and prospective, which intersect with the SEZs, pending projects and the developable area.* The analysis provided in the PEIS and the Supplement is not adequate in illustrating this essential component. Without transmission data, the current Supplement and draft PEIS provide a theoretical notion of how development might arise, but it is an incomplete picture that in many cases imparts developmental scenarios that are simply improbable. By demonstrating the transmission interconnections that exist, or may exist in the future, within prospective areas for solar development,[3] stakeholders will be provided one of the more fundamentally important pieces necessary to assess the suitability of prospective development while ensuring that investments are made where there is the greatest chance for success based upon the availability of transmission capacity.[4]

2. The Modified Program Alternative would provide ample room for solar to grow responsibly and thrive sustainably on our public lands.

The BLM, the Interior Department, and the Energy Department are to be commended for including a Reasonably Foreseeable Development Scenario (RFDS) in the draft Solar Energy Development PEIS, thereby providing a reasonable basis for projecting the *maximum* development that might occur for the purpose of projecting impacts at the programmatic level—while also demonstrating that the RFDS was sufficient to meet BLM's goals for the production of solar energy from public lands. Our previously submitted joint comments on the PEIS included an independent review of the RFDS analysis. That analysis demonstrated that the PEIS' RFDS was overly aggressive both in terms of amount of renewable energy needed in the study area through 2030, and in terms of the amount of solar energy the public lands might provide to meet that need.[5] At that time, we concluded that precisely because the RFDS is so aggressive, it clearly documents that the SEZ alternative—supplemented by a system for

[2] As expressed in our previous PEIS comments, NRDC encountered a series of significant inconsistencies in the agency's data regarding ROW applications. The lack of timely hosted data is perpetuated within the Supplement.
[3] *Appendix 1* includes maps that depict current and prospective transmission lines within the key SEZs and developable area.
[4] Further in *Appendix 2* are specific recommendations and conclusions regarding how additional transmission analysis should be incorporated within the PEIS.
[5] *See* Appendix I, *Response to the Draft Programmatic Environmental Impact Statement for Solar Energy Development*, submitted on May 1, 2011 by The Wilderness Society, Natural Resources Defense Council, et al.

designating additional zones as needed, as we previously advocated for—would allow more than enough acreage for solar to be sited on federal lands managed by the BLM.

BLM's release of a modified program alternative in the Supplement precisely underscores this ample availability of acres available to meet projected demand for solar energy development on our public lands. In Section 2.3.1.7, the Supplement references the RFDS' estimation of 24,000 MW of solar energy generation over the 20-year study period, along with a corresponding allocation of approximately 214,000 acres (866 km2) of BLM-administered lands in order to meet such a generation target. Such demand is met by both action alternatives as outlined in the Supplement—the land area needed to meet the estimated RFDS for solar development accounts for roughly 1% of the land area available for application under the modified program alternative, and 75% of the land area available for development within SEZs alone. Thus, there can be little doubt that the modified program alternative would meet projected demand for solar energy development within the given timeframe established by the draft PEIS.

3. The technical criteria provided for slope and insolation exclusion areas are reasonable parameters for the highest and best use of our public lands.

We support the technical criteria relating to slope and insolation that were applied by the BLM. We also are supportive of the biological and cultural criteria that were used to identify high solar value lands that may be appropriate for utility-scale development—i.e. the variance lands. Changes to the technical criteria should only be made, if at all, *in very limited circumstances* to avoid or minimize resource conflicts in order to preserve the architecture and goals of the program proposed in the Supplement.[6]

In PEIS Sections 2.2.2.2 and 6.1, BLM explained that the technical criteria—limiting lands available for utility-scale to those with slopes of less than 5% and those with a minimum solar insolation level threshold of 6.5 kWh/m2/day—were based on the characteristics of the solar energy technologies evaluated along with assumptions regarding the economic viability of such development. Such criteria are a key element of our shared goal of "screening for success," which is meant to allow time and resources to be directed to those projects that have the greatest chance of success. In addition, it should be noted that, under the program proposed in the Supplement, BLM would entertain requests to reconsider both the slope and the insolation criteria in connection with proposals for new solar energy zones (SEZs).

Adherence to the stated criteria will help maximize the efficient use of BLM-administered lands and meet the multiple use mandate of the Federal Land Policy and Management Act of 1976 (FLPMA)—by reserving for other uses public lands that are not well-suited for solar energy development. In addition, retaining those criteria for variance lands will avoid triggering the

[6] This discussion is not meant to discount our willingness to consider and support a pilot project or other modest measures that incorporate additional flexibility in the technical criteria process, provided that all requirements under the National Environmental Policy Act and the Federal Land Planning and Management Act of 1976 are strictly adhered to, appropriate restrictions are imposed, and the need for and the potential efficacy of such a proposed change can be substantiated. Two such modest exceptions were included in the joint environmental-industry letter referenced above in Footnote 1.

preparation of another supplement and/or exposing the Department to additional management liabilities that could result in crippling conflicts that could undermine the BLM's obligations in managing these resources.

a. **Wholesale alterations of the slope and insolation exclusion area designations would involve millions of acres.**

Slope and insolation exclusion area criteria are highly significant factors in assessing solar energy development on BLM lands, roughly accounting for over 60 million acres. The no action alternative totals approximately 97.6 million acres; the no action alternative excluding conservation, wildlife and ROW restrictions totals approximately 82.9 million acres; and the development alternative, which adds the slope and insolation exclusion area restrictions, totals approximately 20.3 million acres.[7] *Figure 1* provides a rough demonstration of the possible magnitude of change if slope criteria were to be altered with respect to lands being considered.

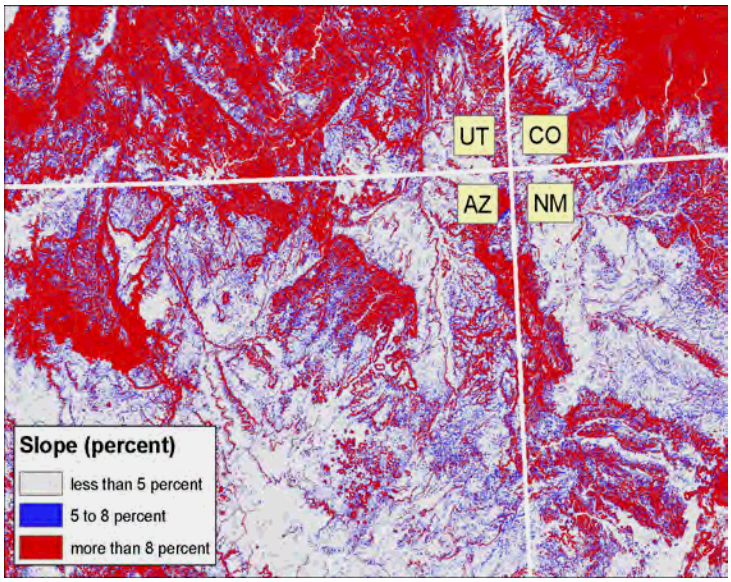


Figure 1: This map depicts slope variation near the four corners region. As can be seen, a considerable area is found to incompatible with current solar development scenarios based upon slope considerations in this region. The blue lands with slope between five and eight percent are seen to border the red areas of higher slope. The slope or gradient across the six states considered in the BLM Solar Development PEIS was calculated from the NASA Shuttle Radar Topographic Mission (STRM) Digital Elevation Model (DEM) at 3 arc second (approximately 90 meter) resolution.

Similarly, *Table 1* depicts the projected effect of considering lands with relatively small changes to slope *and* solar insolation levels. The most noticeable factor in this case is altering solar insolation levels—holding the slope constant at less than 5% while adding lands with solar

[7] For this analysis we used the GIS datasets provided by BLM at the Solar Energy Development Programmatic EIS website (http://solareis.anl.gov/index.cfm).

insolation between 6 and 6.5 kWh/m2/day suggests an addition of 12.4 million acres. Combining the totals of each of these limited changes would suggest the likely inclusion of 22.2 million additional acres within the current Development Alternative, as depicted in *Figure 2*.

Table 1: Alternative Slope and Insolation Scenarios

Insolation	< 5% Slope	5% - 8% Slope
6 - 6.5 kWh/m2/day	12.4 MILLION ACRES	3.6 MILLION ACRES
> 6.5 kWh/m2/day	CURRENT DEVELOPMENT ALTERNATIVE	6.2 MILLION ACRES

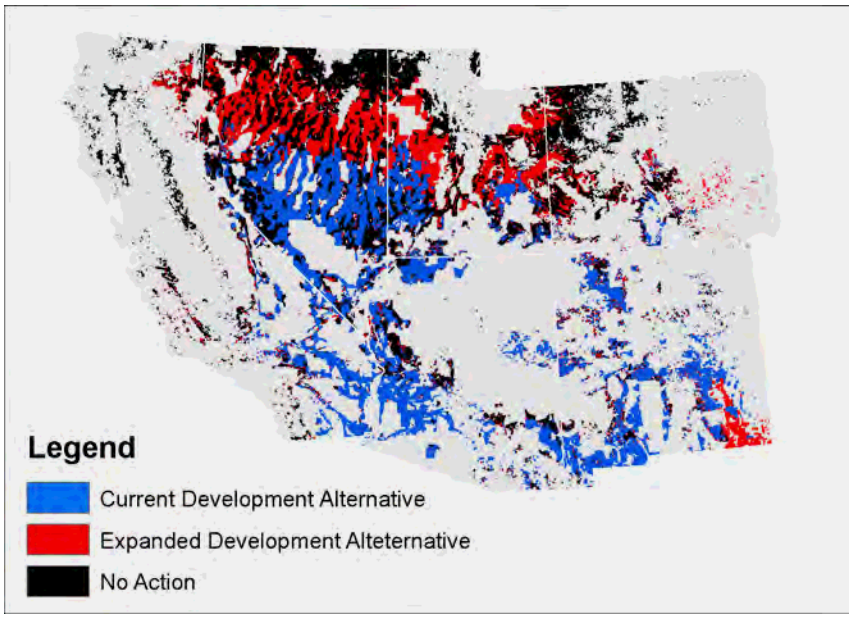


Figure 2: This map demonstrates the projected combined effect of considering lands with minimal changes to slope and solar insolation levels—including lands with up to 8% slope and between 6 and 6.5 kWh/m2/day solar insolation suggests the possible inclusion of 22.2 million acres to the current Development Alternative. Data used were provided by the BLM at the Solar Development PEIS website. The slope or gradient across the six states considered was calculated from the NASA Shuttle Radar Topographic Mission (STRM) Digital Elevation Model (DEM) at 3 arc second (approximately 90 meter) resolution.

To summarize, by increasing slope and/or insolation values, the effects of such a prescription would incite a multitude of difficulties—problems that could very likely undermine and jeopardize the effective management of solar resources. For one, there is little or no evidence that such changes are viable at a technological scale given the current conditions that define utility-scale solar development. The best solar resources, married to the best solar technologies, may not benefit from an alteration of current proposed slope and isolation paradigms. On the contrary, development within such areas could likely result in solar authorizations unable to

sustain themselves economically—which puts the resource and the goals of a BLM solar program at risk.

More critically, altering these values would place millions of acres of lands and their resources at risk, risk that has not been evaluated at all to date. For example, allowing development on slopes above 5% will implicate different wildlife and plant species, different soil types and different hydrologic regimes, none of which have been identified or addressed in the NEPA process to date. These upslope lands too are expected to be critically important for climate change adaptation.

Finally, instead of concentrating development near suitable areas and adjacent to infrastructure, the opening of these acres would perpetuate a piecemeal approach that could scatter development across landscapes on lands that are likely to be unsuitable based on ecological reasons.

4. **The approach to transmission analysis utilized in the Supplement needs to be changed.**

Transmission is an essential ingredient for a successful SEZ. To their credit, the Interior Department and BLM attempted to respond in the Supplement to requests from the solar industry and others for more information on transmission in connection with proposed zones and with future zones. Unfortunately, the approach taken is inherently flawed and, equally importantly, seems to assume that BLM should engage in the transportation planning business, rather than find a way to integrate transmission and land use planning considerations into the process of identifying, evaluating and designating new zones.

NRDC contracted with Aspen Environmental Group, a well known consulting company, to take a look at the "Methodology for Conducting Enhanced Transmission Assessment" that was developed for and tested in connection with the Supplement. Their report is attached as *Appendix 2*. It documents the flaws in the approach used in the Supplement, including the failure to consider critical factors.

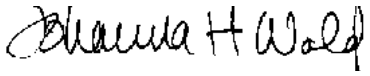
BLM is a land management agency. It cannot now develop the needed information about transmission and it should not be expected to. Rather than develop and analyze such information, the Bureau should obtain it from transportation planning entities such as the Western Electricity Coordinating Council (WECC). Indeed, BLM very appropriately submitted a study request to WECC earlier this month regarding the SEZs proposed in the Supplement.

The real challenge for the Bureau and the Department is to integrate the transmission information they receive from WECC and others with land use considerations, such as exclusion areas and other land use conflicts between potential SEZs and potential markets. We are eager to work with the BLM and potentially others to develop an approach that could be used to integrate land use and transmission considerations in such a way as to provide information that is useful not just to BLM but also to developers, utilities and other stakeholders.

Conclusion

Thank you again for your commitment to zone-based solar development and to the establishment of a comprehensive and environmentally responsible framework for managing the solar resources of the public lands. Thank you also for considering these comments. If you have any questions, please do not hesitate to contact us.

Sincerely,



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Appendix 1: Solar ROW Mapping Update

In our original comments on the Solar PEIS, dated May 2, 2011, NRDC submitted a report entitled *Bureau of Land Management Utility-Scale Solar Applications: A Geospatial Survey of Active ROW Applications*. The report was a Geographic Information Systems (GIS) assessment in which NRDC analyzed and mapped 166 right-of-way (ROW) boundaries for proposed and authorized utility-scale solar projects on Bureau of Land Management (BLM) lands in California, Nevada, New Mexico and Arizona. NRDC prepared the report to provide a single, contemporary snapshot of ROW applications likely to be considered active by solar developers and the BLM. Included here is an update to that report, providing a geospatial snapshot of active solar ROW applications within the context of revisions to the solar energy zones and variance area designations, as well as incorporating additional transmission data.

The following maps include the 79 active ROW applications identified in Appendix A of the Supplement to the Draft Solar Program EIS, as well as those applications included on BLM's Approved and 2011/2012 Priority Projects lists.

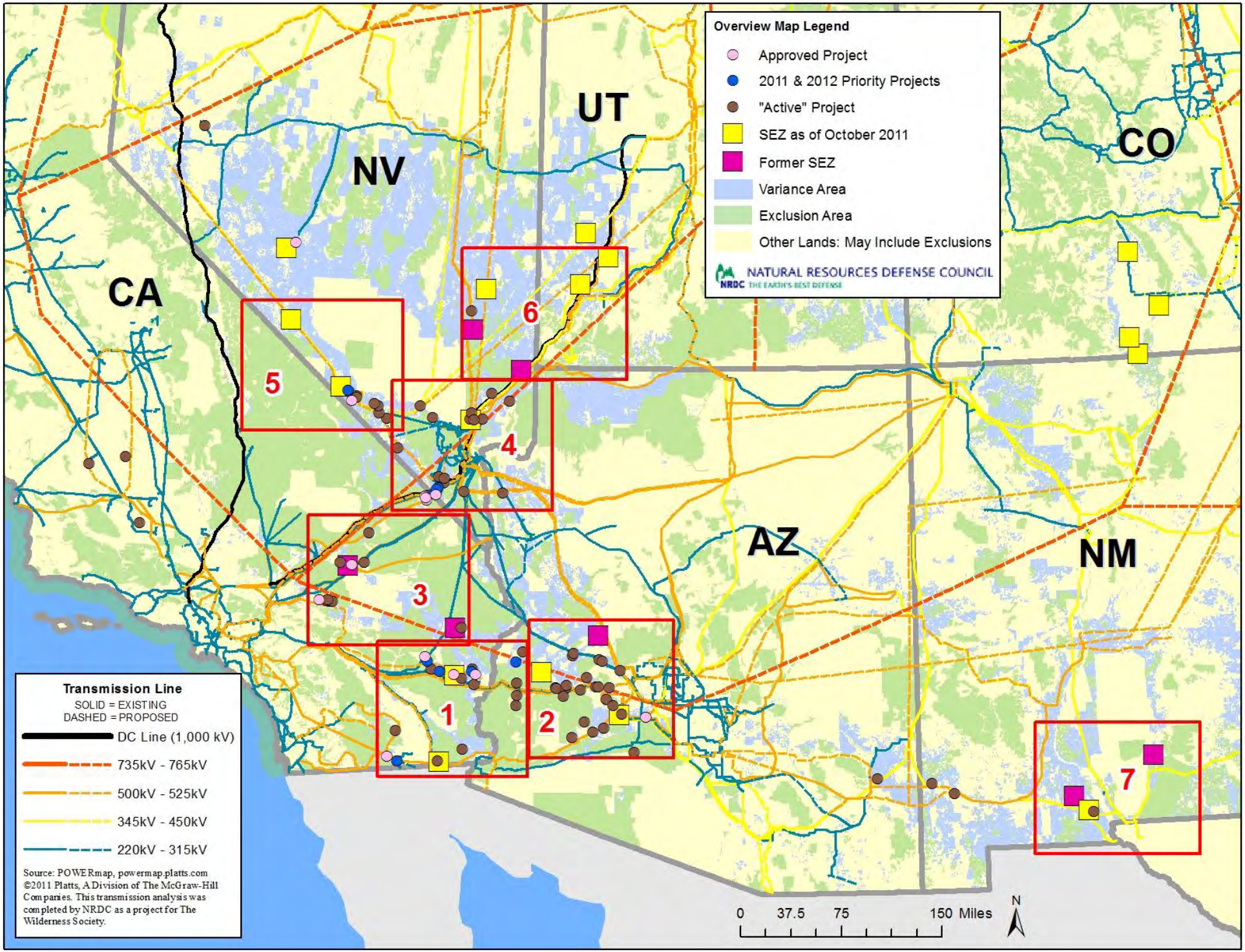
The following data layers were used to compile these maps (accessible at: http://solareis.anl.gov/maps/gis/index.cfm):

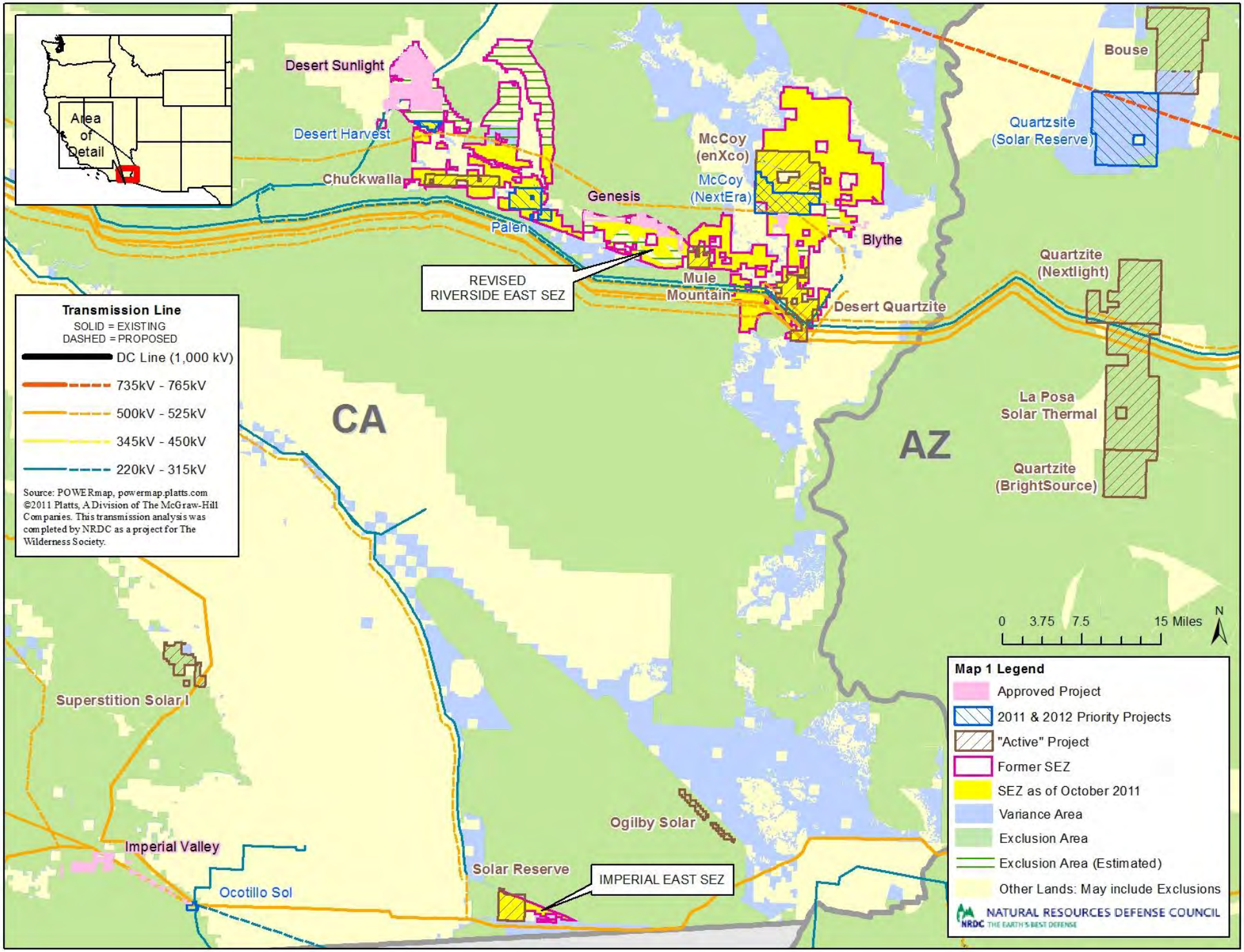
- Modified BLM Alternatives Group (SEZ PEIS Proposed, Modified SEZ Alternative and Variance Areas)
- Protected Resources Group (ACEC, National Monument, Roadless Area, Specially Designated Area, SRMA, Wilderness, Wilderness Study Area, Wild and Scenic River, NSO, ROW Avoidance, ROW Exclusion)
- Flora Critical Habitat, Fauna Critical Habitat, Fauna/CDCA (DWMA, Flat-Tailed Horned Lizard Habitat, Fringe-Toed Lizard Habitat, Mojave Ground Squirrel Habitat)

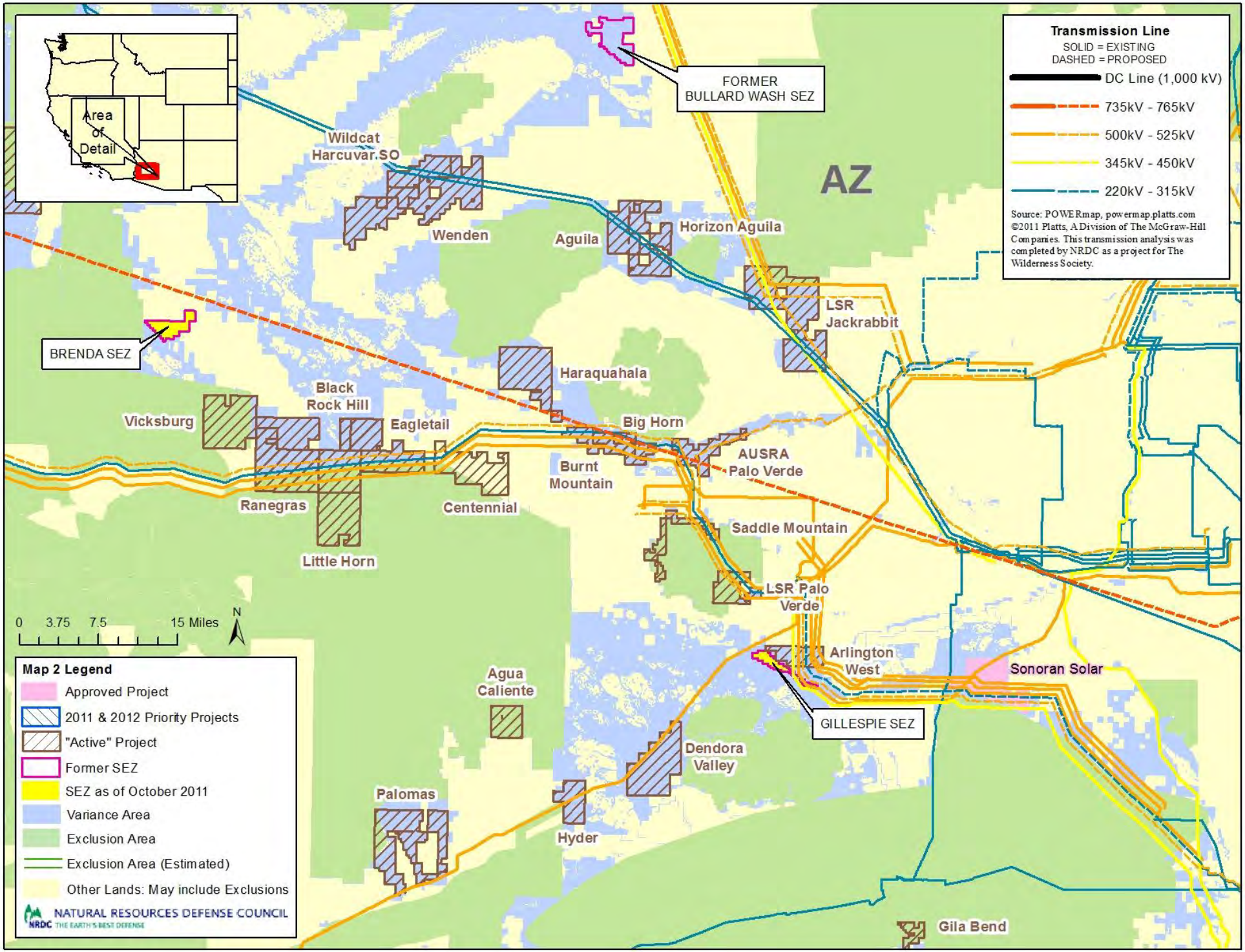
The GIS data for ROW boundaries, as well as depicted land designations were downloaded from BLM's Legacy Rehost 2000 System (LR2000) and ArcIMS service, found at www.geocommunicator.gov, prior to the data being removed from the public website in late February 2011. In addition, transmission data was incorporated from Platts POWERmap as part of a project conducted by NRDC for The Wilderness Society. Additional exclusion area data from other available sources for the proposed Mojave Trails National Monument was also incorporated.

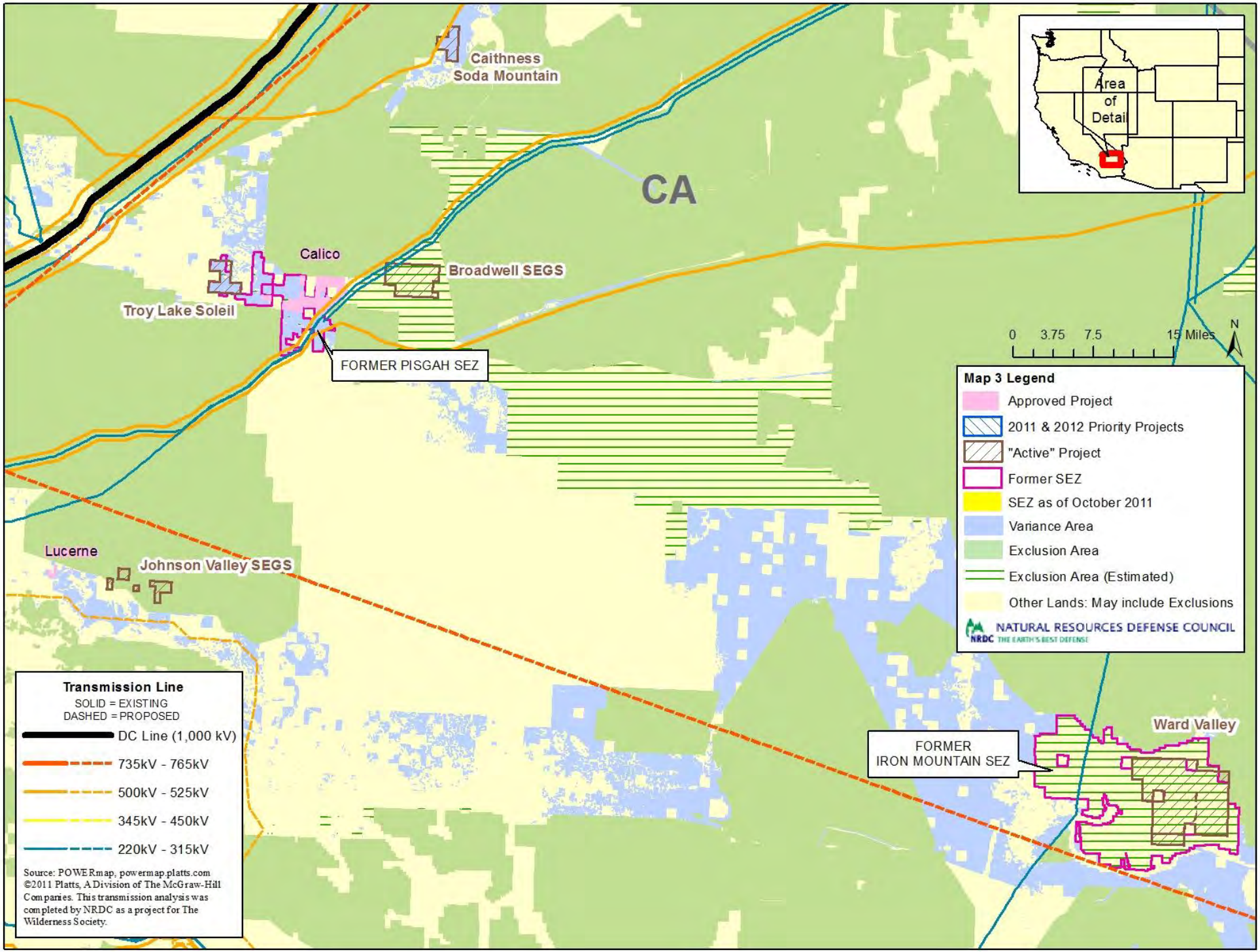
As we previously commented on the Draft PEIS, NRDC's analysis was hampered by inconsistencies with BLM's data—similar problems persist with the Supplement. Due to the fact that some of BLM's legacy data sets had these embedded inconsistencies, we caveat that the data layers used here are the most recent GIS data that was available to the public. Inconsistencies with revised solar energy zone maps and ROW boundary acreage estimates, as provided in the PEIS Supplement, are acknowledged.

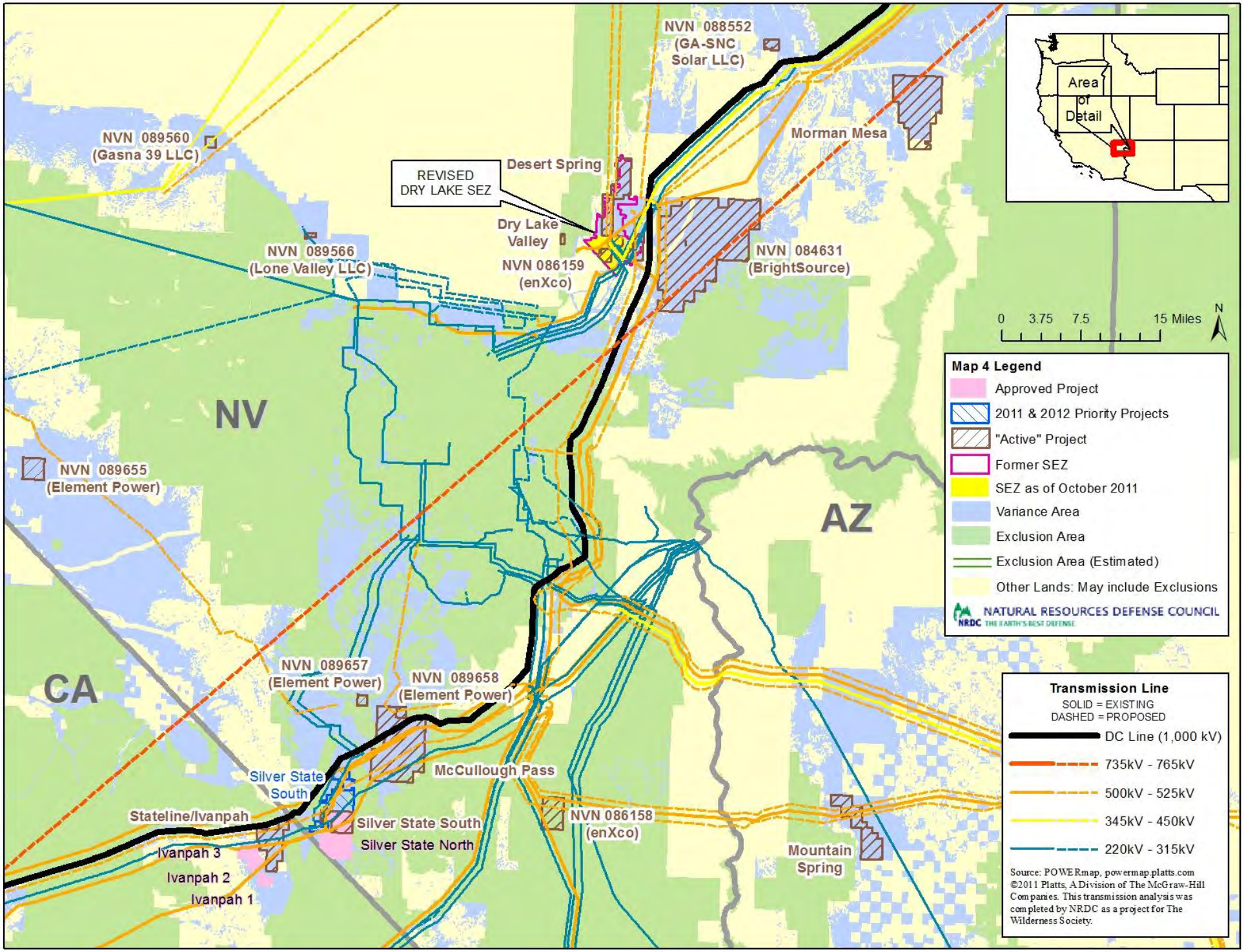
This work was performed by Rachel Fried, Bobby McEnaney, Matthew McKinzie, and Katie Umekubo of NRDC's Lands and Wildlife Program.

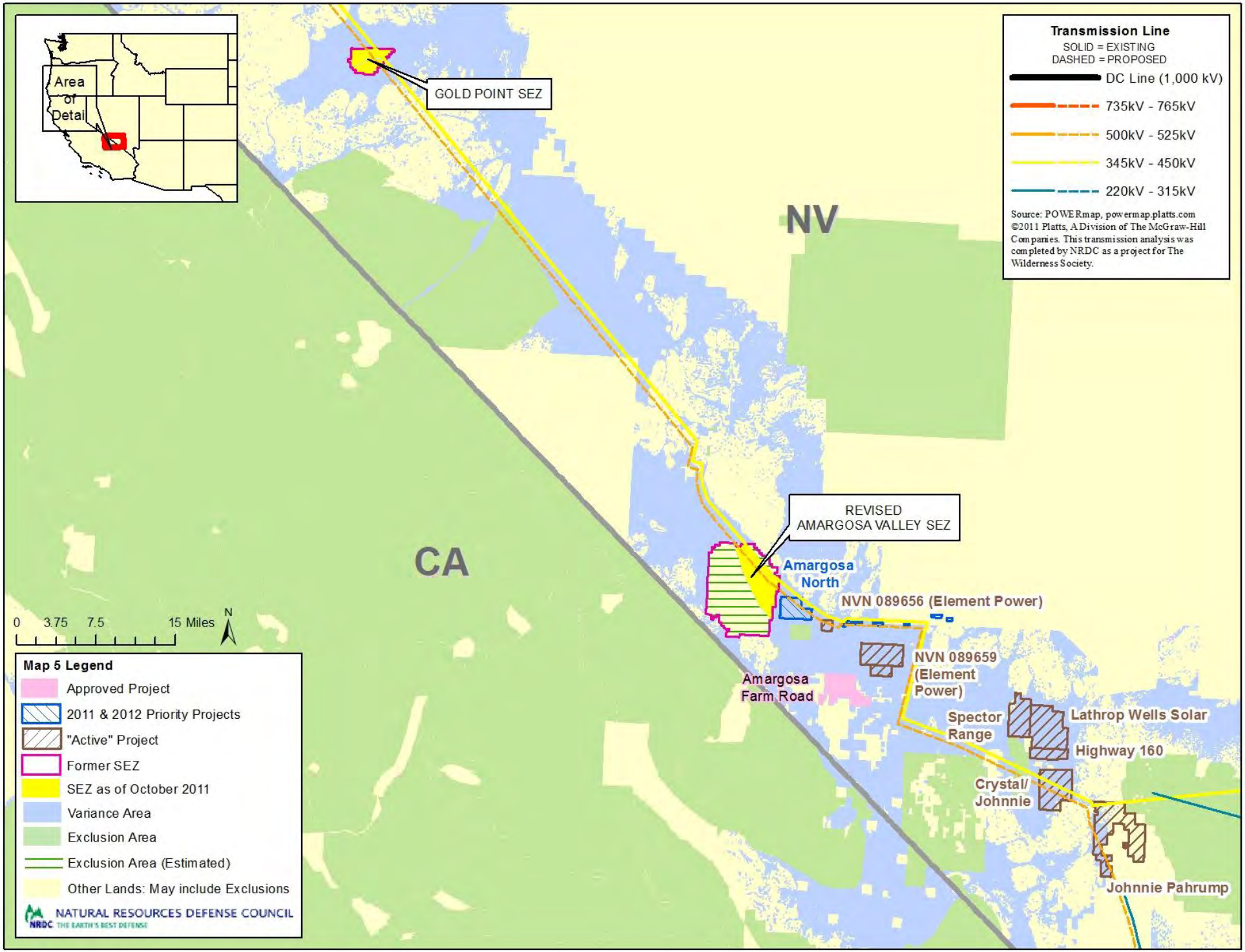

Overview Map Legend
Approved Project
2011 & 2012 Priority Projects
"Active" Project
SEZ as of October 2011
Former SEZ
Variance Area
Exclusion Area
Other Lands: May Include Exclusions
NATURAL RESOURCES DEFENSE COUNCIL
NRDC THE EARTH'S BEST DEFENSE
CA
NV
UT
CO
AZ
NM
1
2
3
4
5
6
7
Transmission Line
SOLID = EXISTING
DASHED = PROPOSED
DC Line (1,000 kV)
735kV - 765kV
500kV - 525kV
345kV - 450kV
220kV - 315kV
Source: POWERmap, powermap.platts.com
©2011 Platts, A Division of The McGraw-Hill Companies. This transmission analysis was completed by NRDC as a project for The Wilderness Society.
0 37.5 75 150 Miles
N

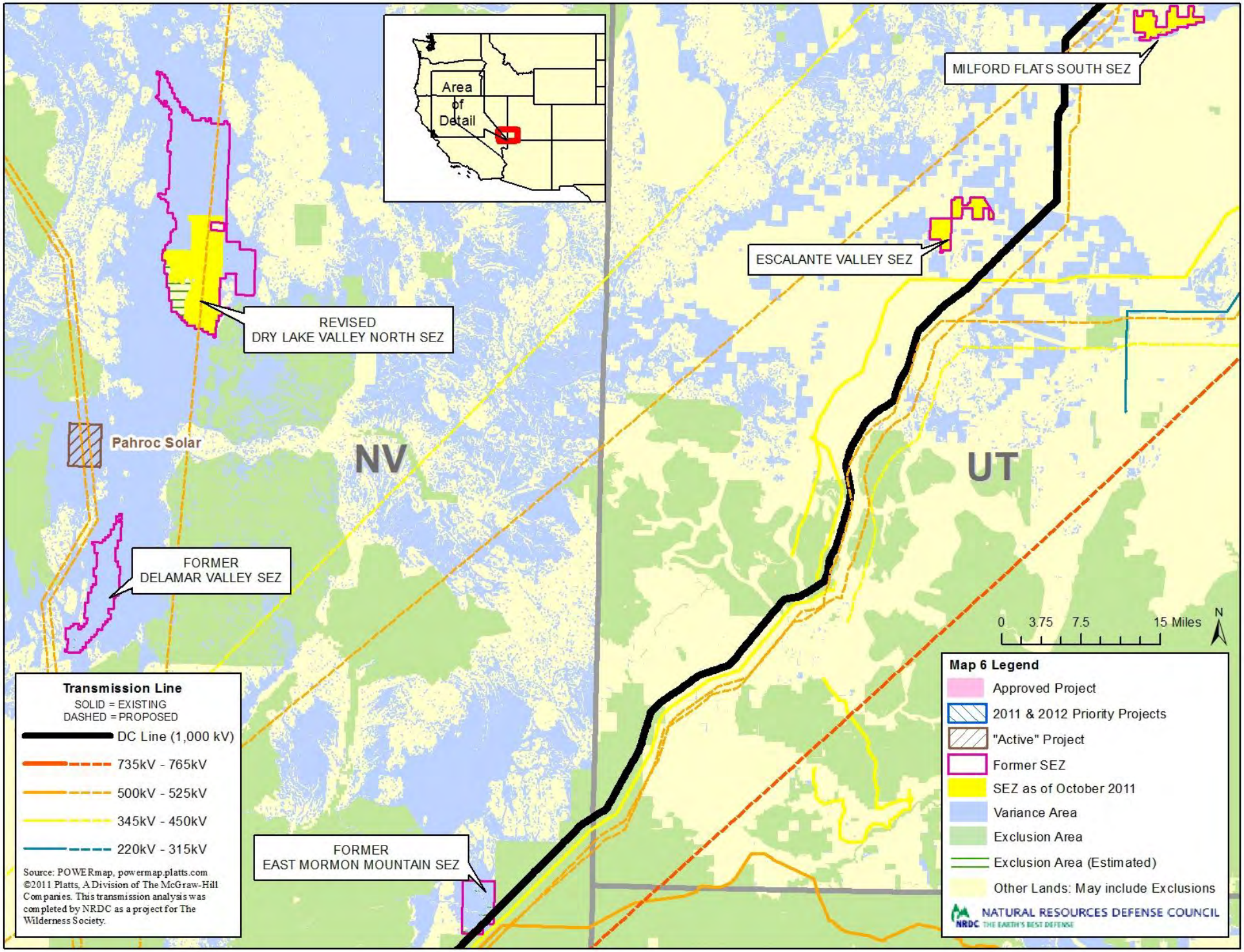

Area of Detail
Desert Sunlight
Desert Harvest
Chuckwalla
Genesis
Palen
McCoy (enXco)
McCoy (NextEra)
Blythe
Mule Mountain
REVISED RIVERSIDE EAST SEZ
Bouse
Quartzsite (Solar Reserve)
Quartzite (Nextlight)
Desert Quartzite
La Posa Solar Thermal
Quartzite (BrightSource)
CA
AZ
Transmission Line
SOLID = EXISTING
DASHED = PROPOSED
DC Line (1,000 kV)
735kV - 765kV
500kV - 525kV
345kV - 450kV
220kV - 315kV
Source: POWERmap, powermap.platts.com ©2011 Platts, A Division of The McGraw-Hill Companies. This transmission analysis was completed by NRDC as a project for The Wilderness Society.
0 3.75 7.5 15 Miles
N
Superstition Solar I
Imperial Valley
Ocotillo Sol
Ogilby Solar
Solar Reserve
IMPERIAL EAST SEZ
Map 1 Legend
Approved Project
2011 & 2012 Priority Projects
"Active" Project
Former SEZ
SEZ as of October 2011
Variance Area
Exclusion Area
Exclusion Area (Estimated)
Other Lands: May include Exclusions
NATURAL RESOURCES DEFENSE COUNCIL
NRDC THE EARTH'S BEST DEFENSE

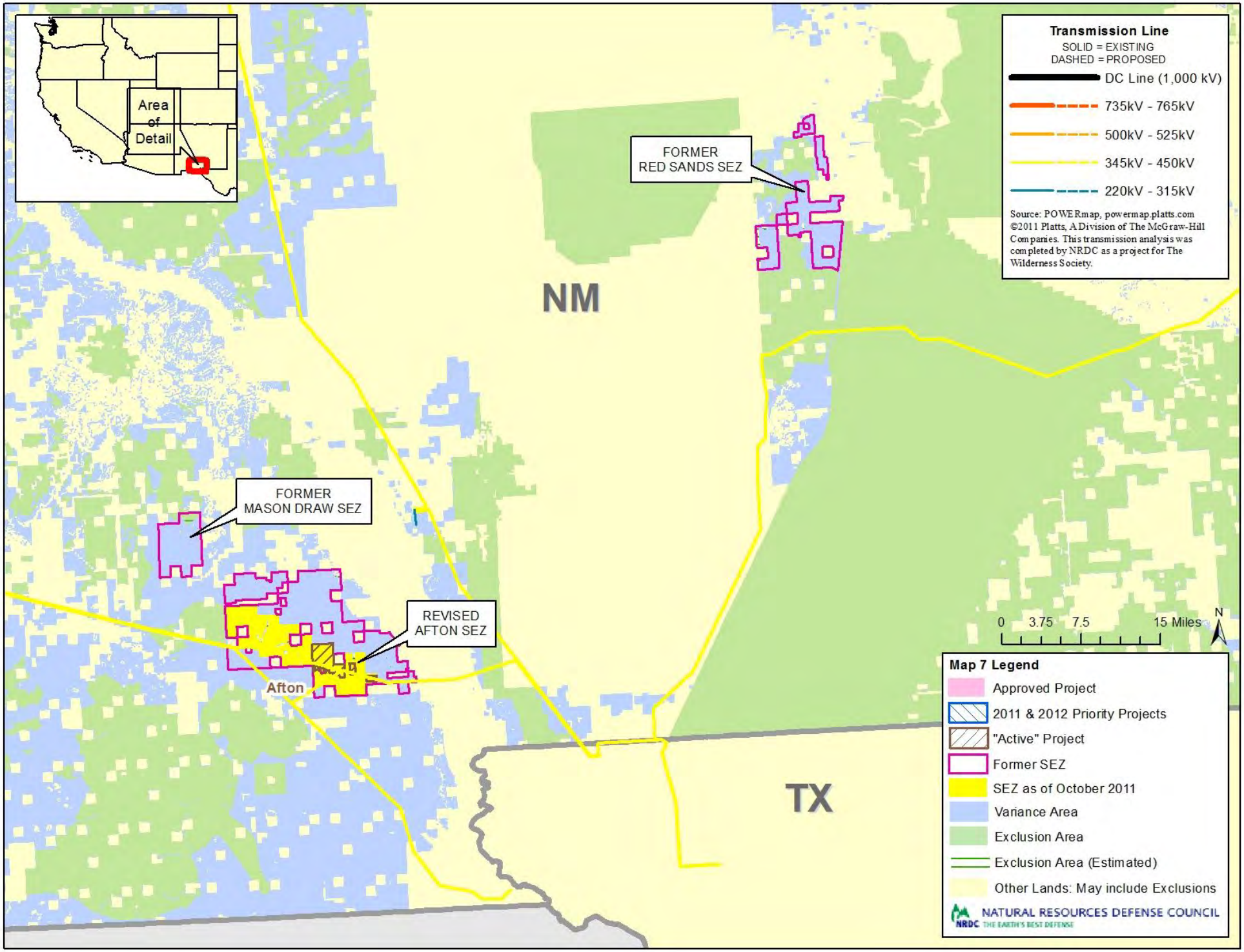

Area of Detail
FORMER BULLARD WASH SEZ
Wildcat
Harcuvar SO
Wenden
Aguila
Horizon Aguila
AZ
LSR Jackrabbit
BRENDA SEZ
Haraquahala
Black Rock Hill
Vicksburg
Eagletail
Big Horn
AUSRA Palo Verde
Burnt Mountain
Ranegras
Centennial
Saddle Mountain
Little Horn
LSR Palo Verde
Arlington West
Sonoran Solar
Agua Caliente
GILLESPIE SEZ
Dendora Valley
Palomas
Hyder
Gila Bend
0 3.75 7.5 15 Miles
N
Transmission Line
SOLID = EXISTING
DASHED = PROPOSED
DC Line (1,000 kV)
735kV - 765kV
500kV - 525kV
345kV - 450kV
220kV - 315kV
Source: POWERmap, powermap.platts.com ©2011 Platts, A Division of The McGraw-Hill Companies. This transmission analysis was completed by NRDC as a project for The Wilderness Society.
Map 2 Legend
Approved Project
2011 & 2012 Priority Projects
"Active" Project
Former SEZ
SEZ as of October 2011
Variance Area
Exclusion Area
Exclusion Area (Estimated)
Other Lands: May include Exclusions
NATURAL RESOURCES DEFENSE COUNCIL
NRDC THE EARTH'S BEST DEFENSE


Caithness
Soda Mountain
CA
Area
of
Detail
Calico
Broadwell SEGS
Troy Lake Soleil
FORMER PISGAH SEZ
0 3.75 7.5 15 Miles
N
Map 3 Legend
Approved Project
2011 & 2012 Priority Projects
"Active" Project
Former SEZ
SEZ as of October 2011
Variance Area
Exclusion Area
Exclusion Area (Estimated)
Other Lands: May include Exclusions
NATURAL RESOURCES DEFENSE COUNCIL
Lucerne
Johnson Valley SEGS
Ward Valley
FORMER
IRON MOUNTAIN SEZ
Transmission Line
SOLID = EXISTING
DASHED = PROPOSED
DC Line (1,000 kV)
735kV - 765kV
500kV - 525kV
345kV - 450kV
220kV - 315kV
Source: POWERmap, powermap.platts.com
©2011 Platts, A Division of The McGraw-Hill Companies. This transmission analysis was completed by NRDC as a project for The Wilderness Society.


NVN 088552
(GA-SNC
Solar LLC)
Morman Mesa
NVN 089560
(Gasna 39 LLC)
REVISED
DRY LAKE SEZ
Desert Spring
Dry Lake
Valley
NVN 089566
(Lone Valley LLC)
NVN 086159
(enXco)
NVN 084631
(BrightSource)
Area
of
Detail
0 3.75 7.5 15 Miles
N
NV
AZ
CA
NVN 089655
(Element Power)
NVN 089657
(Element Power)
NVN 089658
(Element Power)
McCullough Pass
Silver State
South
Stateline/Ivanpah
Silver State South
Silver State North
Ivanpah 3
Ivanpah 2
Ivanpah 1
NVN 086158
(enXco)
Mountain
Spring
Map 4 Legend
Approved Project
2011 & 2012 Priority Projects
"Active" Project
Former SEZ
SEZ as of October 2011
Variance Area
Exclusion Area
Exclusion Area (Estimated)
Other Lands: May include Exclusions
NATURAL RESOURCES DEFENSE COUNCIL
NRDC THE EARTH'S BEST DEFENSE
Transmission Line
SOLID = EXISTING
DASHED = PROPOSED
DC Line (1,000 kV)
735kV - 765kV
500kV - 525kV
345kV - 450kV
220kV - 315kV
Source: POWERmap, powermap.platts.com
©2011 Platts, A Division of The McGraw-Hill Companies. This transmission analysis was completed by NRDC as a project for The Wilderness Society.


Area of Detail
GOLD POINT SEZ
NV
CA
REVISED AMARGOSA VALLEY SEZ
Amargosa North
NVN 089656 (Element Power)
NVN 089659 (Element Power)
Amargosa Farm Road
Spector Range
Lathrop Wells Solar
Highway 160
Crystal/ Johnnie
Johnnie Pahrump
0 3.75 7.5 15 Miles
N
Transmission Line
SOLID = EXISTING
DASHED = PROPOSED
DC Line (1,000 kV)
735kV - 765kV
500kV - 525kV
345kV - 450kV
220kV - 315kV
Source: POWERmap, powermap.platts.com ©2011 Platts, A Division of The McGraw-Hill Companies. This transmission analysis was completed by NRDC as a project for The Wilderness Society.
Map 5 Legend
Approved Project
2011 & 2012 Priority Projects
"Active" Project
Former SEZ
SEZ as of October 2011
Variance Area
Exclusion Area
Exclusion Area (Estimated)
Other Lands: May include Exclusions
NATURAL RESOURCES DEFENSE COUNCIL
NRDC THE EARTH'S BEST DEFENSE


Area of Detail
MILFORD FLATS SOUTH SEZ
ESCALANTE VALLEY SEZ
REVISED
DRY LAKE VALLEY NORTH SEZ
Pahroc Solar
NV
UT
FORMER
DELAMAR VALLEY SEZ
FORMER
EAST MORMON MOUNTAIN SEZ
0 3.75 7.5 15 Miles
N
Transmission Line
SOLID = EXISTING
DASHED = PROPOSED
DC Line (1,000 kV)
735kV - 765kV
500kV - 525kV
345kV - 450kV
220kV - 315kV
Source: POWERmap, powermap.platts.com
©2011 Platts, A Division of The McGraw-Hill Companies. This transmission analysis was completed by NRDC as a project for The Wilderness Society.
Map 6 Legend
Approved Project
2011 & 2012 Priority Projects
"Active" Project
Former SEZ
SEZ as of October 2011
Variance Area
Exclusion Area
Exclusion Area (Estimated)
Other Lands: May include Exclusions
NATURAL RESOURCES DEFENSE COUNCIL
NRDC THE EARTH'S BEST DEFENSE


Area of Detail
FORMER RED SANDS SEZ
NM
FORMER MASON DRAW SEZ
REVISED AFTON SEZ
Afton
TX
Transmission Line
SOLID = EXISTING
DASHED = PROPOSED
DC Line (1,000 kV)
735kV - 765kV
500kV - 525kV
345kV - 450kV
220kV - 315kV
Source: POWERmap, powermap.platts.com ©2011 Platts, A Division of The McGraw-Hill Companies. This transmission analysis was completed by NRDC as a project for The Wilderness Society.
0 3.75 7.5 15 Miles
N
Map 7 Legend
Approved Project
2011 & 2012 Priority Projects
"Active" Project
Former SEZ
SEZ as of October 2011
Variance Area
Exclusion Area
Exclusion Area (Estimated)
Other Lands: May include Exclusions
NATURAL RESOURCES DEFENSE COUNCIL
NRDC THE EARTH'S BEST DEFENSE

Aspen Environmental Group

January 23, 2012

235 Montgomery Street, Suite 935, San Francisco, CA 94104-3002
Tel. 415-955-4775, Fax 415-955-4776, www.aspeneg.com

To: Johanna Wald, NRDC

From: Susan Lee & Emily Capello, Aspen Environmental Group

Subject: Comments on Supplemental Draft Solar PEIS, Transmission Methodology

Appendix 2: Solar Energy Zones and Transmission Lines

Attached are Aspen's comments on the transmission methodology presented in the Supplemental Draft of the Solar PEIS.

Solar Energy Zones and Transmission Lines

A. Background

This analysis evaluates the methodology proposed for conducting enhanced transmission assessments for proposed solar energy zones (SEZs), as presented in the Supplemental Draft Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States (Solar PEIS).

Draft Solar PEIS Consideration of Transmission. The Draft Solar PEIS considered transmission in the following manner:

- It identified the nearest transmission lines available for each SEZ in Sections 8.1 through 13.3. The Draft PEIS assumed at least some of the solar energy developed would be transmitted over the nearest existing transmission line; however, the Draft PEIS assumed that for full build out, all SEZs would require additional transmission.
- It assumed a transmission line segment would be constructed from the SEZ to the nearest existing transmission line for initial build out of the SEZ. It assumed the ROW width would be less than 250 feet including additional width needed for construction. It was unclear whether access roads or other required disturbance areas (e.g., pull sites, laydown areas) for the transmission lines were included in the calculation of disturbance area.
- It identified generic transmission line impacts in Chapter 5 and generic transmission line mitigation measures, and it also noted that each transmission line upgrade or new transmission line would require separate NEPA compliance documentation.
- In addition, three appendices of the Draft PEIS addressed transmission:
    - Appendix D identified the nearest transmission corridors for each SEZ (between 0 to 39 miles) and regional transmission initiatives;
    - Appendix F summarized the West-wide Energy Corridor PEIS description of activities required for construction, operation, and decommissioning of transmission lines; and
    - Appendix G included a Transmission Constraint Analysis.

B. Consideration of Transmission in the Supplemental Draft Solar PEIS

The Supplemental Draft Solar PEIS (SDSPEIS) proposed a revised methodology that would be implemented in the Final Solar PEIS to better quantify transmission impacts. The SDSPEIS does not define the impacts that would result from the transmission interconnections; these would be presented in the Final Solar PEIS. The SDPEIS does present a test case analysis for the proposed Brenda SEZ to demonstrate the types of additional information that would be included in the Final Solar PEIS.

The Supplemental Draft Solar PEIS attempts to quantify transmission capacity and need for the SEZs and establishes a methodology for analysis of the potential impacts of and need for transmission for a SEZ.

We appreciate the effort put into development of the transmission methodology in the SDPEIS, because defining logical and real transmission corridors for each SEZ is essential to the viability of a SEZ. Some aspects of the proposed methodology are valuable. However, some the methods proposed in the Supplemental Draft PEIS are extremely problematic, and would result in an illogical and inaccurate transmission build-out scenario.

Our major concerns about the methodology proposed for use (and illustrated with Brenda SEZ Analysis) are the following:

- **Definition of load area characteristics**. The population estimates at the load centers are inaccurate. There is no consideration of the fact that most load areas would be served by more than one SEZ (and other types of renewable resources). Information regarding demand for solar resources required by each load center did not include the analysis of load areas' local RPS requirements so the likelihood of transmission being required to serve a load area may be overstated. As such, the broad assumption that solar resources would provide 20 percent of the load requirement for renewable resources is unrealistic. For example, the San Diego load center (with California RPS requirements) should have a very different load profile for use of renewable resources than would Phoenix, Tucson, or Las Vegas.
- The use of non-traditional methods to determine available capacity on the existing transmission system is problematic, and results in inconsistent results in comparison to the numerous ongoing transmission planning processes. The methodology used thermal ratings for the lines rather than path ratings, which can give very different results. For example, in Nevada the On-Line or South SWIP lines have a thermal rating of 2,000 MW but in fact, only 600 MW can be carried safely.
- The methodology ignores transmission usage cost issues or delivery cost issues (rate pan-caking) and does not consider operating limitations of electric system. The analysis should not assume that the electric system can use all the rated power on the system as the availability of a particular line is dependent on the entire system and varies on a regular basis. Operating characteristics of each potential line should be considered, including the direction of generation and load.
- The methodology does not consider that the electric system may not be able to accommodate the delivery of solar resources without downstream transmission infrastructure enhancements and ancillary services.
- The analysis does not address the quality of resource and other competitive issues such as recognizing that some SEZs would be potentially competing for the same markets or market access points.
- The methodology does not consider how states will actually be most likely to meet their RPS requirements (e.g., an NREL study [1] determined that most western States will meet their RPS needs with in-state resource and sell excess prime resources out of state).
- The analysis assumes that "Planned transmission facilities" will be available for use by SEZs. This assumption does not recognize that many of the planned transmission lines illustrated on local or federal planning maps will not be built.
- The methodology does not recognize land use limitations of existing corridors (e.g., narrow areas with constraints limiting future lines). The assumption that a new transmission line can be added parallel to any existing corridor is not always correct.

C. Suggested Revisions to Transmission Methodology

Components to be Retained. While some components of the methodology proposed in the SDSPEIS would result in illogical conclusions, some of the considerations defined in the algorithm are valuable and should be retained in any methodology for identifying transmission considerations for proposed and

[1] Renewable Resources and Transmission: Needs and Gaps. Southwest Renewable Energy Transmission Conference. May 21, 2010. [online at:] http://www.azcc.gov/images/presentations/NREL/Hurlbut%20NREL.pdf

future SEZs and identifying associated impacts. The following components of the methodology proposed in the SDSPEIS should be retained:

- Identification of potential markets
- Distance to markets
- Use of existing corridors
- Existing capacity in transmission lines

While the components listed above should be retained, we recommend that the methods used to determine each of these items be revised as noted below.

Other Components to be Considered. A number of general factors should be included in the transmission analysis of any existing or proposed SEZ. The transmission requirements for a particular SEZ and the impacts associated with transmission lines will be driven by general information about the SEZ while the system in which the renewable energy is being proposed as well as by issues relating to the deliverability of the energy in the SEZ.

General Factors. The general factors are the following:

- **Size and Capacity of Potential SEZ.** Defining the size and potential capacity of each SEZ, so the appropriate transmission need is considered.
- **Applicable State and Federal Requirements.** Defining state RPS and other local or federal requirements that drive the demand for renewable energy near the SEZ.
- **Potential Markets and Distance to Market/Market Access Point.** Identifying the potential markets for the renewable energy generated in the SEZ, and then defining the substation market access points through which that energy has to pass. The likely market access point may not be within the urban areas; it would be a major substation that provides access to the urban load centers. The length of the transmission line to market access points would help determine land use impacts, because length and corridor width can be used to determine acres of impact.
- **Competing Renewable Resources.** Defining whether there are competing renewable resources that might increase or decrease the likelihood of transmission development between a SEZ and a load center.
- **Competing or Complimentary SEZs.** Defining whether there are other SEZs that may either limit the development of the SEZ under consideration based on intervening locations or having similar resource quality and positioning.

Transmission Deliverability. After the market factors have been defined, the deliverability of the energy or ease of building transmission to the SEZ should be established. Specifically in evaluating a SEZ, the following factors should be considered:

- **Transmission Requirements to Access Markets.** Identifying relative transmission costs and complexity to access the defined markets, including currently existing transmission capacity and transmission systems, if available.
- **Existing/Expandable Corridors.** Defining existing designated corridors and existing transmission lines (de facto corridors) and the relative likelihood of whether these corridors can be expanded for new lines.

- **Existing Transmission Line Capacity/Constraints.** Defining the likelihood of available existing transmission line capacity and constraints to using the available capacity.
- **Transmission Queue.** Considering the transmission queue between applicable substations.

We are aware that it's not easy to define available capacity in existing lines. Ideally, the transmission queue should reveal useful information, but determining how a queue would use available capacity is difficult without a system impact study or the required technical expertise and data. However, the DOE could conduct an analysis that demonstrates how to best use existing transmission capacity to access potential markets.

D. Conclusion

Much of the information described above can be obtained with relative ease. The Interior Department and Bureau of Land Management should work with other agencies, and specifically transmission planning entities, to obtain the types of information specifically identified by this assessment. By adopting these recommendations, the BLM will be able to maximize the agency's limited resources in directing development to those areas that will have the greatest chance for success.

Thank you for your comment, claudia sall.

The comment tracking number that has been assigned to your comment is SEDDsupp20180.

Comment Date: January 27, 2012 21:14:48PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20180

First Name: claudia
Middle Initial:
Last Name: sall
Organization:
Address: 54919 skyline ranch rd
Address 2: po box 37
Address 3:
City: pioneertown
State: CA
Zip: 92268
Country: USA
Privacy Preference: Don't withhold name or address from public record
Attachment: BLM_Solar SPEIS_Comments_Claudia_27Jan2012.DOC

Comment Submitted:

please see attached comment letter.

Claudia Sall
PO Box 37
Pioneertown, CA 92268

January 27, 2012

Draft Solar Energy Programmatic EIS
Argonne National Laboratory
9700 S. Cass Avenue – EVS/240
Argonne, IL 60439

RE: Public comments on the Supplement to the Draft Solar Energy Programmatic Environmental Impact Statement [PEIS]

Attn: Bureau of Land Management and Department of Energy

Several years ago the Secretary of the Interior announced that the Department would become a prominent player in the development of renewable energy generation on 22 million acres of public lands in the Southwest. Shortly afterward, BLM was inundated with applications for landscape scale development of renewable energy projects in remote regions of the California Desert. Citizens protested about the impact that such industrialization would have on the ecological integrity of the region and contended that such widespread development mandated an integrated NEPA investigation. BLM complied and began examining the wind and solar development, although in separate actions, not as the comprehensive examination requested by citizens.

In this effort, BLM employed a strategy of creating solar energy zones [SEZs] where solar development would be concentrated and where solar projects would avoid public lands with high conservation value. Citizens and organizations representing collective voices of citizens have actively engaged in PEIS process for the past 3 years and those 22 million acres were refined into SEZ's to a fraction of that acreage. We have reasonably expected that the refining of the SEZs was nearing completion, that is, until pink and blue variance lands began appearing on the maps of the Supplemental PEIS and the Preferred Alternative.

Upon examination of those areas, we have learned that the Bureau is putting all original 22 million acres back onto the table, still allowing solar development in those "non-SEZ" public lands on a "case by case" basis and thereby, effectively negating the NEPA work and independent science analysis that has been going on these past 3 years. These pink and blue lands have known wildlife corridors that preserve the biodiversity health of major protections blocks in the California Desert, i.e. Mojave National Preserve, Joshua Tree National Preserve, and Death Valley National Preserve. Moreover, the Bureau has lumped lands of low conservation value with lands of unknown conservation value, a practice that must stop. Adding insult to injury, they have also placed lands donated with private tax dollars to the federal government and with the intent of conservation onto the renewable-energy auction block. These actions by the BLM are serious breaches of the public trust and have raised issues that must be redressed.

I remind BLM that the Solar PEIS was initiated as a response to the American public's request for fair play and thoughtful planning for renewable energy development on their public lands. BLM's focus of the Solar PEIS thus began as an effort to discover appropriate areas of low conservation value, to determine what and where was needed for solar development, and to refine that acreage into appropriate areas agreed upon by public consensus.

Therefore, I oppose the "No-Action" Alternative and the present, altered version of the Preferred Alternative of the Solar PEIS. In addition, I request that

- the pink and blue variance areas be removed,
- that the unknown conservation lands be removed from the same category as the "low conservation" lands
- and that the unaltered Preferred Alternative worked on by citizens and stakeholders be restored.

Claudia Sall
Citizen of the California Desert

Thank you for your comment, Steven Belinda.

The comment tracking number that has been assigned to your comment is SEDDsupp20181.

Comment Date: January 27, 2012 21:23:03PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20181

First Name: Steven
Middle Initial: R
Last Name: Belinda
Organization: Theodore Roosevelt Conservation Partnership
Address: PO Box 1945
Address 2:
Address 3:
City: Red Lodge
State: MT
Zip: 59068
Country: USA
Privacy Preference: Don't withhold name or address from public record
Attachment: FINAL-Supplemental Solar PEIS comments.pdf

Comment Submitted:

SPORTSMEN FOR
Responsible Energy Development

January 27, 2012

Solar Energy Draft PEIS
Argonne National Laboratory
9700 S. Cass Avenue—EVS/240
Argonne, IL 60439

RE: Comments to the Supplement to the Draft Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States

To Whom It May Concern:

Please accept the following comments from the Sportsmen for Responsible Energy Development (SFRED) coalition, represented by the organizations signed below, on the Bureau of Land Management's (BLM) and the Department of Energy's (DOE) proposed **Supplement to the Draft Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States (SPEIS).** SFRED supports the public process underway as our nation moves forward in seeking responsible ways to develop our enormous solar potential on public lands in the West.

Sportsmen for Responsible Energy Development (SFRED) is a coalition of hunting, fishing and conservation organizations and individuals who represent the wide spectrum of America's outdoor community that support and promote responsible energy development on public lands. We are dedicated to the stewardship of America's landscape to help expand fish and wildlife habitat and increase public access to quality hunting and fishing. Our primary concern with any proposal to develop projects on federal lands is based on the needs of fish and wildlife and those who pursue fish and game for recreation and subsistence.

These comments supplement our organizations' previous comments on the Draft PEIS submitted in April 2011 and address only those new issues found in the Supplemental Draft PEIS (SPEIS). Our comments also include issues, concerns, and recommendations developed from sportsmen and conservation organizations who participated in the Sportsmen for Responsible Energy Development "Sportsmen Speak on Solar" forum held in Las Vegas on November 30, 2011. This forum had over 25 national, regional, and local conservation organizations represented and over 50 individuals participating, many of those groups have signed on to support these comments.

We would like to thank BLM for addressing some issues that we raised in our original comments and providing more detail and direction on how solar energy zones will be authorized and implemented. We also applaud BLM for identifying and committing to regional mitigation plans

and areas that will be excluded. We are also pleased to see that BLM is making a very conscientious effort to eliminate those zones that do not have production potential for industry and those that cannot immediately export the electricity produced due to lack of transmission capacity. This has made the existing Solar Energy Zones (SEZ) presented in the SPEIS more acceptable to sportsmen and will provide building blocks for considering new zones in the future.

The following are our specific comments on the details of the SPEIS and our concerns and recommendations for solar energy production on BLM lands that should be addressed in the Final PEIS.

Proposed Solar Energy Zones

The reduction in acreage and zones in the SPEIS is a positive effort to only include those areas that will have the least conflict with other uses and values, be attractive to industry for actual production of solar energy, and be able to immediately link to existing or soon-to-be-built transmission lines. As this is a programmatic document intended to set policy for solar production, the inclusion of SEZ and their subsequent authorization could be problematic. BLM has done a good job of screening the zones and efforts to further refine the SEZ should continue through to the Final PEIS. In addition, we recommend the BLM implement the recent BLM IM 2012-039 (*Identification and Uniform Mapping of Wildlife Corridors and Crucial Habitat*, or CHAT) released January 1, 2012 and effective immediately. This new directive is pursuant to a Memorandum of Understanding (MOU) with the Western Governors' Association and their ongoing coordination among Federal agencies and states to provide better information about priority habitats. As for future SEZ, the process should follow a similar process for establishment and refinement. Positive developments within the SPEIS include:

- Reduction of acreage for SEZ from 677,000 acres to 285,000 acres
- Reduction in availability outside zones from 21.6 Million acres to 20.3 Million acres
- Increased projected utilized acreage from 31.6% to 75% = efficient use of designated SEZ
- 24,000 MW of energy that is not produced by fossil fuels
- Reduction of SEZ from 24 to 17
- Optimized linkage to existing or real transmission

Recommendations

1. Continue to screen proposed SEZ and pending applications for Solar Right of Ways (ROW) to provide enough acreage for solar energy production, with the ability to link to transmission lines, in the least conflicting areas with fish and wildlife resources and values.

2. Create additional screening criteria for the inclusion of impacts to recreation of public lands that will be affected by the development of SEZ. Recreation must include hunting, fishing, and other fish and wildlife related activities.
3. Only designate areas for SEZ that will be utilized for solar energy production and strive to keep a 75% utilization rate of lands designated as SEZ. This will minimize the amount of needed acres for solar production and eliminate the problems with lands being held for future development without real intention for production (speculation).
4. Delay taking any new applications for Solar ROW until the Final PEIS and Record of Decision (ROD) is signed. By continuing to accept ROW applications, BLM is creating a workload problem and may run into problems with implementation of the ROD. This will also build trust with other public land users who have experienced inadequate decisions resulting in significant impacts from the BLM during oil and gas leasing and development.
5. Include in the Final PEIS an analysis of those areas outside of the SEZ that will experience reduced access for hunting and shooting activities because of buffers or "no shooting zones".

Handling of Existing Solar Applications

We are concerned that the current solar project applications, pending or authorized, will have inadequate guidance frameworks for siting, evaluation, monitoring, and enforcement of environmental quality control. Due to the uniqueness of solar development and the limited research on its environmental impacts, we remain concerned that the "grandfathering" of 79 applications and more than 685,000 acres under current management direction is problematic. A primary concern of ours is the effects on groundwater and surface water sources. In addition, the determination of the priority for processing these previous applications will have an impact on the availability of Agency personnel needed to work on new applications within the approved SEZ.

We support the concept of solar energy development but we must be realistic about the potential direct and indirect impacts that can occur. The use of parabolic trough and central tower systems requiring steam plants for their electricity source require relatively large volumes of water. Water sources in a desert environment remain scarce and highly valuable, especially for fish and wildlife species. With the unknown impacts concentrated solar power facilities would have on temperature variations and associated effects to the surrounding habitat, we recommend that all pending and pre-approved applications under current policies include commitments for rigorous monitoring, reporting, and research in order to minimize and correct any indicated problems.

Regional Mitigation Plans

We are very pleased to see the BLM commit to mitigation as part of the SPEIS, but we have concerns with the certainty of implementation and the funding required to conduct successful mitigation of impacts. We have observed mitigation being used by many agencies, including the BLM, as a "justification" for authorizing energy development on sensitive wildlife areas. However, these mitigation efforts often lack a rigorous, science-based mitigation program that has effectively allowed for resources to be sustained, as promised, throughout development. The worst-case example is the Pinedale Anticline natural gas project in western Wyoming where mule deer and sage-grouse declines have occurred beyond acceptable levels. Although millions of dollars have been spent on mitigation there is no evidence that the impacts have been offset, alleviated or replaced. Mitigation can be very expensive, particularly if you have a large magnitude impact on species that have specialized habitat needs or in arid environments.

Recommendations

1. Completion of Regional Mitigation Plans for each region (can be defined within the Final PEIS) and actions that will be part of any SEZ authorization ***within 6 months*** of the ROD for the Final PEIS. These plans should include population or habitat objectives and impact thresholds for each focus species or habitat and <u>also include mitigation for impacts to recreation and loss of access to public lands.</u>
2. Regional Mitigation Plans should be based on current guidelines for mitigation published by the Council for Environmental Quality (CEQ) . This includes a commitment to science-based, structured mitigation plans that are based on a "value-for-value" approach.
3. Regional Mitigation Advisory Teams should be constructed with members consisting of affected stakeholders, industry, government (Federal, State, Local), and external scientists. These advisory teams should be in place within 6 months of the Final PEIS and ROD or within 6 months of each new SEZ being authorized.
4. Mitigation trust accounts should be established for each Regional Mitigation Plan that will be used to carry out mitigation activities. Funding for each trust account should be identified in the Final PEIS.
5. For solar energy activities that are tiered to the Final PEIS, the CEQ guidelines for mitigation during NEPA planning should be followed if activities are authorized using a Finding of No Significant Impact.

Exclusion Areas

We support the BLM's approach to identifying areas of public lands where solar energy will not be a suitable use. This approach will provide certainty for industry and allow for other multiple-use resource values to be managed without fear of impacts from solar energy. Our organizations have advocated and promoted the identification of "special areas" that are too valuable to develop and the BLM's strategy is congruent with that approach. We understand

the need for some flexibility in these areas based on changing conditions but it must be used very carefully and with public consideration of the tradeoffs.

Recommendations

1. Provide more details for the exclusion areas to eliminate any confusion or misinterpretation of values or areas that will be included.
2. Include high value and high use recreation areas, including those areas that are deemed irreplaceable or "world class" for fish and wildlife habitat or hunting and fishing activities.
3. Provide for a systematic monitoring process and review for exclusion areas every 5 years with stakeholder involvement.
4. Incorporate other processes being developed to identify important fish and wildlife values such as the Western Governors Association's sponsored Critical Habitat Assessment Tool (CHAT) and state fish and wildlife agencies' developed Decision Support Systems.
5. Provide detailed status maps via a designated website for the exclusion areas and the reason they are being excluded from solar development.

Variance Process

We understand the desire to have a process in place for the development of solar energy outside of those SEZ identified in the PEIS. We also understand the BLM's need to comply with the Federal Land Policy and Management Act (FLPMA) requirements for the identification of suitable uses for lands through the Resource Management Plans (RMPs) for BLM administered lands. We have concerns, however, based upon BLM's experience with oil and gas leasing and development, that similar mistakes may be made in the authorization of public lands for solar energy development. It is for that reason that we strongly support the designation of SEZ. The variance process as set forth in the SPEIS could undermine the value of SEZ. We are concerned that many of the factors identified in the variance process need only be "considered" by BLM. We are concerned that the process does not emphasize the value of meaningful public involvement. We are also concerned that the variance process will result in never ending planning and NEPA documents, which take up needed resources and funding for other management needs.

Recommendations

1. Require advanced public and outside government stakeholder notification and meetings similar to pre-proposal meetings with BLM, as identified in the Final PEIS.
2. Clarify when the variance process will be employed and how the BLM will make the information available for public review and comment.
3. Require an annual meeting within each state that reports on any new applications for solar development that will be disclosed to the public.
4. Post all variance requests and affiliated documents on each state BLM office's website within 30 days of receipt.

5. Outline how BLM will entertain changes to the variance process and how often the variance process will be reviewed or revised. We recommend a thorough review every 5 years
6. Applicants should be required to meet some of the factors listed for consideration, including the viability of the project and that it will have little or no impact on other public lands resources, before a variance will be granted.

Adaptive Management

The BLM's historical application of adaptive management for energy development has been largely inadequate. We understand the flexibility and advantages of using a scientific adaptive management approach to land management but have concerns that given the lengthy time commitment, the large geographic area devoted to solar energy production, and the lack of technical options for producing solar energy that adaptive management may not be the best approach. We do not advocate using an adaptive management approach in the Final PEIS, but if BLM chooses to keep this approach we recommend the items below.

Recommendations

1. Review the applicability of the use of adaptive management for solar energy through the advice of experts in adaptive management – both within federal government and external sources.
2. Provide clear guidance and instruction on how adaptive management will be applied to BLM lands used for solar energy. This includes how adjustments to operations will be made, how monitoring will be conducted and funded, how annual review cycles will be held, timelines to be met and what authorizations or uses will be changed based on monitoring results.
3. Follow DOI handbook on Adaptive Management and other guiding documents available in published literature.
4. Establish an adaptive management review team, including external experts, which will have the responsibility and authority to ensure successful implementation of adaptive management.
5. Create a webpage available to the public that posts current and relevant information of the implementation of the adaptive management program.

Public/Stakeholder Involvement

Public lands belong to all Americans and are held in trust for the public by the BLM. Hunters, anglers, and other public land users are stakeholders in the management of public lands and must be engaged early and often in the policy discussions and decision making processes. BLM has done a good job to date on the SPEIS and that effort must continue as SEZ are authorized, exclusion areas are identified, mitigation plans are made, and the variance process takes shape.

Recommendations

1. Require the public to be notified on all implementation of solar energy development on public lands via the Internet, local media sources, and other avenues for notification.
2. Develop a dedicated webpage for the implementation, mitigation, and variance process for solar development on public lands.
3. Make all data used for decisions, monitoring, and variance processes available in a timely manner to the public for download and use.
4. Hold annual review meetings on the implementation and mitigation actions of solar development on public lands.
5. Develop specific stakeholder groups, including sportsmen and conservation organizations, that can work with industry at the local or regional level.

Wildlife

The management of habitat is extremely important for the future of fish and wildlife on public lands. In addition to habitat concerns, applying professional wildlife management practices and ensuring access to public lands for research and recreation is also of importance. Sensitive species and other important habitats should be identified and considered for exclusion areas. Important surface and groundwater sources must be protected. Mitigation plans must meet the needs of fish and wildlife and habitat should be linked to populations and objectives for each set in coordination with state and federal fish and wildlife agencies. Of particular concern are sage-grouse, mule deer, desert bighorn sheep.

Recommendations

1. Identify important fish and wildlife habitats and migration/movement corridors for each region in coordination with federal and state fish and wildlife agencies and by utilizing CHAT.
2. Avoid all irreplaceable habitats or other areas where solar development would have irreparable impacts to fish and wildlife.
3. Develop a process to link habitat management on public lands to state population objectives for game species like deer, elk, bighorn sheep, and upland game birds.
4. Develop a regular review process for reviewing the fish and wildlife management activities taking place in conjunction with solar energy development and how to include future science and information into land management.
5. Identify gaps in knowledge or science for the impacts on fish and wildlife from solar energy development and assist with funding research projects to address those gaps.

Sage-Grouse

1. Develop a process for inclusion of any future federal, state, or local management planning for sage-grouse on public lands including adjustments that may result from federal protection due to an Endangered Species Act listing.

2. Adjust the habitat mitigation ratio from 1:1 (which is not adequate to ensure sustainable sage-grouse populations and is not based on science) to a more appropriate value-for-value ratio based on current science or other mitigation (i.e. – Fish and Wildlife Coordination Act).
3. Ensure that sport hunting for sage-grouse is not closed or restricted due to solar energy development on public lands.

Mule Deer

1. Identify key mule deer migration and movement routes in addition to other key habitats (winter, parturition) and avoid impacts to these habitats that would impair their continued productive use by mule deer.
2. Implement the recommendations contained within the 2011 Western Association of Fish and Wildlife Agencies Mule Deer Working Group publication, "Energy Development Guidelines for Mule Deer."
3. Implement the recommendations contained within the 2011 Theodore Roosevelt Conservation Partnership report, "Mule Deer and Energy: Federal Policy and Planning in the Greater Green River Basin."
4. Develop a Memorandum of Understanding with the Mule Deer Foundation and other conservation groups on mule deer management on public lands within each region affected by solar energy development.
5. Ensure that mule deer hunting or access to mule deer hunting are not closed or restricted due to solar energy development on public lands.

Bighorn Sheep

1. Identify key bighorn sheep migration and movement routes in addition to other key habitats (winter, parturition) and avoid impacts to these habitats that would impair their continued use by bighorn sheep.
2. Adhere to any specific bighorn sheep management plans that are developed by the state fish and wildlife agencies.
3. Develop a Memorandum of Understanding with the bighorn sheep focused groups and other conservation groups on bighorn sheep management on public lands within each region affected by solar energy development.
4. Ensure that bighorn sheep hunting or access to bighorn sheep hunting are not closed or restricted due to solar energy development on public lands.
5. Use habitat enhancements or other accepted techniques to prevent bighorn sheep from utilizing habitats close to SEZ and other high visibility areas that might put them at risk.

Access

The ability to access and use public lands is imperative to multiple-use management and public trust stewardship. Solar Energy Zones will convert many acres of public lands to single use and

that will result in loss of access and use of those lands within, and possibly adjacent to, authorized SEZ.

Recommendations

1. Ensure that overall access to public lands will not be affected other than those lands that are essential for solar energy production.
2. Require all losses of access to be offset by the acquisition of private lands, access easements to private lands, or access to currently inaccessible isolated public lands.
3. No shooting zones or other restrictions to hunting and shooting need to be identified in the Final PEIS and those acres adequately mitigated.
4. Public use of roads, trails, and other rights-of-way for access to public lands should not be impacted, unless compensation is provided.
5. No region or state should have so much solar energy development that the public would be dissuaded from accessing public lands due to industrial solar energy development.

Cumulative Impacts

Solar energy development is just one of the types of use that is authorized on public lands that creates stress on fish and wildlife, watersheds, air quality and public land users. The secondary infrastructure required for transmission lines for solar power can have a much larger impact that is often not fully taken into account. In order to understand the magnitude of impacts that solar energy contributes, a comprehensive cumulative impact evaluation is needed. Often NEPA documents have weak cumulative impact analysis requirements and defer this important information to a later time and then it is never completed.

Recommendations

1. The cumulative impact analysis should include impacts from all existing and future energy development (oil/gas, coal-bed methane, wind, geothermal) and mineral extraction (coal, uranium, precious metals) as well as development on adjacent or nearby non-federal lands.
2. Cumulative impacts should be tied to the mitigation planning to effectively alleviate impacts to fish and wildlife resources, access, and recreation.
3. An “energy road map” for each state should be developed by BLM to identify what type of energy and how much of each type will be produced for the near (10 year) term.
4. Solar energy zones or variance applications should not proceed in areas where cumulative impacts would result in unacceptable impacts or irretrievable losses to fish, wildlife, and outdoor recreation.
5. No loss of hunting or fishing opportunities should result from cumulative impacts associated with solar energy development on public lands.

Compensation

The designation and authorization of solar energy development on public lands is a new paradigm in energy development for public land management. SEZ will become single use areas and could be interpreted as a change in the multiple-use management (this is also true for intensive industrial authorizations of other forms of energy development like oil, gas, and wind). In order to adequately offset the conversion of public lands to a single use, compensation mitigation must be applied as lands are designated for solar energy development.

Recommendations

1. Compensatory mitigation actions should be incorporated in Regional Mitigation Plans and include actions for losses to fish and wildlife habitats, access, and outdoor recreation.
2. Compensatory mitigation ratios should be established to identify how much compensation is required for each resource and value that is converted to single use.
3. Lands within each region should be designated as "compensatory reserves" where energy development (all types) would not take place to off-et the designation of SEZ. These reserves should be in areas where fish, wildlife, recreation, and access can be sustained for the life of the SEZ.
4. Voluntary exchanges, easements, or other actions from industry to compensate for the designation of SEZ should be included in the Final PEIS.
5. Funding mechanisms, either appropriated or voluntary, should be included in the mitigation trust fund and established in the Final PEIS.

Additional Recommendations

1. Continue to move forward with the SPEIS and complete a final document in 2012.
2. Establish a process for competitive leasing for solar energy on public lands within or outside of SEZ to generate a fair return for the use of public lands. Integrate successful local, state, or regional planning into the Final PEIS and ROD. We strongly support the process where all future solar energy development proposals are executed with a competitive lease process. Currently the BLM is seeking comments on developing regulations for competitive leasing of solar and wind energy on public lands. We applaud and support this effort. We believe such a process will provide a more enhanced development review structure and public review process for guiding location and implementation of solar and wind projects on our nation's public lands.
3. Evaluate the potential socio-economic loss of hunting, fishing, and other recreation on public lands from the development of solar energy and the designation of SEZ and mitigate it.

4. Improve the analysis of how surface and groundwater is going to be impacted and provide more details on how water allocation and use will be secured and conserved by solar energy proponents.
5. Continue to seek additional funding for mitigation and compensation for impacts to fish, wildlife, access and recreation.

State Specific Comments/Recommendations

California

1. Remove the Iron Mountain Solar Energy Zone from further consideration or defer it until it is addressed in the Desert Renewable Energy Conservation Plan (DCREP) process.
2. Subject all proposals outside of SEZ including in the variance areas to the DCREP process before moving forward with solar projects.
3. Identify potential private lands that could be used to increase the amount of acreage that SEZ could entail to protect sensitive fish and wildlife habitats.
4. Coordinate all SEZ and Variance processes with on-going and soon-to-be-completed BLM Resource Management Plan amendments.
5. Incorporate the final DCREP plans into future solar energy development on public lands through appropriate NEPA and RMP amendments.

Nevada

1. Suspend the variance process until the existing 24 applications have been put through the SEZ screening and process for potential designation.
2. Carry forward the proposal to remove the west flank of the old Dry Lake North SEZ as it was in a mule deer migration corridor and the East Mormon Mountain SEZ due to the potential for cutting off already limited access to the Mormon Range

In conclusion, we are pleased with the progress the BLM has made and its commitment to addressing concerns that the SFRED coalition and our individual organizations have raised in the Draft PEIS. Our coalition supports responsible energy development on public lands and applaud the BLM for moving solar energy development in this direction. We look forward to continuing to work with the BLM on the development of the Solar PEIS and offer our assistance in those areas where we have specific policy or management expertise such as mitigation of fish, wildlife and recreational impacts from energy development

Sincerely,

Kate Zimmerman
Senior Policy Advisor
Public Lands Program
National Wildlife Federation

Steve Belinda
Senior Policy Advisor, Energy
Theodore Roosevelt
Conservation Partnership

Brad Powell
Energy Director, Sportsmen
Conservation Project
Trout Unlimited

SPORTSMEN FOR
Responsible Energy Development

Arizona Wildlife Federation
Backcountry Hunters and Anglers
Bull Moose Sportsmen's Alliance
Colorado Wildlife Federation
Desert Bighorn Sheep Council
Fraternity of the Desert Bighorn
New Mexico Wildlife Federation
Quail & Upland Wildlife Federation
Quail & Upland Wildlife Federation – Santa Clarita Valley Chapter
The Wildlife Society
World Wildlife Fund – Freedom to Roam Initiative

Thank you for your comment, Mike Trujillo.

The comment tracking number that has been assigned to your comment is SEDDsupp20182.

Comment Date: January 27, 2012 21:24:49PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20182

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Attachment: Mike Trujilo PEIS Comment.docx

Comment Submitted:

January 27, 2012

Attn: Linda Resseguie

Argonne National Laboratory

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Argonne, IL 60439

RE: Public Comment for the Supplement to the Draft Programmatic Environmental Impact Statement (PEIS) for Solar Energy Development in Six Southwestern States

To Whom It May Concern:

Consider this as a formal statement of concerns as the Mayor of the Town of Antonito. The Town of Antonito is approximately one mile north of the proposed Antonito Southeast Solar Energy Zone (SEZ) in the state of Colorado. Thank you to the Bureau of Land Management (BLM) and Department of Energy (DOE) for the opportunity to comment on the Draft PEIS (supplement).

I have attended two meetings, in Alamosa, CO, with regards to the proposed PEIS and have the understanding that large-scale projects can provide jobs, economic growth and energy efficiency. Alamosa County is currently engaged in large-scale solar projects. The majority of the comments at the public meetings I attended were not in support of this federal driven campaign. Many concerns were recorded and heard and I appreciate it. I believe that most of my issues were addressed by others at these meeting, but will take this opportunity to address my other concerns.

Town of Antonito's Interest in a Portion of Antonito Southeast Site:

I have been the Mayor of Antonito for six years and have been a member of the Town of Antonito Board of Trustees (TOA) for eight years. During this time period, the TOA has been a supporter of renewable energy. The TOA was interested in leasing land from the BLM to develop an industrial park and partnered with the San Luis and Rio Grande Railroad (SL&RG) for this development. The project took on many different titles, which was finally termed "Intermodal Exchange". The initial application requested approximately 1/8 of the current Antonito Southeast Site, which encompassed a portion of Highway 285 and a square piece of land owned by the state; which is the west end of the Antonito Southeast SEZ. At the time it was not known to be Antonito Southeast Site. The TOA 's half was to be devoted to developing renewable energy plants, a mechanical plant, a truck stop, service stations, etc.; whereas SL&RG would use their half for storage of train cars, service centers for train cars and loading docks.

BLM determined a right of way would be more consistent with their policy. The TOA then sought to acquire the state land reserved for schools (Section 18 and Section 36) for the industrial park and wrote a letter supporting SL&RG's right of way. The use of the state land, the missing square on the Antonito Southeast Site, was never clearly defined but that it would be used in an industrial setting. There were

also discussions by SL&RG to use a portion of the land for soil storage. This led to some disagreements and caused SL&RG to purchase private land near the river to develop their own "Intermodal Exchange". This caused a legal battle between local governments that partnered with a nonprofit organization and SL&RG that partnered with Department of Energy (DOE), Energy Solutions; a low-level radioactive waste dump operator and hazardous soil removing company out of Utah and Los Alamos. The result: SL&RG is currently not using their property to transfer soil from Los Alamos.

Because there was no clear direction on how to acquire BLM land, neither SL&RG nor TOA benefited from their efforts. I believe that a portion of the Antonito Southeast Site should be left out of the study being that local efforts had a vested interest and that the use would be diverse. I believe that BLM needs to visit with elected officials and become aware of the efforts of the local municipalities and be cognizant of the needs of municipalities, and local companies as well as multi-national corporations.

The land belongs to the people and have entrusted their representatives to get the best benefits from this parcel, which could include revenue sharing, restoration and regulation.

Infrastructure:

Conejos County is one of the poorest counties in the United States and does not possess the amenities required to accommodate a project this size (greater than 20 MW). The promise of jobs and energy conservation has my full support; however it needs to reflect the need. A power plant that is constructed to sustain a community and limit the amount of coal, nuclear and natural gas is beneficial and a wonderful concept. The proposed PEIS is targeting a county that is primarily on septic systems and well water. The exceptions are those that are hooked up to the Town of Antonito Water and Sewer system (close proximity to the town). This system is out dated and will need to be upgraded in the near future. The town would not be able to provide water to a facility far from town and water rights are not easy to acquire for augmentation. The size of the project will also require a large influx of temporary employees and they may want to build homes and hook up to a water supply. These temporary workers will run into the same problem as highlighted during public meeting by Alamosa County officials.

The TOA also has issues with its drainage system. The downtown Highway 285 is currently undergoing damage as a result of five drainages that need to be replaced. The Colorado Department of Transportation (CDOT) is willing to pave the highway provided that the TOA replaces these drainages that are underneath Highway 285. The project would cost the TOA one million dollars and is an expense that is not affordable. I assume that with a project this size that our highway will not be able to withstand the increase in traffic, it is not handling the existing load now and is a hazard. Antonito experiences heavy rainfall July through August and the result is a flooded downtown area.

Mitigation:

Poor drainage is another problem the TOA faces. There are no accommodations for large quantities of people. Natural disasters would yield chaos if people were forced to stay in the local area. We are currently working on this mitigation plan but nothing is in place. Our neighbor to the north, Alamosa, would have to take the brunt of the load. The seasonal natural disasters we experience here are forest fires, blizzards and heavy rainfall in the late summer.

Schooling:

I am a math/music teacher at Antonito High School and our district has hired architects to develop a new school. Colorado Department of Education (CDE) will help us build the school through a grant program and we would need matching funds. Conejos would have to acquire a bond or increase the mill levy. They will look at our enrollment from the past two years and use this figure to project that size of school and the funding that we will need. The time of completion should be two years and we would need estimates or a study done on the potential enrollment increases from a project this size, so that we could give that data to CDE. High projections could be a burden to the tax payer in an already impoverished community. The county would need to be compensated for this increase.

Economic Development:

A portion of our community would have a direct impact with regards to employment and a segment of Antonito residents currently work for the solar developments in Alamosa County. The employment is not consistent and the complaint from many of them is that they start off with high wages and are progressively phased out.

The TOA is currently working on developing a Community Solar Garden, under the Solar Gardens Act of 2010 in the State of Colorado, on its own private property that could be a gateway to many other developments around the community. The goal is self-sustainability and establishing another enterprise. The TOA currently provides its citizens with water and waste water. The current water and waste water enterprise provides 2.5 permanent employees with temporary employment between 2-20 positions. The current solar garden project will be 500MW with the potential to become 2MW. This could mean two full time positions being funded by the savings from hosting the Community Solar Garden.

The TOA recently acquired two grants for the restoration of its historic Denver Rio Grande Depot. The grants are from CDOT and National Historic Society. The project will yield jobs; however, due to the bonding requirements and state regulations none of our local contractors will have a chance. I believe that the large scale utility would have the same conclusion.

I am in support of renewable energy; however, I believe through the use of distributed generation and building in phases will provide a more sustainable outcome for small municipalities. To support large-scale solar projects, a community would need a large-scale infrastructure to support those projects. The TOA does not have that infrastructure. I believe the TOA can benefit through shared lease agreements with multi-national corporations, revenue sharing, detailed mitigation plans and multi-national corporations developing accommodations within the town boundary to support a large volume of people. Thank you for the opportunity to comment on the Draft (PEIS).

Sincerely,

Mike Trujillo, Mayor

Town of Antonito

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Thank you for your comment, Stu Webster.

The comment tracking number that has been assigned to your comment is SEDDsupp20183.

Comment Date: January 27, 2012 22:56:19PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20183

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Comment Submitted:

IBERDROLA RENEWABLES

January 27, 2012

Solar Energy PEIS
Argonne National Laboratory
9700 South Cass Avenue-EVS/240
Argonne, IL 60439

RE: 1610 (300): Supplement to the Draft Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States

To Whom It May Concern:

Iberdrola Renewables, Inc. (IRI) is an independent power provider. We own and operate approximately 5,000 megawatts of wind and solar energy projects nationwide, and are actively developing wind and solar projects of various technologies across the U.S. We have been working in partnership with BLM for eight (8) years on wind and solar projects across four (4) western states. Currently we have two (2) assets now operating on lands administered by the Bureau of Land Management (BLM), and close to 20 additional wind and solar projects in various stages of development.

We thank you and your staff for your committed efforts in producing and releasing the Supplement to the Draft Programmatic Environmental Impact Statement for Solar Energy Development (SDPEIS), and for your dedication to seeking long-term solutions that will support the solar industry. We wish to stress that our commitment to this process is to realize the areas of common agreement with other industry stakeholders as well as non-industry stakeholders. To such an end, we start by stating our general support of the industry's combined efforts as submitted by Peter H. Weiner, Partner of Paul, Hastings, Janofsky & Walker LLP, on behalf of the Center for Energy Efficiency and Renewable Technologies (CEERT), Large-Scale Solar Association (LSA), and Solar Energy Industries Association (SEIA). Additionally, we recognize the challenges that BLM faces with meeting the needs and expectations of multiple land interests. We therefore also support the comments and suggestions made in the Joint Comment Letter (as submitted by representative signatories from the solar industry and environmental organizations, IRI included). Finally, we are aware that The Nature Conservancy (TNC) is developing a proposed path forward for development of a mitigation program. While we are not fully aware of the specific elements we do generally concur with the TNC that such a program is needed sooner than later in order to fully maximize the potential of the solar PEIS. With said support, we feel it important to expand on some of the stated positions as well as bring forward key issues which we believe need additional focus:

1. We ask that the BLM explicitly confirm that applications and project commitments underway prior to issuance of a Final PEIS be evaluated under *existing* BLM policies. To this end, the reference that pending applications in proposed exclusion areas may be denied (Page 1-11) should be removed and confirmed as not applicable. The importance of this is the level of investment made to date on BLM land that may very well enable solar energy development while avoiding, minimizing, and/or mitigating impacts to a sufficient degree. Additionally, to act contrary to this recommendation leaves a significant

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number of pending applications and project commitments with no incentive to be moved forward by BLM staff, opting to instead to wait for this PEIS process conclude, the timing of which is suspect given the public review and potential challenge of so ambitious an effort.

2. The current Solar Energy Zones (SEZs) proposed in the SDPEIS are insufficient, both in size, number and location. While we recognize that the SEZ concept is deemed by the BLM a preferred element of the SDPEIS for reaching common ground with all stakeholders, IRI is seeking assurances beyond what little is documented in the SDPEIS on how the variance process will be practically implemented and managed. Undoubtedly, due to the lack of environmental assessment of the SEZs selected by the BLM to date, there will be a need to accommodate solar energy development in non-SEZ areas in order to meet the expectations of meaningful total build out of renewable energy on federal lands. The possibility of such an outcome is clearly contemplated by BLM under Table 2.2-1 *Revised Areas for Exclusion under the BLM's Modified Solar Energy Development Program Alternative*, criteria #26 which states that areas within a SEZ may be deemed inappropriate through a NEPA process. As detailed in the industry letter, we encourage the BLM to commit to designating additional zones in the near future, and by a specific date, to respond to industry and Renewable Portfolio Standards (RPS) needs.

3. Given the lack of environmental screening, transmission constraints, and physical limitations, the current proposed SEZs do not provide clear development advantages over variance areas, naturally leading to an unsubstantiated prejudice towards proposed projects in non-SEZ areas. Rather than address the inadequacy or lack of criteria that dictates what is an appropriate area for development, the SDPEIS addresses the acknowledged inadequacy of SEZ by creating a variance process for non-SEZ consideration as well as commitment for additional or expanded SEZs in the future. Both of these options still require a substantive set of criteria to establish the appropriateness of development, which the SDEIS fails to address. To that end, we strongly encourage the BLM to include with this PEIS process an adaptive management commitment whereby the BLM evaluates the difference of applications within and without SEZs. Such an analysis, combined with stakeholder input, should lend well to making an informed decision on how to proceed with broadening the effectiveness of managing BLM land for solar energy development.

4. In the interim, the variance process, as currently proposed, must provide adequate flexibility for developers, particularly as zones are insufficient or infeasible. We support the industry position that variance applications should be permitted in areas with low or comparatively low resource conflicts. Further, we maintain that BLM's proposal to impose additional screening requirements for applications in variance areas (e.g., additional public meetings and earlier cultural resource surveys) are burdensome, superfluous and unnecessary in light of basic NEPA requirements that already apply for such projects. The NEPA process was developed to publicly and fully vet consideration of federal actions. NEPA was not contemplated to be a secondary effort of publically vetting an action already deemed appropriate by a public agency.

5. With respect to the immaterial nature of the method used to select SEZs for solar development, IRI strongly recommends that BLM not attempt to predict the logistical feasibility of solar development. In order to optimize project development, the BLM should be more lenient on the treatment of slopes and solar resource areas. Additionally, BLM should not assume that transmission infrastructure dictates energy development interests. If no capacity exists on a given transmission line then it is effectively as meaningless as if the line did not exist. We concur with the industry letter comment that the analysis conducted by BLM on line capacity falls well short of accurately portraying the conditions of those lines, a process which, for a single line, costs hundreds of thousands of dollars to conduct.

6. Exclusions based on slope or solar insolation are technology considerations that should not be mixed with environmental considerations. Areas currently defined with a direct normal insolation (DNI) below 6.5 kWh/m2/day should not be considered exclusion areas based on these characteristics alone. Dozens of economically successful solar plants in North America and Europe operate with solar resources well below this value. As the solar industry advances, technological innovations will

continue to reduce the insolation threshold necessary for a feasible project. A decision to exclude lower insolation areas will make BLM policies discrepant with best industry practices.

Additionally, areas currently defined with slopes above 5 percent should not be considered exclusion areas based on their terrain alone. As technology innovations continue, these areas may provide sensible and advantageous locations for new solar development. Current NEPA screening requirements are sufficient to identify and protect any sensitive habitat areas that may be located in steeper terrain.

7. We do not support BLM's proposal for a 10-foot height and PV-only limitations on more than 25 percent of the SEZ areas. The 10-foot limitation is an arbitrarily-defined threshold that may unnecessarily restrict the successful application of some technologies. Project heights, as with other project design features, should be evaluated and mitigated, when necessary, on a case-by-case basis.

8. Finally, as noted in the industry letter, exclusion areas, as currently proposed, are unnecessarily restrictive and vaguely or subjectively defined. As one of several examples detailed in the industry letter, IRI is adamantly opposed to item 29; "Individual additional areas identified by BLM State or field offices as requiring exclusion due to ecological or cultural concerns." This limitless uncertainty of future exclusion zones will have a detrimental effect on streamlining the application and permitting processes. Exclusion areas should not require additional interpretation from the field offices subsequent to the publication of the Final PEIS.

In addition to the shared industry positions points above, we offer the following points from our own perspective working with BLM on numerous wind and solar projects across the West and Southwest.

9. We support measures to distinguish between substantive applications and applications that will not result in actual solar energy projects (a.k.a., land squatters). We further support BLM's proposal to include this as a variance screening criterion. However, we encourage the BLM to utilize the PEIS process to clarify the intent of previously adopted Instruction Memorandums (IMs) (specifically 2011-059, 2011-060, and 2011-061). Experience has been that practical application of the IMs results in inconsistent and unreasonable expectations, particularly driving environmental review effort for the sake of administrative progress rather than in logical steps of environmental review that reflect the realities and constraints of project development. This is not a trivial issue as the margin of competitiveness with conventional fuel energy generation is narrower than ever before. BLM's mandate for supporting renewable energy necessitates that mindful development must be balanced with cost efficiencies of development and of the application process. We suggest the following steps be developed in the SDPEIS:
    a. Training seminars to bring consistency among BLM office staff on how to appropriately meet the intent of the financial and environmental due diligence IMs.
    b. Create a platform whereby BLM responds to public comments and recommendations on how to clarify the intent of the IMs, given they were drafted with no input from affected parties.

    c. Greater emphasis on IM 2011-060, *Solar and Wind Energy Applications – Due Diligence* on…as the primary filter for viable project applications . The financial stability of the applicant should be fully vetted before the National Environmental Policy Act (NEPA) process is unduly instigated for no other reason than to compel a developer to act or abandon a Right-of-Way (ROW) grant process.

10. Solar thermal technologies. As noted above in Comment 8, we are concerned about undue restrictions on solar thermal technologies (including wet cooled systems), which will play an important part in helping states meet their RPS goals. Energy customers (utilities) are seeking competitively priced products, but also delivery on demand. Concentrated solar projects offer a useful and increasingly desirable source of dispatchable power, particularly when they include added storage. While we support all solar technologies, we believe there is a strong likelihood that customers will increasingly seek dispatchable sources of power to balance out load fluctuations introduced by other

intermittent resources as well as the impending retirement of highly polluting coal plants. We therefore urge BLM to provide flexibility in allowing solar thermal projects of all technologies and cooling systems as long as they appropriately address water use impacts. We believe it is extremely important for BLM to not pick technology winners and losers, but instead follow their mandate to create a transparent, clear and robust policy environment that facilitates timely deployment of renewable energy on federal lands.

11. ROW grant timing. The SDPEIS does not provide a clear method for preserving an issued ROW grant beyond a limited period of time. If such a concession is in place with current policy, it is not well understood nor does it provide a sufficient level of assurance to compel an applicant to risk pursuing a ROW grant that lacks a clear market for and delivery of solar energy. Rather, the SDPEIS suggests a continuation of using the NEPA process as a means of forcing applicants to move forward with developing projects that may not be economically viable. This is effectively a cart before the horse scenario – evaluating the environmental benefits and impacts of a project that is not capable of responding to market demand.. This issue is reflected in point 2 above with respect to current policy, as detailed in BLM IM 2011-059.

In short, we do not advocate the SEZ-only alternative and greatly appreciate the BLM's recognition of the impracticality of the SEZ-only alternative by creating a variance option. The zone-only proposal, due to its limitations in size and location, does not respond to the short-term realities of national renewable energy policies. Finally, IRI fully supports and embraces the concept of responsible energy development. However, much like sustainable development, it remains merely a concept without definition. BLM should work towards developing a transparent, consistent, repeatable criteria by which all proposed energy development on public land is evaluated equally; benefits as well as impacts. This would establish a definition to responsible development, moving beyond a subjective concept, prone to being reduced to merely a source of endless debate.

We look forward to continuing to work with the BLM to find mutually acceptable and effective methods of promoting solar development on BLM-administered land. Feel free to contact me at your convenience at (503) 796-6951 to discuss these comments if further information or clarification would be helpful.

Best Regards,

Stu S. Webster
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Thank you for your comment, Michael Garabedian.

The comment tracking number that has been assigned to your comment is SEDDsupp20184.

Comment Date: January 28, 2012 00:33:06AM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20184

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Comment Submitted:

Committee on 245 Million Acres
BLM Solar = Unsound on the Ground
7143 Gardenvine Avenue
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January 27, 2012

Electronic Submission

Director Bob Abbey, Bureau of Land Management
Secretary Steven Chu, Department of Energy
Argonne National Laboratory
9700 S. Cass Avenue - EVS/240
Argonne, Illinois 60439

Re: The Solar Energy Development in Six Western States project Supplemental DPEIS and the need for public hearings throughout The West after release of sufficient NEPA documentation

Dear Secretary Chu and Director Abbey:

John Muir in 1905, upon arriving near Mount Graham in southeastern Arizona from Palm Springs, wrote, "I never breathed air more distinctly, palpably good, It is clean, fresh, and pure as the icy Arctic air." Donald Worster, A Passion for Nature: The Life of John Muir (2008), page 392.

Mary Austin too wrote about the pristine desert air, "For one thing, there is the divinest, cleanest air to be breathed anywhere in God's world." Mary Austin, The Land of Little Rain (1903), in, Words for the Wild: The Sierra Club Trailside Reader, Ann Ronald Ed. (1987), page 151.

Austin was writing in the Owens Valley, California, which today is measured to be among the most toxic air basins of the world. Today with desert solar, another desert environmental reversal is upon us.

In 1879 referring to the abandoned mining towns of Nevada, John Muir wrote, "They are monuments of fraud and ignorance—sins against science." But he went on in a more positive vein,

> The fever period is fortunately passing away. The prospector is no longer the raving, wandering ghoul of ten years ago, rushing in random lawlessness among the hills, hungry and footsore; but cool and skillful, well

> supplied with every necessary, and clad in his right mind. Capitalists, too, and the public in general, have become wiser, and do not take fires so readily from mining sparks; while at the same time a vast amount of real work is being done, and the ration between growth and decay is constantly becoming better.

John Muir, Nevada's Dead Towns, in, The Sierra Club Desert Reader, Gregory McNamee, Ed. (1995), page 18.

I visited Ivanpah Valley to see it and the solar plant construction destruction there eleven days ago for the second time in four weeks. Contrary to Muir's pre Hetch Hetchy dam optimism, Ivanpah and other areas in the six states are faced with a new fever, the solar energy fever that is sweeping the deserts of the southwest. This is a land rush for which BLM and DOE and their "cool and skillful" stakeholders are positioning themselves as the facilitating agents. Law and science are being put aside in a modern, unprecedented retreat from wisdom and into the ignorance Muir described.

Muir's 1879 vision that modern times were better for the desert may have found a more recent adherent whose writing defines the current and proposed actions of BLM, DOE, the six states, their apologist stakeholders who are giving cover to government desert-based welfare and public land giveaways, and the corporate solar profiteers[1] and beneficiaries of solar largesse. The definitions of Joseph Wood Krutch are apt for describing the scandal of solar public land misuse as a radical conquest of the desert by those who are incapable of listening to it.

> To those who do listen, the desert speaks with an emphasis quite different from that of the shore, the mountains, the valleys or the plains. Whereas they invite action and suggest limitless opportunity, exhaustless resources, the limitations and mood of the desert are something different. For one thing, the desert is conservative, not radical. It is more likely to provoke awe than to invite conquest. It does not, like the plains say, "Only turn the sod and unaccountable riches will spring up." The heroism which it encourages is the heroism of endurance, not that of conquest.

Jopseph Wood Krutch, The Voice of the Desert (1955), in, Words for the Wild: The Sierra Club Trailside Reader, Ann Ronald Ed. (1987), page 187.

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[1] "A Gold Rush of Subsidies in Clean Energy Search," NY Times, 11/11/11, http://www.nytimes.com/2011/11/12/business/energy-environment/a-cornucopia-of-help-for-renewable-energy.html?_r=1&ref=business

And, what is at stake here? It is the delicate and still significantly unknown biology of the desert and its roles in the ecosystem as the largest remaining mainly undisturbed American landscape outside of Alaska.

These lands are under immediate threat of long-term ecological destruction by massive scale centralized solar development. These deserts – The basin and range of The Great Basin from which I like to separate out a widened and geologically distinct Colorado Plateau, The Sonoran, The Mojave, and the Chihuahuan -- are the Alaska of the continental states. That is, a wild backyard for us and its plant and animals.

> The deserts represent one of the last North American areas in which large tracts of land remain relatively uninhabited. The arid wilderness has been slower to "develop" in the usual sense than areas more amenable to settlement and exploitation through agriculture and industry—a magnificent beneficence insofar as desert and wilderness aficionados are concerned. Space between people is one of the desert's most pleasing aspects for those who would explore it. …
>
> When Environmental stresses build, animals and man can crawl, walk, run, or fly to reach the most amenable environmental conditions available; not so the rooted, immobile plants which must meet sun, wind, heat, and aridity where they stand. In the desert where moisture supplies tend to be limited and environmental stresses tend to be extreme, the plants, in order to survive, must be capable of operating with a low margin of error where high demand and low supply of water is concerned. Ranging from cacti to creosote bush to boojum tree, those plants that have been successful in meeting this challenge make up one of the most highly adapted, unusual, and interesting of the world's faunas. …
>
> The so-called desert world is actually a mosaic of smaller worlds, and the environmental conditions present in any one of these small worlds are often strikingly different from those of another area which may be located only a few feet or even inches away. These smaller pieces of habitat, or <u>microhabitats</u>, in general each have their own microclimate

Peggy Larson with Lane Larson, Drawings by Lynn Larson, Foreward by Edward Abbey, A Sierra Club Naturalist's Guide to The Deserts of the Southwest (1977) pages 14, 49 and 50.

Failure to recognize, identify and describe the great diversity of Mojave Desert plant communities and the assessment needs and mechanisms to carry out this area and species identification and assessment the great diversity of Mojave Desert plant communities.

I (Michael) am a native Californian, and in the Summer of 1964 I first looked, not having seen it before, at the basin and range disappearing into the distance from Fandango Pass in the Warner Mountains of California. My exploration of it started then, continued in earnest beginning 15 years later when I went to the valleys proposed for MX missile race tracks, and continues to this day.

My travel to the Colorado Plateau began in 1979 in southeast Utah, and then grew exponentially and has continued in the slickrock/Canyonlands desert from 1989 to the present, though I entered my first of so many slot canyons only in 1997 in Grand Staircase Escalante, NM.

I've also traveled for many years in the high deserts of Oregon and other states, and in more recent years to Big Bend NP, Saugauro NM, Organ Pipe NM.

Regarding the Mojave, in the winter of 1964 I first visited Death Valley—my introduction to it. I've been to Death Valley many times, heavily from 1979 to 1981 including every way I could find in and out of it, and regularly since returning to California in 1997. As for the rest of the Mojave, other than a north-south trip through the heart of it in the 1960's, I've traveled through it many times without stopping until I reached my destination.

So, none of these desert wanderings prepared me for the five days I've spent in the last five weeks seriously exploring the Mojave Desert outside of Death Valley for the first time. As we or I went to different landforms and places, I began to notice different dominant shrub species, and this more than the landforms we were seeking on the first trip began to dominate my curiosity. Before that I could never have imagined encountering the amazing variety of shrub species that are found in the Mojave from one place to the next, not to mention the interspersed cacti. I got my B.S. in Forestry and Conservation field work that was mostly in the Sierra Nevada, and this familiarized me with paying attention to the shrub layer and the limited number of dominant shrub species that are there compared to what can be seen moving around the Mojave. When I returned to the Mojave for my second recent trip, this is what I looked for, even retracing my steps. I'd come to have little expectation of more than seeing one or two dominant species like sage or pinyon juniper that dominate so many other plant communities of the west.

And now I look for and do not find in the SPEIS documents meaningful recognition of, information about, assessment mechanisms for, or explanation of, how the plant community diversity I experienced in the shrub layer or other plant community diversity will be handled and protected for this project. Does the failure of the PEIS documents to give major recognition to this stunning biological fact of the Mojave and to alert the decision makers and public to it mean that the PEIS is inadequate to the task at hand? In a word, yes. It is reasonable to conclude that the virtual uncountable number of species found in some places and the variability from one place to the next –- a dozen, a couple of dozen, or more species -- are not on the BLM-DOE radar.

It is this experience that led me to the books quoted at the beginning of this letter.

Failure to identify, inventory, map and describe and address the country's last remaining largely undisturbed desert ecosystems including their value, and to provide a NEPA assessment of project impacts on them and how this can be prevented or mitigated.

The DPEIS failure to address the rich shrub and other vegetation diversity of the Mojave leads to and is connected to the larger failure of the documents to address the existence of and impacts on the larger desert ecosystems.

The supplement goes in the wrong direction by seeming to narrow its geographic scope without providing for identification and assessment of the ecosystem-wide deserts and the impacts of the project and project options on them.

Any narrowing only points to the fact that both a more "limited" project and the no project alternative may have significant and wide-ranging negative impacts on the desert ecosystems and on the benefits to the environment that the deserts now provide.

But it is basically the same point to say that providing for the opening up of new post-PEIS SEZ areas also is also an unaddressed impact on the larger desert ecosystems.

Failures regarding national, state, district and local and other offices to describe current BLM and DOE staffing including issue, administrative and other assignments, and geographic assignment locations; failure to identify the level of BLM, DOE and other staffing and funding necessary to implement the project, and to failure assess the adequacy of known staffing and funding for achieving the purposes of the project including enforcement.

Missing is identification of the BLM and DOE staffing and the funding that is necessary to carry out the six state project.

Missing is identification of the present BLM and DOE staffing at the local through national levels.

Missing is a comparative touchstone regarding the level of staffing that is necessary to adequately administer BLM lands including the project. One essential comparison is to US National Forest staffing levels from National Forest Districts to regional and national USFS headquarters as a comparative mechanism to determine the adequacy of BLM staffing and ability of BLM to carry out the project in the necessary manner.

We note that National Forest staffing now appears to us to outstrip BLM staffing at every level, and BLM does not even have the necessary level of staffing to prepare this DPEIS or to oversee contractors working for BLM.

The present situation of governmental financial incentives to solar developers without the parallel of BLM staffing resources makes it essential for BLM and DOE to identify the staffing needs it has for this project. Without necessary BLM and DOE staff, Congressional financial incentives to solar developers become a factor adding to the giveaway of public lands contemplated in the SPEIS.

Large scale solar facilities and this project pose the biggest threats to our public lands and to our country's ecology in history. We oppose both.

The massive failures of the PEIS documents and the absence of public involvement regulations are additional independent reasons for our opposition positions. The NEPA documents and the public process are failures. We do not have sufficient information to make any other recommendation. BLM and DOE do not have sufficient information and public involvement to make a decision.

Once sufficient NEPA documentation is released, and after public involvement regulations have been adopted, there must be hearings throughout the West on the project and on the future of our country's ecological integrity that is threatened by big desert solar.

Sincerely,

QuickTime™ and a
decompressor
are needed to see this picture.

Michael N. Garabedian, Co-founder
916-727-1727

Thank you for your comment, Loretta Mitson.

The comment tracking number that has been assigned to your comment is SEDDsupp20160.

Comment Date: January 27, 2012 18:52:54PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20160

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Comment Submitted:

Given the State of the Union address by President Obama this past week, it seems moot to offer any public input contesting the wisdom of opening public lands to large scale solar development. It seems that his mind is made up and the tens and tens of thousands of comments from the public will go unheeded.

However, I have some concerns to address that, no doubt, others have already pointed out. Maybe if our concerns are voiced by enough concerned people someone will realize the huge error that the federal government is making.

FIRST, I would agree that public lands under the administration of the federal government NEED to be managed for multiple use. Certainly oil, natural gas, and coal are necessary for the survival of our country and certainly they do not exist everywhere, so when they are discovered on federal land and are economically and environmentally feasible to mine, then the government has to make some hard choices to make that resource available for the public good.

Solar, however, is an entirely different resource and so it needs to be addressed differently. Obviously the sun shines everywhere, not just on publicly managed lands. The federal government is making a huge mistake in making public lands available for solar development because there are already ample sites on private property for this kind of development.

In my home area of the San Luis Valley of southern Colorado there exist about 400 agricultural center irrigation pivots about to be decommissioned due to the state mandate to shut them down, in order to preserve the aquifer. This is scheduled to begin in the next year. Most of these 400 parcels of land have about 160 acres which are already connected to the existing electrical grid. So that translates to 64,000 previously productive acres not generating any revenue for their owners, for their counties, or for this state. What an opportunity to make that land available for solar development. How sad that the federal government plans to make OUR public lands available for solar development, in DIRECT COMPETION with private property which would be a much better choice for solar collector siting.

SECOND, if the federal government is so interested in creating jobs, the creation of large scale industrial solar development on remote public lands does nothing long term to create meaningful numbers of “green jobs” in

these areas. Industrial scale solar brings in trained developers from other areas to get them built, and then they leave. If this administration wants to create employment in every corner of the southwest, them medium scale solar gardens and individual and small business solar installations need to be encouraged. Imagine a sort of modern day "WPA" to encourage the growth of solar. Solar training programs could be created in every region to train young people to become community installers and resource people to maximize the employment opportunities and to maximize the value added by giving communities more autonomy over their energy use. Imagine that… more jobs everywhere and more money returned to communities all across the country in terms of their ability to meet their own energy demands. What a saving for individual households all over the country.

The current plan by the Department of Interior, the Department of Energy, and the Administration, while sincere in its intent of trying to make this country more energy independent is seriously FLAWED. What is happening is the creation of another opportunity for the existing power industries to create wealth for their investors at the expense of the consumers. Once again the "1%" is offered an opportunity to continue to exploit the rest of us, the "99%". Here is an opportunity for the Obama Administration to make some serious change in the paradigm and really be visionary. It is time to create an opportunity to give the "power to the people".

THIRD, our agricultural area is enduring an ongoing drought. Has anyone done any studies on micro climate change resulting from large areas of open land being covered with solar collectors? This is one of the most productive agricultural areas in the state of Colorado, but it is in a precarious environmental position. Anything that would exacerbate the drought could negatively impact the agricultural economy, as well as the vast regions of wildlife habitat that are already severely stressed.

FOURTH, if energy security is a concern, then solar development in smaller clusters provides us more security from natural or manmade disasters, than does massive concentrations of large scale collectors.

FIFTH, if Ken Salazar and the Department of Interior are so interested in creating a corridor to preserve the heritage and natural resources of the Sangre De Cristo Mountain and Rio Grande corridor, why would they want

to carve up the vistas with unnecessary solar development on public land? These are OUR public lands. The San Luis Valley is our Grand Canyon. The San Luis Valley is one of the last, best, great places in Colorado. It is not necessary to despoil it with industrial development of public land. This policy of Ken Salazar and the Department of Interior is contradictory!

SIXTH, if countries like Germany are anticipating being energy independent by 2020, we should be learning something from their model. Germany has utilized much of their agricultural lands for medium scale solar generation as a way of subsidizing agriculture, thus killing 2 birds with one stone, so to speak.

SEVENTH, we are encouraging a solar model that is almost obsolete before it is even being built. The best siting of small scale solar and industrial scale solar is closer to the point of use. Industrial scale solar so far from the point of use is wasteful of the energy generated and destructive of lands to create transmission corridors.

EIGHTH, if the federal government wants to create industrial scale solar on public lands, then why not consider the corridor along the US/Mexico border. Didn't the INS place a concrete wall along some of that? Certainly it is an area that receives an exceptional amount of solar radiation. Certainly it is an area for which there is no practical use, other than staffing with INS agents trying to catch desperate immigrants. How about that: a solar generation corridor 1,969 miles long, in an area with maximum solar gain, with no other useful purpose?! And while they are out there, the INS agents could keep the collector panels clean! Seriously, though, something to think about.

Thank you for your comment, Olive Toscani.

The comment tracking number that has been assigned to your comment is SEDDsupp20161.

Comment Date: January 27, 2012 18:57:13PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20161

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Attachment: Solar Energy PEIS Letter.docx

Comment Submitted:

Comments attached, thank you

Solar Energy PEIS Scoping Argonne National Laboratory 9700 S. Cass Ave. – EVS/900 Argonne IL 60439

Re: Scoping Comments on the Solar Energy Development Programmatic Environmental Impact Statement

To Whom It May Concern:

I appreciate the opportunity to comment on the Solar Energy Development Programmatic Environmental Impact Statement (PEIS). My sentiments and comments follow:

1. The PEIS must thoroughly analyze potential economic, material, and nonmaterial impacts to desert communities if the greater desert areas are industrialized with solar energy and transmission projects. Many desert communities depend economically on location- and resource-reliant industries such as tourism; location shooting for film, television, and advertising; recreation, both motorized and nonmotorized; and other cultural activities such as art, historical, and spiritual tours and retreats. Loss of greater-desert viewshed and open space means loss of livelihood for desert communities. Desert communities also increasingly rely on the aesthetic and environmental quality of their setting to attract today's increasingly mobile workforce that has become less geographically tethered and can choose where they live. Retirees are also a significant part of our communities that can choose where they live based on natural amenities and appeal. Therefore, our property values depend on those amenities and that appeal. A diminishment in the quality of desert life will mean income directly lost and future potential thrown away for

our communities. Desert towns will lose their meaning, their heart, and their health if the

surrounding desert is essentially "taken away" by industrialization.

2. The PEIS should include a thorough survey of impacts to

potentially culturally and historically significant lands, including areas developed as part of the historic 1938 Small-Tract Homestead Act that shaped many of the outlying, low-density communities in the Morongo Basin and elsewhere in the Southwest deserts. These unique communities in some cases lie largely intact, but their cultural and historical significance is only recently becoming recognized. Refer for example to the 2008 Wonder Valley Homestead Cabin Festival, which generated interest and participation from its cousin homestead-based communities such as Landers and Johnson Valley (http://homesteadcabin.wordpress.com/) and was featured in the 2008 Architectural Annual issue of Dune Magazine.

3. The PEIS should include consultation with Native American tribal governments to determine whether there are sites or specific areas of particular concern, including sites of traditional religious and cultural significance.

4. The PEIS should study the impacts of increased vehicular traffic and congestion on desert communities, environmental resources, road infrastructure, and public safety during both construction and operational phases of solar and transmission development.

5. The PEIS should study the impacts of worker populations on sensitive desert resources during both construction and operational phases of solar and transmission development.

6. The PEIS should study the impacts on resources that would follow from the introduction of new routes, in view of the known problems caused by off-road vehicle activity and the "invitation" effect of new routes.

7. The PEIS should study impacts on limited water resources

and the effects of competition with desert communities, as well as biological communities, for those resources.

8. The PEIS needs to include the proposed expansion of the Marine Corps Air-Ground Combat Center when considering cumulative and long-term impacts.

9. The PEIS needs to consider how the desert communities' own energy needs will or will not be served by these projects.

10. The PEIS must thoroughly analyze the socioeconomic, security, and environmental effects of remote installations versus locally distributed power and consider alternatives that focus renewable energy development close to the load centers. The impacts and benefits of a comprehensive program involving rooftop solar across the developed Southwest, as well as additional potential energy alternatives, must also be thoroughly analyzed and considered. To single out the desert to bear the brunt of providing energy for the urban areas is an ENVIRONMENTAL JUSTICE issue. To demand sacrifice only of the desert areas and not the load areas is not acceptable!

11. Areas that have already been degraded should be prioritized for consideration for solar and transmission development. No public lands that are basically still relatively undisturbed should be considered for solar energy or transmission use until all degraded lands have been utilized.

12. Removed from any consideration for solar and transmission development should be all protected lands, such as national and state parks, monuments, and preserves; environmentally significant areas such as Designated Wildlife Management Areas and Areas of Critical Environmental Concern; and lands with significant environmental

resource potential such as Wilderness Study Areas, other lands with wilderness

characteristics, and areas that are under consideration as potential wildlife corridors.

13. The PEIS must include a programmatic evaluation of cumulative impacts to Endangered and Listed species, especially the Desert Tortoise.

14. The PEIS must study the potential of construction and operational phases to introduce or encourage invasive vegetation, including *Brassica tournefortii* or Saharan Mustard, not just at project locations but throughout the desert areas, as vehicles are one of the biggest culprits for spreading invasives.

Thank you for your attention to these comments,

Sincerely,

Olive Toscani

Thank you for your comment, David Festa.

The comment tracking number that has been assigned to your comment is SEDDsupp20162.

Comment Date: January 27, 2012 19:03:34PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20162

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Attachment: SolarEnergyDevelopment_Letter.pdf

Comment Submitted:

EDF
ENVIRONMENTAL
DEFENSE FUND
Finding the ways that work

January 27, 2012

Jane Summerson
NEPA Compliance Officer
U.S. Department of Energy
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Shannon Stewart
Senior NEPA Program Lead
Bureau of Land Management
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SUBJECT: Comments on Supplement to the Draft Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States

Dear Dr. Summerson and Ms. Stewart:

Thank you very much for the opportunity to comment on the Solar PEIS.
Our comments are limited to those portions of the Draft PEIS and associated supplement that pertain to impacts on wildlife and special status species.

The Draft PEIS does an excellent job of identifying avoidance and minimization measures (referred to as "design features") for wildlife and special status species (Appendix A, page A-55, Section A.2.2.11.1 Siting and Design). We also support the requirement to develop an Ecological Resources Mitigation and Monitoring Plan (Appendix A, page A-62, line 24) that will include "Compensatory mitigation and monitoring to address any significant direct, indirect, and cumulative impacts on, and loss of habitat for, special status plant and animal species (Appendix A, page A-62, lines 38-40).

We strongly support the mitigation hierarchy of first avoiding the most sensitive areas, then minimizing adverse impacts to the maximum extent practicable, then restoring adversely impacted areas to the maximum extent practicable, and finally offsetting residual and cumulative impacts. In the best-case scenario, avoidance, minimization and restoration measures will result in no change to the baseline conditions (e.g., extent and quality of habitat) for wildlife and special status species. However, best-case scenarios are rarely, if ever achieved and limiting mitigation to avoidance, minimization and restoration will typically result in a net

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reduction in baseline conditions. In order to achieve no net-loss, or better yet net-gain, and to fully compensate for residual and cumulative impacts, it is essential that offsets be a required component of all Ecological Resources Mitigation and Monitoring Plans.

We recommend that the mitigation hierarchy be applied to regional landscapes in a structured, consistent, transparent and environmentally-beneficial manner. We further suggest that this be achieved through the establishment of regional, market-based credit systems that provide for avoidance, minimization, restoration and offsets in a way that maximizes conservation benefits and cost-effectiveness of mitigation investments.

A regional, market-based credit system identifies and prioritizes habitat areas and management actions that are vital to wildlife and special status species conservation, ideally across the entire range of the species. This information is often already available in state wildlife actions plans or other conservation plans developed by agencies or conservation organizations. Habitat areas and improvements in baseline conditions that result from management actions are then quantified based on their conservation value and this quantification is identified as credits, which becomes the currency of mitigation. Specifically, the process for generating credits would involve (a) an assessment of current baseline conditions (evaluating factors such as threat of conversion and habitat extent and quality) and setting specific goals to increase the baseline, (b) planning protection (e.g., permanent easements) and management actions to increase the baseline, (c) implementing the prescribed protection and/or management actions (d) ongoing monitoring to determine if adequate progress is being made, (e) implementation of adaptive management if necessary and (f) accrual of credits once the specific increases to baseline have been achieved. In some cases credits may be generated immediately, such as when implementing a permanent easement to avoid near-term conversion of habitat.

Credits may be generated and accrued on both private and public lands. The options for generating credits on federal lands that already include a conservation mission and are permanently protected would be limited to actions that clearly resulted in an increase in baseline conditions such as purchasing and retiring grazing rights so as to benefit the desert tortoise (see the Clark County Desert Conservation Plan for additional examples: http://www.clarkcountynv.gov/Depts/dcp/Documents/Library/Guiding%20Docs/previous/2971_DesertConservationPlanAugust_1995.pdf).

Credits can be a simple measure such as acres of habitat (as is typically done for conservation banks), but we suggest that the science is sufficient for many species and habitats to enable a more robust measure of conservation value; one that incorporates habitat quality and contribution to conservation goals, in addition to acres. Adverse impacts (i.e., "debits") are quantified using the same metrics that are used to determine credits, such that a common currency is established. This type of credit-debit valuation enables us to establish a market-based trading system for offsets, to more accurately measure and monitor mitigation outcomes, and to accurately determine if all residual and cumulative impacts are being fully offset.

Regional market-based credit systems work by enabling landowners to generate and sell credits in a competitive environment to energy companies that need to offset debits resulting from residual and cumulative impacts. We envision that these systems will be most effective when a

program administrator serves to aggregate and broker the marketing of credits, perform management activities on enrolled lands, coordinate monitoring efforts and insure compliance. Funding for monitoring and managing a typical conservation bank is too often insufficient: the higher these expenses, the lower the potential profit of the conservation banker. Centralizing the monitoring and management roles in a program administrator will maximize the consistency with which these activities are conducted and minimize their expense by capturing economies of scale.

In part, a regional market-based credit system can be viewed as a programmatic conservation bank: Private landowners can sell credits based on the placement of a permanent easement on qualifying areas of their land. The process of establishing regional credit systems includes completing the administrative and legal requirements necessary to enable any qualified landowner within the designated landscape to easily and quickly convey a permanent easement and thereby sell permanent credits. This approach is essential to getting significant numbers of landowners engaged in the generation and sale of permanent conservation credits as the complexity, expense and time required for establishment of a typical conservation bank is beyond the resources of most landowners.

Regional credit systems also provide the ability for landowners to participate in species conservation and recovery efforts through term agreements (if appropriate for the species and habitat); a type of participation that is appealing to a broad range of landowners. Some adverse impacts are not perpetual and, in these cases it makes sense to offset temporary debits with temporary credits. Temporary credits that are generated through term agreements enable the accommodation of substantial shifts in species habitat distribution and/or quality over time due to climate change, disease, invasive species or other reasons. Term agreements may be allowed to expire in areas where habitat value may be declining due to one of the aforementioned reasons and new agreements may be executed in areas where habitat value is relatively higher or increasing.

Regional credit systems provide a mechanism that incentivizes the participation of large numbers of landowners across broad landscapes to achieve desired mitigation and conservation outcomes. The credit valuation and trading process insures that transactions result in conservation occurring at the highest priority habitat areas. The market-based nature of the system insures that the desired mitigation outcome is achieved at the lowest possible cost.

We request that the BLM and DOE incorporate regional market based habitat credit approach mitigation strategy described in this letter into the Final EIS as an approach to mitigating cumulative impacts.

Sincerely,

David Festa
Vice President, West Coast
Environmental Defense Fund

cc:

Mike Mantell, Resources Legacy Fund
Kim Delfino, Defenders of Wildlife
Laura Cane, The Nature Conservancy
David Hayes, Department of Interior
John Laird, Secretary of Resources, State of California

Thank you for your comment, Brendan Hughes.

The comment tracking number that has been assigned to your comment is SEDDsupp20163.

Comment Date: January 27, 2012 19:08:10PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20163

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Attachment:

Comment Submitted:

To whom it may concern:

The Supplemental DEIS is somewhat improved from the original Solar DEIS. However, BLM and DOE still have light-years to go to get a document that makes sense and suits the needs of the American people. The SDEIS fails to take a common sense and balanced approach to renewable energy. It should address the renewable energy issue like the Restoration Design Energy Project in Arizona, which is looking at degraded and disturbed private lands as well as public lands. The EPA has already given suggestions (they even have a Google Earth layer-I've seen it) for suitable solar and wind locations on contaminated lands like Superfund sites. These documents and processes should be included in any analysis of solar development.

Another part of the problem is that the US government does not have a unified, national energy strategy that projects the growth in energy demand and how renewables play a part in addressing the energy issue. The scattershot approach of the BLM and DOE has led to the land rush on our public lands, and this document should have addressed reining this chaos in.

Instead of allowing for the large-scale privatization and pillaging of our public lands for private profit, as is the current model of the SDEIS and the Ivanpah Solar Project, BLM and DOE should assess the potential for the widespread installation of rooftop solar in residential, commercial, and industrial areas. BLM has dismissed this option time and time again, without ever stopping to assess the feasibility and viability of this type of approach. Rooftop solar is more cost effective while creating more jobs for American workers than industrial-scale, remote solar arrays. The only downside is that it spreads the wealth out amongst many individuals and entities, instead of profiting one giant corporation. Think of how many megawatts could have been installed on rooftops with the more than $1 billion in government aid that BrightSource received for the Ivanpah project. Rooftop solar is the best option for the American people, and it preserves our precious public lands all the while.

Finally, as part of a national energy strategy we need a greater focus on energy conservation and efficiency, as President Obama emphasized in his 2012 State of the Union address. We could reduce our energy use by approximately one-third with improvements in technology and by educating citizens about changes in habit. This should be the first order of business in any energy scheme, because it saves consumers money, creates jobs that cannot be outsourced, and truly protects our environment.

I implore BLM, DOE, and the Obama Administration to please take a wise, conscientious approach to energy development and use. Please don't sacrifice our pubic lands for political expediency and private profit.

Thank you for your consideration.

Brendan Hughes

Thank you for your comment, David Myers.

The comment tracking number that has been assigned to your comment is SEDDsupp20164.

Comment Date: January 27, 2012 19:14:04PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20164

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Attachment: SPEIS_TWC Comments_Jan 27 2012.pdf

Comment Submitted:

THE WILDLANDS CONSERVANCY

January 26, 2012

Solar Energy Draft PEIS
Argonne National Laboratory
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Dear Ladies and Gentlemen:

As an introduction to our comments on the Supplement to the Draft Programmatic Environmental Impact Statement (PEIS), The Wildlands Conservancy (TWC) is taken aback after several years of working closely with the Bureau of Land Management (BLM) and the Department of the Interior (DOI) to resolve conflicts. Lands donated by this organization were removed from the Solar Energy Zones except for several thousand acres. Now we find over 50,000 acres of donated lands within the variance area of the PEIS. Once again, it is important that we recount the history of these donated lands.

The Wildlands Conservancy negotiated a sale of more than 600,000 acres to the DOI from Catellus Development Corporation at less than half the fair market value of these lands. TWC went on to raise $45 million in private monies toward the acquisition of these lands. TWC also spent hundreds of thousand of dollars in what was the largest Phase I/land cleanup in California history. This cost TWC hundreds of thousand of dollars to just demolish wells and mining sites that were unacceptable to the BLM. Trash and dump sites were removed from more than 100 parcels, all paid for by TWC. The United States government repeatedly represented that these lands would be protected in perpetuity. Please see the attached letter from former President Bill Clinton, a press release by former Vice President Al Gore, a press release by former Interior Secretary Bruce Babbitt, a letter from Senator Dianne Feinstein, a letter from past BLM National Director Tom Fry, and a letter from past BLM California State Director Al Wright.

Specific strategies were employed to protect these lands in perpetuity. BLM rendered a written opinion to TWC that if we commingled our private monies with Land and Water Conservation Fund monies, then use of the LWCF monies would make clear the intent of Congress that these lands would be set aside for conservation. In addition, BLM did a mineral survey of Catellus lands outside of Wilderness Areas and National Parks, and requested that TWC retain the mineral estate on properties of high mineral value so that those lands could not be exploited. In Imperial County, where no LWCF monies were

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available to commingle with private funds, BLM sought to ensure conservation values by asking TWC to retain the entire mineral estate. As further assurance, the mineral rights were split from the surface entry rights, to be held by BLM, so that both parties could mutually assure these lands would not be exploited in the future.

Now we find 50,000 acres of these donated lands, which were pledged for permanent protection, proposed as "variance" areas for energy projects. How can a small nonprofit organization that cannot by law contribute directly to political campaigns, protect its conservation legacy when the donors to the Obama administration, who want to exploit these lands, are receiving billions of dollars in federal stimulus money? If theses lands are allowed to be exploited, the vision and idealism of our organization, which has never taken public money and looks at all of its work as a gift to the American people, will be eviscerated. If this exploitation of donated lands goes forward, it will be looked at in a historic perspective in the same manner the U.S. government broke its treaties with the American Indians. It will also confirm the lowest form of cynicism that is so prevalent in our society today: that no good deed goes unpunished, that government only responds to monetary influence, and that the word of U.S. Presidents, Vice Presidents and Interior Secretaries are without merit or meaning.

The comments attached for the Supplemental Draft Solar Programmatic Environmental Impact Statement are by young TWC preserve managers who have degrees in biology, live on our desert preserves, and interface with tens of thousands of desert visitors each year. These young people are in tune with natural rhythms of the land and have their hands on the pulse of the desert. These comments are much different than those of the National Defense Resource Council whose comments are influenced by their attorney, Robert F. Kennedy, Jr., who is a major investor in BrightSource and is working closely with British Petroleum, Chevron Energy and Bechtel, preventing the democratization of energy through rooftop solar. The roughly $35 billion given to major energy projects for stimulus grants could have installed rooftop solar on 3.5 million houses. Instead this administration touts the BrightSource project as its signature project, a project that is not green but is actually a natural-gas-fired plant which has destroyed tortoise populations and public lands at an increase to rate payers.

TWC spent considerable time identifying enough private disturbed and degraded land for all California's renewable energy goals. What is it in our changing culture that has made us rush to destroy the beauty, solitude and inspiration of pristine public lands?

Sincerely,

David Myers

David Myers
TWC Executive Director

January 27, 2012

Solar Energy Draft PEIS
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Comments on the Supplement to the Draft Solar Programmatic Environmental Impact Statement

The Bureau of Land Management's (BLM) current Preferred Alternative in the Supplement to the Draft Solar Programmatic Environmental Impact Statement (Supplement) is pushed by an Obama administration agenda to open far more public land to utility scale solar development in the California desert than is necessary, even by the Supplement's own calculations (Supplement Table 1.6-1). The proposed "variance" process goes against the entire idea of siting development areas in responsible ways to minimize conflicts. **For this reason, The Wildlands Conservancy (TWC) opposes the BLM's current "Preferred Alternative" of the modified program approach that includes a variance process.** By sacrificing public lands, the program forces resources away from degraded and other private land, robbing local communities of much of the benefit from energy projects. This process would put 1.5 million acres of land currently open to the public for recreation under threat of becoming privatized for the purpose of feeding profits to some of the same corporations that have presided over environmental and financial catastrophes elsewhere. We would hope that the development of renewable energy to meet the challenge of global climate change would be encouraging and fruitful. Unfortunately, the decision to steamroll local stakeholders in the interest of corporate politics has turned what could be a unifying effort into a divisive conflict.

Because of the consensus process completed to identify and refine the solar energy zones, we support the modified SEZ alternative. Siting has long been recognized as the key issue in developing land intensive renewable energy projects, which is why TWC signed on with a group of organizations to Renewable Siting Criteria (Attachment 1). The zone-only approach is the closest alternative to this criteria.

Catellus Lands

The Wildlands Conservancy absolutely rejects the idea that a variance process can or will be carried out in a responsible way. Under the variance process, nearly 50,000 acres of conservation lands purchased by TWC with private monies and donated to the Department of the Interior (DOI) will be opened to industrial solar development (see attachment 2). TWC's purchase of these and other private checkerboard lands was hailed by the BLM at the time as being of great value to its conservation goals. The total purchase represents the largest nonprofit land gift to the American public in United States history, and was intended to keep land open for public enjoyment and ecosystem health. It was completed using not only 45 million dollars of TWC's privately raised funds, but also millions of public dollars through the Land and Water Conservation Fund. Including these lands in a variance process is an egregious violation of public trust, and goes against promises made to TWC by the Clinton administration and BLM Director Tom Fry at the time of the donation agreement (see attachments 3-8). All of these donated lands should immediately be taken out of the variance envelope and put in the

"Proposed Right-of-Way Exclusion Areas" (Section 2.2.2.1 in Supplement). That they were included in the variance at all is alarming.

Here is just one example of the blatant disregard for good faith stewardship of these donated lands: Just south of state Highway 78 near the San Sebastian Marsh/San Felipe Creek ACEC, several thousand acres of donated Catellus lands are on the table for variance applications, while all of the other public lands that surround these checkerboard sections are closed to variance applications. This is a direct affront to TWC's multi-year effort. How is it that these lands, purchased and donated for conservation, would come open for variance applications, while public lands just next to them remain closed to applications under the preferred alternative?

Furthermore, while the Supplement states that lands inside of the proposed Mojave Trails National Monument will be in an Exclusion Area, an application still exists on these lands on the "Pending Applications" list in the Supplement. BrightSource Energy holds application CACA 048875 for a project in the Broadwell Valley, inside the proposed Monument. The only language that suggests pending applications in Exclusion Areas may not be ultimately be accepted is found in lines 14-16 on page 31 of the Supplement: "Pending applications on lands proposed as exclusion areas for utility-scale solar energy development in the Final Solar PEIS are likely candidates for denial." The continued presence of this project and the gentle language in the Supplement regarding its future only add to the feeling that this process is being completed in bad faith. This project should be removed from the application list immediately.

The Wildlands Conservancy intended that the Catellus purchase would be a gift to the American public, keeping huge areas of the California desert permanently open for outdoor enthusiasts, wildlife, and ecosystem processes. We now see, after repeated attempts to permit these donated lands for development, that the administration is intent on pushing agendas, not conservation or public recreation. For this reason, we are demanding that for every acre of donated Catellus land destroyed by development, DOI shall make reparation payments to TWC at fair market value, rather than make it available for energy exploitation at no cost to the administration's donors.

Solar Energy Zones

The solar energy zones were chosen with the intent of minimizing possible conflicts with existing land uses, and more than enough land has been identified in these zones to meet imminent renewable energy goals. According to the estimates included in the Supplement, the amount of public land needed for solar energy development (138,769 acres by 2030) is less than the acreage identified in the zones (over 150,000 acres), and far less than the variance areas plus the zones (1.5 million acres).

The Desert Renewable Energy Conservation Plan (DRECP) is creating a process in California by which additional solar energy zones, including both private and public land, will be identified. In short, there is no need for a variance process to be a part of the solar energy program to meet our renewable energy goals. Any form of a variance process should be dropped from further consideration; the zone-only approach should be pursued; and continued refinement of existing zones and establishment of future zones should be left to the DRECP.

Low Conflict Alternatives

It is apparent that any of the three alternatives in this document could create a self-fulfilling prophecy that the majority of solar development will occur on public land unnecessarily and to the public's detriment. The PEIS has undercut a truly low conflict alternative to use hundreds of thousands of acres of marginal or abandoned farmlands in the California Desert and the San Joaquin and Central Valleys. TWC completed an inventory in 2010 of over 225,000 acres of disturbed and degraded lands with willing sellers along transmission corridors that could host utility scale renewable energy development on large parcels of land (Attachment 9). Instead, the administration has chosen to unnecessarily sacrifice vast landscapes, habitats, open space areas, and wildlife corridors. Beginning with the assumption that 75% of solar energy development would occur on public lands, the Obama administration has been pushing its agenda through any obstacle. By forcing the process of renewable energy onto public land, the administration has undercut the possibility that this development could have happened on private degraded lands or on rooftops that exist throughout the state. Despite continued requests for alternatives that would address distributed generation in any serious way, no sound discussion has taken place in the Draft Solar PEIS or the Supplement, just a categorical dismissal. This is in spite of thorough research indicating that rooftops in California could provide incredible amount of solar generated power, according to a study published by the California Energy Commission in April of 2005, "California Solar Resources".

While it is true that the Bureau cannot influence the development of private solar rooftops and other sources of distributed generation on private land, the Department of Energy (DOE) is contributing to the Solar PEIS. If DOE is co-authoring the PEIS and supplement, then it can and should create a thorough discussion of a distributed generation and degraded lands alternative to utility scale approaches in the document. There has been no national effort from DOE to encourage rooftop solar installation or private degraded lands installation, but rather a rush to site projects on public lands, and spend public monies on grants and loan guarantees. DOE should justify why billions of stimulus dollars are flowing to corporations instead of private land owners for energy conservation investments and roof top solar, programs like the California's AB811, or being used as incentives to direct companies to degraded farmland.

Ecosystem Functions

The Mojave Desert is a storied landscape and one of the last remaining intact ecosystems in the world. As we learn more about the desert, we realize what a unique place it is. Ancient creosote rings, old growth yucca forests, an amazing diversity of reptiles, unique lava flows frozen in time, and cryptobiotic soils and mycorrhizae that soak up carbon dioxide: All are special attributes that science and agencies have identified and are making attempts to manage properly. Not only does the variance process threaten to cut the desert ecosystem in two between Blythe and Barstow, but it could directly threaten ecosystem functions; here are two examples.

The Sheephole Mountains Wilderness south of Amboy is home to a resident herd of bighorn sheep, many of which were part of a reintroduction effort to boost dwindling numbers. The northwest edge of the Sheephole Mountains Wilderness gives way to the Cadiz Valley and the Cadiz Dunes Wilderness, named for sand dunes that

are dependent on the sand transport corridor in the area. We know from studies of the bighorn sheep populations in the desert that there is occasional movement between home ranges which leads to long term stability of populations (Epps, et al. 2010) and that development inside a corridor affects this movement negatively. South Coast Wildlands is currently working on a study of this and other movement corridors in the California Desert to elucidate what possible routes of travel sheep and other animals have between the Sheephole Mountains, the Cadiz Dunes Wilderness, and the Old Woman Mountains, which could be negatively impacted by industrialization in the Cadiz Dunes area. Industrializing the landscape around the Cadiz Dunes not only could block a sand transport corridor, but also runs directly counter to the conservation investments that the American people have made to reintroduce sheep, and is a breach of public trust.

Another example that is well known is the effect on desert tortoise populations by the Ivanpah Solar Energy Generating Station in the Ivanpah Valley. While Brightsource completed a survey of tortoise in its project area as part of an environmental review, its predicted number of affected tortoises was underestimated by an order of magnitude. This project illustrates one of the major problems with the proposed variance process. Allowing industrial scale energy projects on large patches of pristine land will have unforeseen and unmitigatable consequences on the local ecosystem. These destructive projects run counter to years of investment and many millions of dollars to save the desert tortoise from extinction, and to protect the resources of the California Desert. We request that all further development in the Ivanpah Valley be prohibited, and that area become as Area of Critical Environmental Concern as outlined by the Basin and Range Watch, Desert Tortoise Council and Desert Protective Council.

To avoid conflicts such as these while our understanding grows, TWC recommends that the Solar PEIS adopt the Recommendations of Independent Science Advisors (ISA) for the DRECP. In particular, a “no regrets” strategy should be adopted as outlined in the ISA recommendations. To achieve this end, the variance process should be dropped, and a zone only approach adopted, and only those portions of zones that are appropriate.

Conclusion

The PEIS does not provide for any alternatives that are truly for the greater good. Instead, they have laid out yet another set of limited options that waste public funds, destroy public lands needlessly, and line the pockets of profit driven corporations.

We encourage the Final PEIS to address the issues raised here that are of great importance to local stakeholders who recognize the long term value of keeping our desert intact.

Literature Cited

Epps, Clinton W. John D. Wehausen, Per J. Palsbøll, and Dale R. McCullough. April 2010. Using Genetic Tools to Track Desert Bighorn Sheep Colonizations. *Journal of Wildlife Management.* 74(3):522-531

Audubon California
California Native Plant Society * California Wilderness Coalition
Center for Biological Diversity * Defenders of Wildlife
Desert Protective Council * Mojave Desert Land Trust
National Parks Conservation Association
Natural Resources Defense Council * Sierra Club * The Nature Conservancy
The Wilderness Society * The Wildlands Conservancy

Renewable Siting Criteria for California Desert Conservation Area

Environmental stakeholders have been asked by land management agencies, elected officials, other decision-makers, and renewable energy proponents to provide criteria for use in identifying potential renewable energy sites in the California Desert Conservation Area (CDCA). Large parts of the California desert ecosystem have survived despite pressures from mining, grazing, ORV, real estate development and military uses over the last century. Now, utility scale renewable energy development presents the challenge of new land consumptive activities on a potentially unprecedented scale. Without careful planning, the surviving desert ecosystems may be further fragmented, degraded and lost.

The criteria below primarily address the siting of solar energy projects and would need to be further refined to address factors that are specific to the siting of wind and geothermal facilities. While the criteria listed below are not ranked, they are intended to inform planning processes and were designed to provide ecosystem level protection to the CDCA (including public, private and military lands) by giving preference to disturbed lands, steering development away from lands with high environmental values, and avoiding the deserts' undeveloped cores. They were developed with input from field scientists, land managers, and conservation professionals and fall into two categories: 1) areas to prioritize for siting and 2) high conflict areas. The criteria are intended to guide solar development to areas with comparatively low potential for conflict and controversy in an effort to help California meet its ambitious renewable energy goals in a timely manner.

Areas to Prioritize for Siting

- Lands that have been mechanically disturbed, i.e., locations that are degraded and disturbed by mechanical disturbance:
  - Lands that have been "type-converted" from native vegetation through 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).[1]
- Public lands of comparatively low resource value located adjacent to degraded and impacted private lands on the fringes of the CDCA:[2]
  - Allow for the expansion of renewable energy development onto private lands.
  - Private lands development offers tax benefits to local government.
- Brownfields:
  - Revitalize idle or underutilized industrialized sites.
  - Existing transmission capacity and infrastructure are typically in place.

- Locations adjacent to urbanized areas:[3]
    - 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;
    - Minimize workforce commute and associated greenhouse gas emissions.
- Locations that minimize the need to build new roads.
- Locations that could be served by existing substations.
- Areas proximate to sources of municipal wastewater for use in cleaning.
- Locations proximate to load centers.
- Locations adjacent to federally designated corridors with existing major transmission lines.[4]

High Conflict Areas

In an effort to flag areas that will generate significant controversy the environmental community has developed the following list of criteria for areas to avoid in siting renewable projects. These criteria are fairly broad. They are intended to minimize resource conflicts and thereby help California meet its ambitious renewable goals. The criteria are not intended to serve as a substitute for project specific review. They do not include the categories of lands within the California desert that are off limits to all development by statute or policy.[5]

- Locations that support sensitive biological resources, including: federally designated and proposed critical habitat; significant[6] populations of federal or state threatened and endangered species,[7] significant populations of sensitive, rare and special status species,[8] and rare or unique plant communities.[9]
- Areas of Critical Environmental Concern, Wildlife Habitat Management Areas, proposed HCP and NCCP Conservation Reserves.[10]
- Lands purchased for conservation including those conveyed to the BLM.[11]
- Landscape-level biological linkage areas required for the continued functioning of biological and ecological processes.[12]
- Proposed Wilderness Areas, proposed National Monuments, and Citizens' Wilderness Inventory Areas.[13]
- Wetlands and riparian areas, including the upland habitat and groundwater resources required to protect the integrity of seeps, springs, streams or wetlands.[14]
- National Historic Register eligible sites and other known cultural resources.
- Locations directly adjacent to National or State Park units.[15]

EXPLANATIONS

[1] Some of these lands may be currently abandoned from those prior activities, allowing some natural vegetation to be sparsely re-established. However, because the desert is slow to heal, these lands do not support the high level of ecological functioning that undisturbed natural lands do.

[2] Based on currently available data.

[3] Urbanized areas include desert communities that welcome local industrial development but do not include communities that are dependent on tourism for their economic survival.

[4] The term "federally designated corridors" does not include contingent corridors.

[5] Lands where development is prohibited by statute or policy include but are not limited to:

National Park Service units; designated Wilderness Areas; Wilderness Study Areas; BLM National Conservation Areas; National Recreation Areas; National Monuments; private preserves and reserves; Inventoried Roadless Areas on USFS lands; National Historic and National Scenic Trails; National Wild, Scenic and Recreational Rivers; HCP and NCCP lands precluded from development; conservation mitigation banks under conservation easements approved by the state Department of Fish and Game, U.S. Fish and Wildlife Service or Army Corps of Engineers a; California State Wetlands; California State Parks; Department of Fish and Game Wildlife Areas and Ecological Reserves; National Historic Register sites.

[6] Determining "significance" requires consideration of factors that include population size and characteristics, linkage, and feasibility of mitigation.

[7] Some listed species have no designated critical habitat or occupy habitat outside of designated critical habitat. Locations with significant occurrences of federal or state threatened and endangered species should be avoided even if these locations are outside of designated critical habitat or conservation areas in order to minimize take and provide connectivity between critical habitat units.

[8] Significant populations/occurrences of sensitive, rare and special status species including CNPS list 1B and list 2 plants, and federal or state agency species of concern.

[9] Rare plant communities/assemblages include those defined by the California Native Plant Society's Rare Plant Communities Initiative and by federal, state and county agencies.

[10] ACECs include Desert Tortoise Desert Wildlife Management Areas (DWMAs). The CDCA Plan has designated specific Wildlife Habitat Management Areas (HMAs) to conserve habitat for species such as the Mohave ground squirrel and bighorn sheep. Some of these designated areas are subject to development caps which apply to renewable energy projects (as well as other activities).

[11] These lands include compensation lands purchased for mitigation by other parties and transferred to the BLM and compensation lands purchased directly by the BLM.

[12] Landscape-level linkages provide connectivity between species populations, wildlife movement corridors, ecological process corridors (e.g., sand movement corridors), and climate change adaptation corridors. They also provide connections between protected ecological reserves such as National Park units and Wilderness Areas. The long-term viability of existing populations within such reserves may be dependent upon habitat, populations or processes that extend outside of their boundaries. While it is possible to describe current wildlife movement corridors, the problem of forecasting the future locations of such corridors is confounded by the lack of certainty inherent in global climate change. Hence the need to maintain broad, landscape-level connections. To maintain ecological functions and natural history values inherent in parks, wilderness and other biological reserves, trans-boundary ecological processes must be identified and protected. Specific and cumulative impacts that may threaten vital corridors and trans-boundary processes should be avoided.

[13] Proposed Wilderness Areas: lands proposed by a member of Congress to be set aside to preserve wilderness values. The proposal must be: 1) introduced as legislation, or 2) announced by a member of Congress with publicly available maps. Proposed National Monuments: areas proposed by the President or a member of Congress to protect objects of historic or scientific interest. The proposal must be: 1) introduced as legislation or 2) announced by a member of Congress with publicly available maps. Citizens' Wilderness Inventory Areas: lands that have been inventoried by citizens groups, conservationists, and agencies and found to have defined "wilderness characteristics." The proposal has been publicly announced.

[14] The extent of upland habitat that needs to be protected is sensitive to site-specific resources. For example: the NECO Amendment to the CDCA Plan protects streams within a 5-mile radius of Townsend big-eared bat maternity roosts; aquatic and riparian species may be highly sensitive to changes in groundwater levels.

[15] Adjacent: lying contiguous, adjoining or within 2 miles of park or state boundaries. (Note: lands more than 2 miles from a park boundary should be evaluated for importance from a landscape-level linkage perspective, as further defined in footnote 12).

Attachment 2

TWC DOANTED CATELLUS LANDS WITHIN PROPOSED BLM VARIANCE AREA

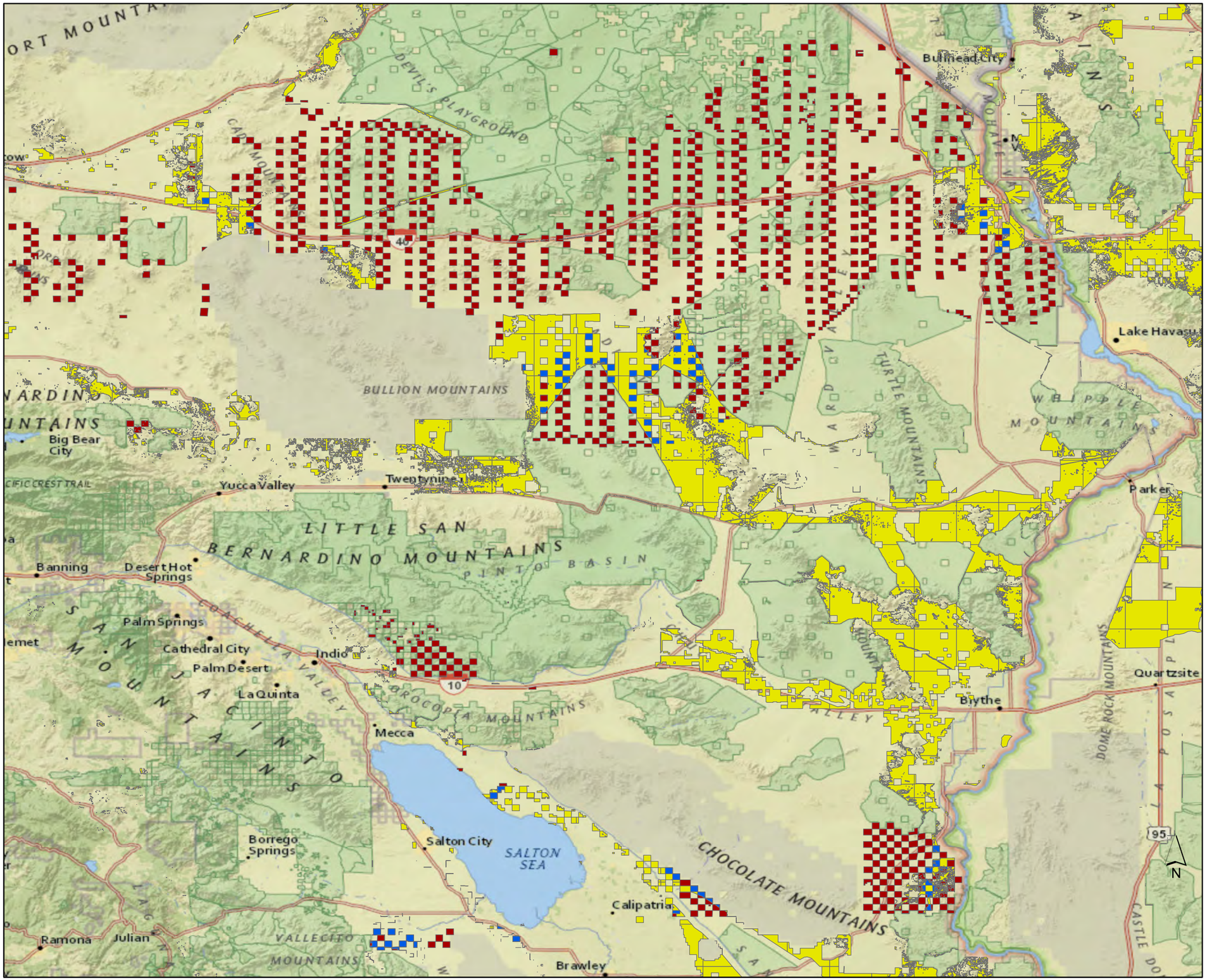
Catellus Lands

BLM Variance Area

1,354,559 acres in California

Catellus Lands Within BLM Variance Area

Just under 50,000 acres



Data Sources:
TWC GIS data created by TetraTech
Solar Energy Development PEIS - Information Center
ESRI ArcGIS Online (base map)

Data Retrieved: January 24, 2012

Date Saved: 1/27/2012 4:12:35 PM

DISCLAIMER: The Wildlands Conservancy (TWC) has made best efforts to ensure accuracy and quality in producing this map. However, the information on which it is based may have come from any of a variety of sources of varying degrees of accuracy beyond TWC's control. TWC cannot guarantee complete accuracy of this map and is not responsible for any unintended consequences derived from its use.

The Wildlands Conservancy
39611 Oak Glen Road, Bldg. 12
Oak Glen, California 92399
www.wildlandsconservancy.org

Path: C:\TWC_GIS\Maps\TWCProjects\DraftSolarPEIS\DraftSolarPEIS_VarianceArea_2.mxd

THE WHITE HOUSE

WASHINGTON

May 10, 2000

Mr. David Myers
Executive Director
The Wildlands Conservancy
3961 Oak Glen Road
Yucaipa, California 92399

Dear David:

I want to thank you and The Wildlands Conservancy for donating land to the United States for inclusion in Joshua Tree National Park. Your donation of more than 14,000 acres will help protect and preserve fragile desert resources and provide the American people with additional natural areas to treasure and enjoy.

I deeply appreciate your efforts to protect sensitive lands in the California Desert for the National Park Service and Bureau of Land Management. I assure you that my Administration will work to protect and manage the donated lands.

Please convey my appreciation to the Conservancy's Board of Directors, staff, donors, and supporters for this historic donation and all of your work to acquire additional lands for permanent protection.

Sincerely,

Bill Clinton

THE WHITE HOUSE

Office of the Vice President

For Immediate Release
Thursday, May 18, 2000

Contact:
(202) 456-7035

VICE PRESIDENT GORE ANNOUNCES NEW LAND PROTECTIONS IN CALIFORNIA DESERT

Calls on Congress to Pass Administration's Lands Legacy Initiative

Washington, DC -- Vice President Al Gore announced today that the Administration and a non-profit conservation organization have secured the money needed to complete a historic acquisition of pristine desert lands in Southern California. The Vice President also called on Congress to support the Administration's Lands Legacy initiative, which includes funding to protect nearby lands from future development.

Under the funding package announced today, the National Park Service (NPS) and the Bureau of Land Management (BLM) will acquire 180,605 acres within and adjacent to federally protected lands between Barstow and Needles. The land will be purchased from the Catellus Development Corporation with $5 million in federal funds secured by the Administration in the fiscal year 2000 budget and a $15 million donation from The Wildlands Conservancy.

"These stunning California Desert lands are being preserved for future generations through a true public-private team effort that could serve as a model in other areas," said Vice President Gore. "I commend the Wildlands Conservancy for its hard work and generosity. Protecting magnificent lands through this type of partnership is a central goal of our Lands Legacy initiative."

The purchase, to be completed within the next month, builds on the California Desert Protection Act signed by President Clinton in 1994. The Act, sponsored by Senator Dianne Feinstein, provided new or enhanced protection for 6.6 million acres, including the new Mojave National Preserve and 69 BLM wilderness areas.

Under an agreement in principle announced in December 1998, Catellus agreed to transfer to the federal government a total of 405,000 acres within and around the lands protected by the 1994 Act. Although the lands were valued at $61.6 million, Catellus agreed to a purchase price of $45 million. The first phase of the acquisition was completed earlier this year with $10 million in federal funds and $15 million from the Wildlands Conservancy. Today's announcement sets the stage for completing the second and final phase of the acquisition.

The areas to be protected include some of the most pristine and scenic desert lands in the world. Their features include cinder cones and lava flows, spectacular ranges of rock and

flowing sand dunes, vast valleys, intriguing cactus gardens and important habitat for the endangered Desert Tortoise. Approximately 83,000 acres will be acquired by the Park Service within the Mojave National Preserve, and the Bureau of Land Management will acquire approximately 97,000 acres, including lands in six designated wilderness areas – Clipper Mountains, Dead Mountains, Piute Mountains, Bristol Mountains, Old Woman Mountains and the Chemehuevi Mountains wilderness.

The Vice President commended Senator Feinstein for her leadership in securing the federal funds; The Wildlands Conservancy for its generous donation; and Catellus for selling the land at a substantially discounted price.

The Administration's proposed fiscal year 2001 budget included $15 million to complete the second phase of the acquisition. In light of The Wildlands Conservancy donation, the Administration yesterday proposed redirecting the proposed fiscal year 2001 funding to acquire other critical California desert lands on a willing-seller basis.

Unfortunately, Congress' budget failed to provide funding for the President's Lands Legacy Initiative. As a result, the House Interior Appropriations Subcommittee yesterday could only provide a small portion of needed land acquisition funding, with no funding to acquire critical desert lands. "I am deeply disappointed that Congress is slashing funds that would allow us to forge other partnerships like this one to protect critical lands across America," the Vice President said. "I urge Congress to provide permanent and full funding for Lands Legacy so we can provide states and communities the resources they need to protect their precious green spaces."

Today's acquisition completes the largest purchase of private land in California's history and the largest purchase of land from one seller by the Bureau of Land Management in its 50-year history. Once acquired, the lands would be open to public access for outdoor recreation including hiking, hunting and other permitted uses.

Additional details are available on The Wildlands Conservancy website: *www.wildlandsconservancy.org*

# # #

NEWS
U.S. DEPARTMENT OF THE INTERIOR

Office of the Secretary
For Immediate Release
Jan. 15, 1999

Contact: Tim Ahern, (202)-208-5089
Jan Bedrosian, (916)-978-4616
Holly Bundock, (415)-427-1320

***** MEDIA ADVISORY *****

Babbitt Will Kick Off Mojave Acquisition, Largest Land Deal in California History

Secretary of the Interior Bruce Babbitt will go to the Palm Springs area of Southern California on Wednesday, Jan. 20, to take title to the first 10,000 acres of private lands in the California Desert that will be acquired by the federal government as part of President Clinton's Lands Legacy Initiative.

Almost 500,000 acres of private lands will be acquired through an unprecedented match of private and public funds. The $36 million in federal money will come from the Land and Water Conservation Fund while $25.5 million in private funds is being contributed by The Wildlands Conservancy, a non-profit organization based in Oak Glen, Calif.

"This is an incredible opportunity to preserve a half-million acres of private land which has been interspersed among the new National Parks created by the California Desert Protection Act of 1994," Babbitt said.

On Jan. 20, The Wildlands Conservancy will give Babbitt title to some of the land it has already acquired in the area, including parcels in the San Gorgonio Wilderness, managed by the Bureau of Land Management, and Joshua Tree National Park.

Most of the land to be acquired is owned by the Catellus Development Corp., formerly the land-holding arm of the railroads. The rest of the land is owned by a variety of persons.

Who: Bruce Babbitt, Secretary of the Interior; and other federal officials and representatives of landowners and local and conservation interests

What: The federal government will take title to the first 10,000 acres of land, of a total of about 500,000 acres, that will be acquired in the California desert

When: 12:30 p.m. PST, Wednesday, Jan. 20, 1999

Where: Visitor center at the Santa Rosa Mountains National Scenic Area
51-500 California route 74, Palm Desert, California
(Map to event site is attached)

Contact: Tim Ahern, 202-208-5089 (Department of Interior)
Jan Bedrosian, 916-978-4614 or Carole Levitzky (Bureau of Land Management, California)
Holly Bundock, 415-427-1320 (National Park Service)
David Myers, 909-797-8507 (The Wildlands Conservancy)
John Bezzant, 213-473-3102 (Catellus Corp.)

-DOI-

IANNE FEINSTEIN
CALIFORNIA

COMMITTEE ON FOREIGN RELATIONS
COMMITTEE ON THE JUDICIARY
COMMITTEE ON RULES AND ADMINISTRATION

United States Senate

WASHINGTON, DC 20510-0504
(202) 224-3841

December 10, 1998

The Honorable William Jefferson Clinton
President of the United States
The White House
1600 Pennsylvania Avenue, N.W.
Washington, D.C. 20500

Dear Mr. President:

I am writing to urge you to include $36 million for land acquisition in the California Desert in your fiscal year 2000 budget request. This funding would allow completion of a landmark bid by the Wildlands Conservancy to permanently protect up to 475,000 acres of inholdings in the California Desert's national parks and wilderness areas. Protecting these areas is vital to preserving the unique character and public accessibility of the California Desert.

As you know, I fought to ensure passage of the Desert Protection Act, which you signed into law in 1994. The Desert Protection Act created two new national parks, a national preserve, and over 100 new wilderness areas. Unfortunately, our work is not done. Hundreds of thousands of acres of inholdings in the Desert remain unprotected. Many of these inholdings are in a "checkerboard" pattern, strategically located so that the land effectively blocks access to public lands. Owners of the inholdings, including the Catellus corporation, are making plans to develop their land. This would compromise the California Desert's fragile ecosystem and severely limit recreation opportunities on Federal land.

The Wildlands Conservancy has developed an innovative plan to purchase these inholdings and transfer them to Federal ownership, protecting them permanently from development. The Conservancy proposes to use a combination of Federal and private funds to acquire 475,000 acres of inholdings, mostly owned by Catellus. The Conservancy has pledged $16 million in private funds for the effort. I strongly believe that the Federal government should provide the remaining $36 million to complete this acquisition.

The National Park Service and U.S. Bureau of Land Management are already on record supporting the Wildlands Conservancy proposal. In an interview with the Los Angeles Times, Park Service Regional Director John Reynolds said, "The Wildlands Conservancy effort is ambitious and dramatic. It will be a great day for the Desert."

FRESNO OFFICE:
1130 "O" Street

LOS ANGELES OFFICE:
11111 Santa Monica Blvd.
Suite 915

SAN DIEGO OFFICE:
750 "B" Street
Suite 1030

SAN FRANCISCO OFFICE:
525 Market Street
Suite 3670

Moreover, in a letter dated November 24, U.S. Bureau of Land Management State Director Ed Hastey wrote, "Clearly, the reality of the situation in the California Desert with the checkerboard Catellus lands calls for a public/private partnership to leverage your contributions more effectively. The Wildlands Conservancy's pledge of more than $16 million in cash and land...to hopefully be matched with appropriations from the Federal Land and Water Conservation Fund, will give the California Desert the national attention this region deserves. BLM-California will do all it can to support your innovative and bold initiative."

Attached are two letters from The Wildlands Conservancy that explain this proposal in more detail. The Wildlands Conservancy land acquisition proposal will protect endangered species habitat, keep the Desert ecosystem intact, and improve recreation opportunities for millions of Americans. As a member of the Interior Appropriations Subcommittee, I intend to make the Wildlands Conservancy acquisition one of my top environmental priorities in the next Congress. I do hope that I can count on your support and assistance. Please take an important first step by including $36 million for the acquisition in your budget request.

Thank you so much for your attention to this important matter. Please let me know what you decide. If you have any questions or require further information, please do not hesitate to get in touch, or have your staff contact Kathy Reich in my office at (202) 224-3841.

May I take this opportunity to wish you and your family a happy and healthy holiday season.

With warmest personal regards.

Sincerely yours,

Dianne Feinstein
United States Senator

DF:kdr

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Washington, D.C. 20240
http://www.blm.gov

OCT 3 0 2000

David Myers
Wildlands Conservancy
39611 Oak Glen Road
Yucaipa, CA 92399

Dear Mr. Myers:

It is truly an honor to present you, representing the board of The Wildlands Conservancy, the Bureau of Land Management's (BLM) national Legacy of the Land Award.

The Conservancy, a relatively young organization, has very quickly earned a national reputation for protecting magnificent lands through unprecedented public-private partnerships.

Most notable is the recent completion of the year-and-half-long effort to protect more than 405,000 acres of checkerboard railroad lands, formerly owned by Catellus Corporation, in what Vice President Al Gore called "an historic acquisition of pristine lands in Southern California."

Through the Conservancy's efforts, the BLM and the National Park Service now own critical inholdings in what the Vice President called "some of the most pristine and scenic desert lands in the world." In addition to scenic lands in the Park Service's Mojave National Preserve, BLM was also able to acquire 322,500 acres in 10 designated Wilderness Areas, almost a dozen sensitive wildlife habitat areas, and several key recreational access areas.

These areas are part of spectacular mountain ranges, with unique geological formations, including mountainous landscapes, sweeping bajadas and flowing sand dunes. They contain habitat for a number of threatened and endangered species, including bighorn sheep and desert tortoise. Without the Conservancy's innovation and leadership, these lands could have been developed or sold into private ownership, which would have had far-reaching implications to the surrounding wilderness and wildlife habitat areas.

While this is a tremendous accomplishment, California's diverse but threatened landscapes need further efforts from BLM and the Conservancy. BLM looks forward to a long and productive relationship with you and your talented and generous board. This award is in recognition of both the accomplishment and the future legacy to come.

Sincerely,

Tom A. Fry
Director
Bureau of Land Management

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
California State Office
2800 Cottage Way, Suite W1834
Sacramento, CA 95825-1886
www.ca.blm.gov

AUG 9 2000

David Myers
Executive Director
The Wildlands Conservancy
39611 Oak Glen Road
Yucaipa, CA 92399

Dear David:

On behalf the Bureau of Land Management, and especially all of us here in California, I would like to officially thank you, the Board of Directors of The Wildlands Conservancy, and your many generous donors for the tremendous achievement of completing the acquisition of Catellus lands in the California Desert recently.

It is an incredible success story and demonstrates the "big picture" vision of the Conservancy, which you so ably lead. At every obstacle, a path to the final goal was found. As a consequence, the public now enjoys ownership of the 405,000 acres the conservancy helped BLM and the Park Service acquire. Present and future generations will benefit greatly, as will the land itself and its wildlife resources.

Your ability to develop alliances and pool resources was truly the essence of what made this achievement possible. BLM will take very good care of these newest public lands and we look forward to a long-term relationship with you and the Conservancy.

Sincerely,

Al Wright

Al Wright
Acting State Director

DAVID -
MY UNQUALIFIED
THANKS FROM US
AT BLM AND
THE PUBLIC -
AL

NEWS RELEASE

March 10, 2010

Conservancy Identifies Available Land for California to Increase Renewable Energy Goals

Contact: David Myers, Executive Director, The Wildlands Conservancy
April Sall, Conservation Director, The Wildlands Conservancy
Joan Taylor, Chair, Sierra Club Desert Energy Committee

The Wildlands Conservancy (TWC) inventoried over 225,000 acres of primarily disturbed and degraded lands along major transmission corridors on which the owners support renewable energy development. This is almost twice the 128,000 acres the California Energy Commission said is needed for California to meet its 2020 goal of being 33% reliant on clean renewable solar energy. Elden Hughes, honorary vice-president of the Sierra Club, stated, "The Wildlands Conservancy's inventory will take pressure off destroying our pristine Bureau of Land Management (BLM) lands." Joan Taylor, Chair of the Sierra Club's Desert Energy Committee, remarked, "We have been saying all along that there are enough impacted lands to meet our state renewable energy goals. Now we have an inventory that proves it."

TWC became involved in finding alternative locations for solar projects after lands TWC purchased for conservation were subsequently opened for solar applications by the Bush Administration. When TWC donated these lands, representing the largest land gift in American history, President Bill Clinton, Vice President Al Gore, and Interior Secretary Bruce Babbitt promised the lands permanent protection. In December 2009 Senator Dianne Feinstein introduced a bill to create the 941,000 acre Mojave Trails National Monument to ratify this federal protection of what Gore called "some of the most pristine and scenic desert lands in the world."

For eighteen months, TWC's staff has been meeting with land owners, renewable energy firms, and power companies to quantify acreages available for renewable energy. During the inventory TWC staff contacted over 57 landowners and renewable energy firms that have solar and wind project proposals on private land. TWC staff also met with three water and utility agencies that have enough impacted lands available or proposed for solar development to reach California's 2020 goal of using 33% renewable energy.

1. In 2009, TWC hired a consulting firm to evaluate the solar potential of the Westlands Water District (WWD). WWD has 90,000 acres of farmland available for the placement of solar projects. In a meeting with Tom Birmingham, WWD's General Manager, TWC lent support for WWD's willingness to fallow land it bought from farmers for solar development to create improved water reliability for the remaining 500,000 acres in the water district. An additional 17,000 acres

in the WWD owned by farmers is proposed for solar development. WWD land is along existing transmission corridors from Los Angeles to Sacramento, next to Interstate 5 in California's Central Valley, which has substantial solar insulation.

2. Today at TWC's Oak Glen Preserve, the Los Angeles Department of Water and Power announced the formal abandonment of a power line proposal through two of TWC's preserves. LADWP will pursue its renewable energy goals on 32,000 acres of disturbed lands on Owens Dry Lake where the City has existing transmission corridors. April Sall, Conservation Director of TWC noted, "The Wildlands Conservancy has long supported solar on a portion of Owens Dry Lake which has a substantial restoration element. This project takes pressure off imperiled species that would be severely impacted by projects on pristine Bureau of Land Management lands."

3. Jesse Montaño, Assistant General Manager of the Imperial Irrigation District, said there are 4,000 megawatts of renewable energy projects in development within the District. The 3,000 megawatts of solar and 1,000 megawatts of geothermal represent one fifth of California's 2020 goal of 20,000 megawatts.

TWC inventoried over 15,000 acres of abandoned alfalfa farms in the Antelope Valley region available for solar. This includes the 4,600-acre Arciero Ranch that is under option for solar development to John Musick. Mr. Musick, representing Arciero Ranch, noted, "This is the future of solar in the West. We must repurpose these abandoned lands throughout America rather than destroy our public land treasures." The Arciero Ranch abuts the Beacon Solar LLC/NextEra Project on an adjacent 3,500 acres of abandoned alfalfa fields. [Mr. Musick can be reached at (970) 925-1900.] TWC has broadly supported these Antelope Valley projects on degraded lands and David Myers, Executive Director of TWC, was a guest speaker at the dedication of California's only utility scale power tower built by E-Solar in Lancaster.

Lorelei Oviatt, Kern County's Special Projects Division Chief, stated, "Clearly, there is enough impacted private land out there to take care of our renewable energy needs. Private land projects may look small when evaluated individually, but they add up. In Kern County there are 16 projects under application totaling over 20,000 acres and 2,200 megawatts." TWC is offering up to 30,000 acres of its Kern County habitat preserves as mitigation to help fast-track these renewable energy projects.

San Bernardino County Supervisor Neil Derry observed, "These private land projects benefit county property tax rolls and don't require taking hundreds of thousands of acres off the tax roll for mitigation because they substantially don't have endangered species issues. They create much needed jobs closer to population centers without the county having to expand infrastructure to remote locations. They're a win-win for the county."

During the inventory, TWC visited several of Edison Mission Energy's private land utility scale solar project sites that were recently sold to First Solar. TWC has broadly

backed the former Edison Mission Energy Projects that are primarily on disturbed agricultural lands and has offered First Solar its support for the former Edison projects. TWC salutes Edison International, Southern California's largest Public Utility, for their support for the Feinstein Desert Protection Act of 2010.

Thomas Dinwoodie, the Founder and Chief Technological Officer of Sun Power, one of the world's largest photovoltaic manufacturers, after meeting with TWC staff wrote: "I greatly admire your work. By pro-actively identifying the right lands for development, you will accelerate our needed push toward solar, and short-circuit potentially years of wasted time, effort and good will between the solar and environmental communities. Your work is a model for other states and countries, and has historic dimension."

Myers summarizes The Wildlands Conservancy's inventory: "Landscape preservation and solar development debate has been mischaracterized as green versus green. Now we have reduced that conflict to the broad-based environmental support for placing projects on disturbed lands versus the lack of support for placing projects on pristine public lands, especially those donated for permanent preservation." Thirteen mainstream environmental groups developed "Renewable Energy Siting Criteria" that support placing projects on disturbed lands (copy enclosed).

TWC uses solar on previously disturbed lands on its desert and central valley preserves and has broadly supported properly sited solar and wind projects. TWC became involved in renewable energy public policy to prevent lands it donated to the Department of the Interior for conservation from becoming industrialized. "It would be a tragedy if the 100-year American tradition of land gift philanthropy that has made Acadia, Grand Tetons and Redwoods National Parks what they are today, died in the desert sands" said Myers.

TWC believes more focus should be kept on distributed generation of roof top photovoltaic energy. A 2005 study commissioned by the California Energy Commission titled "**California Rooftop Photovoltaic (PV) Resource Assessment and Growth Potential by County**" showed that commercial and residential rooftops had the technical potential to generate 67,889 megawatts of electricity. Currently, California peaks around 65,000 megawatts on the hottest of summer days.

Thank you for your comment, Michael Painter.

The comment tracking number that has been assigned to your comment is SEDDsupp20165.

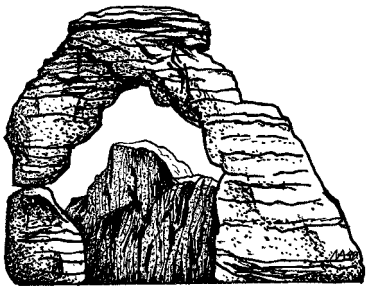
Comment Date: January 27, 2012 19:14:21PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20165

First Name: Michael
Middle Initial: J
Last Name: Painter
Organization: Californians for Western Wilderness
Address: P.O. Box 210474
Address 2:
Address 3:
City: San Francisco
State: CA
Zip: 941210474
Country: USA
Privacy Preference: Don't withhold name or address from public record
Attachment: Solar_SDEIS_012712.pdf

Comment Submitted:

Californians for Western Wilderness

A project of Resource Renewal Institute



Coordinator
Michael J. Painter
(415) 752-3911

P.O. Box 210474
San Francisco
CA 94121-0474

e-mail:
info@caluwild.org

January 27, 2012

Ms. Shannon Stewart
Solar Energy Draft PEIS
Argonne National Laboratory
9700 S. Cass Avenue – EVS/240
Argonne, IL 60439

RE: Comments on Supplement to the Draft Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States

Dear Ms. Stewart:

I am writing on behalf of the more than 790 members and supporters of Californians for Western Wilderness (CalUWild), an unincorporated citizens organization dedicated to encouraging and facilitating citizen participation in legislative and administrative actions affecting wilderness and other public lands in the West. Our members use and enjoy the public lands in Utah and all over the West.

CalUWild wishes to support and endorse the California-specific comments submitted by The Wilderness Society, Natural Resources Defense Council, California Wilderness Coalition and other groups for the Solar Energy Development SDEIS. We specifically support the discussion of wilderness and areas that need to be exempted from consideration for development.

We do not endorse the newly-introduced concept of variances and disassociate ourselves from that portion of their comments, with this caveat: To the extent that the variance concept might be adopted, we support the recommendations made in those comments for exclusions of areas with wilderness character, and other environmentally sensitive areas.

We also support and endorse the comments submitted by The Wilderness Society, Natural Resources Defense Council, Western Environmental Law Center, Sierra Club, and other groups on the general aspects of the Solar Energy Development SDEIS. Again, we do not endorse the variance concept, but as above, to the extent that the variance concept is adopted, we support the recommendations for clarification contained in those comments.

Having said these things, we also wish to re-state our conviction that the federal government and BLM are approaching the topic of renewable energy in the wrong order. The government should be embarking on a concerted effort to develop energy conservation and demand reduction programs. The cheapest kilowatt is the one not used. Secondly, the government should be encouraging the development of rooftop solar and other local, close-to-the-end-use-point technologies. The less distance power needs to be transmitted from source to use the cheaper and the less lost to inefficiencies. Only after these two factors are considered should large-scale industrial facilities be planned. And even then, our public lands—especially untouched lands in the desert—should be the last resort.

The original DEIS and this Supplement should use this hierarchy as its starting point for analyzing and developing strategies for solar power in this country.

Too many people think of deserts as wastelands, but this attitude needs to change. They are unique ecosystems with their own huge variety of life systems. The fact that there is not a large amount of human habitation and other development should not turn them into energy sacrifice zones.

Thank you for the opportunity to comment. Please inform us of your decision in this matter and please also inform us of further opportunities to be involved in your public decision-making processes.

Sincerely,

Michael J. Painter
Coordinator

Thank you for your comment, Kevin Kingma.

The comment tracking number that has been assigned to your comment is SEDDsupp20166.

Comment Date: January 27, 2012 19:29:10PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20166

First Name: Kevin
Middle Initial: E
Last Name: Kingma
Organization:
Address: 2367 Alva Ave.
Address 2:
Address 3:
City: El Cerrito
State:
Zip:
Country:
Privacy Preference: Don't withhold name or address from public record
Attachment:

Comment Submitted:

To be brief, please redo the PEIS. The current PEIS fails to consider/offer the option of distributed generation (roof top solar). It also fails to consider many sites identified by the EPA as disturbed land that is suitable for alternative energy projects. NEPA requires that all options be considered. The fast track process short cuts normal environmental review procedures to the degree that it no longer allows for environmental protection of desert public lands. I doubt the legality of the Secretary of the Interior's fast track approval of large scale projects on undisturbed desert lands despite public disapproval, using the statement that overiding national interest takes precedence. I do not think the SOI has the authority to make that decision.

I fully understand carbon caused global climate change and support alternative energy. If you need to learn how to accomplish a successful, legal, efficient implementation of alternative energy -- just copy what has been done in a country like Germany.

This process has been wrong from the start, with no limits placed on the location of alternative energy projects. The PEIS does very little to fix this.

Thank you for your comment, Debra Thompson.

The comment tracking number that has been assigned to your comment is SEDDsupp20167.

Comment Date: January 27, 2012 19:29:43PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20167

First Name: Debra
Middle Initial: L
Last Name: Thompson
Organization:
Address: 7665 Palomar Avenue
Address 2:
Address 3:
City: Yucca Valley
State: CA
Zip: 92284
Country: USA
Privacy Preference: Don't withhold name or address from public record
Attachment:

Comment Submitted:

I am writing to request that the deadline for submitting comments be extended six months. The comment period must be extended due to the significant revisions made. To maintain the current deadline would defeat the democratic process, show malicious intent on the part of the Solar Development Program and undue influence from big business. (Fancy way of saying government corruption) Meaningful public review of this 500+ page document will require at least an additional three preferably six additional months.

Thank you for your comment, Jamie Hall.

The comment tracking number that has been assigned to your comment is SEDDsupp20168.

Comment Date: January 27, 2012 19:37:03PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20168

First Name: Jamie
Middle Initial: A
Last Name: Hall
Organization: The California Desert Coalition
Address: P.O. Box 1508
Address 2:
Address 3:
City: Yucca Valley
State: CA
Zip: 92286
Country: USA
Privacy Preference: Don't withhold name or address from public record
Attachment: SolarPEISsuppdraftcommentsCDC_Final.docx

Comment Submitted:

California Desert Coalition

P. O. Box 1508

Yucca Valley, CA 92286

www.cadesertco.org

January 27th, 2012

Draft Solar Energy Programmatic EIS
Argonne National Laboratory
9700 S. Cass Avenue - EVS/240
Argonne, IL 60439

RE: Comments on the Supplement to the Draft Solar Energy Programmatic EIS *(hard copy mailed to above address and electronic version submitted to online website)*

Dear BLM and DOE:

The California Desert Coalition (CDC) provided scoping comments for the Solar Energy Development Programmatic EIS in September 2009 and also in April of 2011 and is pleased to provide comments on the Supplement to the Draft Solar Energy Programmatic EIS.

CDC is a citizens' advocacy group formed in 2007 to oppose the Los Angeles Department of Water & Power's (LADWP's) preferred alignment for its Green Path North transmission line project. Although the LADWP withdrew from Bureau of Land Management (BLM) its application for the Green Path North transmission line, CDC on behalf of the public continues to participate in the monitoring of renewable energy development in the California desert.

The members of the California Desert Coalition write to you in opposition to the BLM's preferred alternative (modified solar energy development program alternative), as outlined in the supplement document to the Draft Solar Energy PEIS. Under this alternative, a 'variance process' of designating lands outside the Solar Energy Zones (SEZ's) to potentially accommodate additional utility-scale solar development is proposed. We completely oppose the proposed variance process, as it would open up a vast amount of additional acres of public land for project-by-project development, which we believe to be unnecessary for several reasons:

- The variance process is unplanned and unmanaged. It is industry driven (projects would proceed in a piecemeal fashion throughout the desert) whereas development inside the SEZ's is agency-driven.
- Development is likely to occur on these sensitive, pristine 'variance' lands, rich in natural resources. These lands have had little to no environmental review.
- The proposal to identify additional SEZ's either by the BLM or the statewide effort's Desert Renewable Energy Conservation Plan (DRECP), will withdraw the need for variance lands (i.e. West Mojave, Chocolate Mountains and Imperial Valley).
- Lands purchased with private monies and donated to the federal government for conservation (i.e. former Catellus lands) need to be fully excluded from the variance process. As it stands currently, they are mapped as lands within the proposed variance zones.
- There are several wildlife corridors that exist in areas where variance is proposed. For instance there is a known bighorn sheep corridor between the Old Woman Mountains, Cadiz Dunes, and

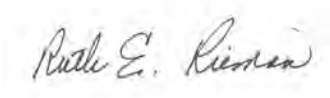
Sheephole Mountains Wilderness that will be fragmented and disrupted should lands become developed here. The act of designating variance lands (not only here, but throughout the California Desert) jeopardizes the investment the BLM has made in further identifying the need for such wildlife corridors (i.e. Epps, C.W., J.D. Wehausen, V.C. Bleich, S.G. Torres, and J.S. Brashares. 2007. Optimizing dispersal and corridor models using landscape genetics. Journal of Applied Ecology 44:714-724. (Epps et al. 2007).

Another element of the supplement that we wish to see improved and further managed is the management of visual resources. Currently in the supplement, lands with visual resources are categorized into classes (VRM Class I and II) and are stated to be excluded from solar energy development, but are still mapped in both the SEZ's (i.e. Riverside East) and proposed variance zones. They need to be fully excluded from the PEIS (i.e. they should not be developed) and further managed. Until then, the PEIS should follow the rules and regulations that are currently in place.

We strongly urge you to reconsider the adoption of the variance process (BLM's Modified Solar Energy Program Alternative) and continue with study of the existing and proposed SEZ's (Modified SEZ alternative) to develop renewable energy in a responsible manner on our public lands.

Finally, we commend the work and coordination between the BLM and statewide planning effort on the DRECP, and support continued collaboration.

Sincerely,



Ruth Rieman, Vice Chair of the California Desert Coalition

Thank you for your comment, Greg Suba.

The comment tracking number that has been assigned to your comment is SEDDsupp20169.

Comment Date: January 27, 2012 19:49:08PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20169

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Attachment: CNPS_SEIScomments_012712.pdf

Comment Submitted:

CALIFORNIA
NATIVE PLANT SOCIETY

January 27, 2012

Shannon Stewart
Solar Energy Draft PEIS
Argonne National Laboratory
9700 S. Cass Avenue – EVS/240
Argonne, IL 60439
Submitted via Email

RE: Comments on Supplement to the Draft Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States

Dear Ms. Stewart,

The California Native Plant Society (CNPS) submits the following comments and recommendations regarding the U.S. Bureau of Land Management's (the BLM's) Supplement to the Draft Solar Programmatic Environmental Impact Statement (SEIS) document. These comments are in addition to the comments we provided on May 2, 2011 for the original Draft Solar Programmatic EIS. We incorporate those additional comments herein by reference.

CNPS is a non-profit organization working to protect California's native plant heritage and preserve it for future generations. Our nearly 10,000 members are professionals and volunteers who work to promote native plant conservation through 33 chapters statewide.

CNPS supports renewable energy generation via large-array utility scale projects only when sited on already-disturbed lands, e.g., brownfields and fallow, mechanically disturbed agricultural lands. We oppose the siting of large-array renewable energy projects sited in functionally intact areas on public trust lands, both in the desert and elsewhere.

The Solar PEIS will govern solar development on public lands for at least 20 years. Therefore, development of large-scale projects must be sited on places with the fewest impacts on intact plant and animal habitats, natural resources, and endangered species, and we are encouraged that modifications and additions to the Solar PEIS that the BLM has made during the Supplemental phase will help minimize such impacts.

I. CNPS supports the Modified SEZ Program Alternative and opposes the variance process included in the Modified Development Program Alternative

The SEIS Modified SEZ Program Alternative will identify sufficient acres of public lands needed to meet our solar energy portfolio targets, especially when the number and location of these acres are considered within the context of additional solar energy development areas to be identified through the Desert Renewable Energy Conservation Plan (DRECP) process in

California, the ability to establish new, additional SEZs through the SEIS, and the contributions of distributed energy generation (DG) to federal and state energy portfolios. CNPS supports and strongly recommends the BLM to adopt the Modified SEZ Program Alternative under the solar SEIS.

The BLM's current preferred alternative, the Modified Development Program Alternative, designates Solar Energy Zones (SEZs), while including an additional variance process outlined in the Supplement. The variance process is a new addition to the solar program that CNPS neither recommended nor supported in our comments on the Draft PEIS. CNPS does not support the addition of this new process as part of the Supplement to the Draft PEIS. We do not agree with the BLM's rationale for including the variance option, provided in the SEIS, as explained below.

• *In order to accommodate the flexibility described in the BLM's program objectives, the modified program alternative allows for responsible utility-scale solar development outside of SEZs.* (p. 2-33, lines 3-5)
The guidelines for developing additional SEZ's outlined in the SEIS provide the flexibility described in the BLM's program objectives, and no additional flexibility (variance option) is necessary or beneficial to public land protection under this program.

• *The variance process provides an opportunity for developers to propose applications outside of identified SEZs and complements the directed development approach in the modified program alternative.* (SEIS p. 2-33, lines 28-30)
To the contrary, the variance process *undermines* the directed development approach in the modified program alternative. The directed development approach seeks to concentrate solar development in areas identified as low-impact and facilitate the planning and development of appurtenant transmission to and from those areas. The variance process would provide a means to continue the current scattershot approach to siting on public lands, and potentially produce growth-inducing, "leap-frog" projects requiring transmission and generation-tie lines in ecologically inappropriate areas.

• *Variances may be needed in the near-term because the lands identified as SEZs might be insufficient to accommodate demand for utility-scale solar development.* (SEIS p. 2-33, lines 30-31)
This is precisely why the SEIS includes extensive guidelines for development of *new, additional* SEZs, which are to be 5,000 acres or greater, and reviewed on a 5-year cycle. The acreage represented by the SEZ's outlined in the SEIS, in addition to the development focus areas to be assigned through the DRECP process will provide enough developable acreage for utility-scale solar. Any additional siting acreage on public lands exceeds BLM's own analysis of what is truly needed and cannot be justified under the Reasonably Foreseeable Development Scenario.

Opening this additional acreage won't create a significant change from the current scattered, fast-tracked siting approach. CNPS strongly feels that this approach will involve higher resource conflicts, more public opposition, continued uncertainty both for wildlife managers and developers, and more litigation.

There should be *no* projects developed outside these zones and if the need should arise, the Modified SEZ Program Alternative already allows for designating additional zones in areas identified as degraded and with lower impacts in the future. CNPS strongly urges BLM to choose the Modified SEZ Program Alternative, which would provide a program for developing solar energy while still protecting our public lands.

• *In addition, there might be market, technological, or site-specific factors that make a project appropriate in a non-SEZ area.* (SEIS p. 2-33, lines 31-33)
Market and technological factors that "might" exist in future years will pertain also to distributed generation (DG) markets and technologies which, for myriad reasons, provide a more secure, environmentally friendly, and socially equitable solar energy generation paradigm than the current focus on utility-scale generation and associated transmission requirements. The ability for distributed energy generation to meet our energy goals must be considered under the Reasonably Foreseeable Development Scenario, and DG's contributions to future energy portfolios represent conditions that must far-outweigh proposals to site utility-scale facilities on additional public lands beyond those identified in SEZs.

II. The BLM must prioritize CA SEZ areas for additional data/analysis collection (via Action Plans)

The BLM notes (SEIS p. 2-41) that it will "prioritize the collection of additional data and analysis (listed in the Action Plans in Appendix C of the SEIS) in those SEZs that are most likely to be developed in the near future." Along with others in the conservation community, we request that the BLM prioritize the Riverside East SEZ for such action. As the agency is well aware, there are additional projects presently being considered in this SEZ (see Appendix A of the SEIS). The timely completion of additional analysis for this SEZ will facilitate development in the locations that are best suited for such intensive use in the fragile desert.

We also believe that an initial regional mitigation plan should be developed for the Riverside East SEZ and presented in the Final PEIS. Due to the number of SEZ-specific issues that need to be mitigated, early development of a regional mitigation plan for the Riverside East SEZ will ensure that projects are processed in a timely manner.

III. The BLM must revise pending CA Project applications

CNPS has reviewed the projects for California that are listed in Appendix A of the SEIS. We believe the list for California needs to be revised.

Specifically, we question why Broadwell Lake is still on BLM's list of first in line projects. The proposed project is within the proposed Mojave Trails National Monument, which is a proposed exclusion area. We believe this project should be rejected by BLM and removed from the list.

We also believe that the BLM should not approve projects in the California desert that are inconsistent with the developing conservation strategy within the DRECP planning area.

IV. The Final PEIS must include a complete Cumulative Impacts Analysis

We are very concerned that there has been no further analysis of cumulative impacts in the SEIS for past, present and reasonably foreseeable development within the Riverside East and Imperial East SEZs. The BLM intends to defer these analyses to the Final PEIS and we expect to see a complete analysis of cumulative impacts in the Final PEIS. We append to this letter the botanical information related to the Riverside East and Imperial East SEZs which we provided in our May 2011 comment letter, in hopes it can assist the BLM with the cumulative impacts analysis (note: rare plant occurrences recorded in the California Natural Diversity Database (CNDDB) are updated monthly. We will gladly provide up-to-date lists upon request).

V. Adaptive Management & Monitoring Plans in the Final PEIS will require NEPA analysis

Because the adaptive management and monitoring plans will not be prepared until the Final PEIS, additional NEPA analysis in that document will be required to evaluate their effect on expected impacts. Additionally, changes to design features and additional analysis of SEZs, including natural and cultural resources, visual impacts, water use and transmission, are also deferred to the Final PEIS. Consequently, the agency will need to provide an opportunity for meaningful public comment on this analysis and respond to such comments in order to comply with NEPA.

The California Native Plant Society appreciates the opportunity to provide these comments regarding the Supplemental to the Draft Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States. We will continue to provide information that can help the BLM develop the best possible environmental assessment in a timely manner. We share a common goal to provide effective, long-term protective policies for the preservation of biological resources in the California Desert, while addressing the permitting process for renewable energy projects.

Sincerely,

Greg Suba

Greg Suba
Conservation Program Director
California Native Plant Society

ATTACHMENT A

California SEZ-specific comments - (This information was originally provided in our comment letter on the Draft PEIS, dated May 2, 2011.)

Based on botanical information from recent reconnaissance level surveys, we provide the following descriptions of plant communities and our related concerns regarding California SEZs. We also provide a list of special-status plants and plant communities found in the proposed CA SEZs and surrounding areas.

Imperial East SEZ

Description of SEZ vegetation
The majority of the habitat along Hwy 8 is stabilized desert dunes of *Larrea tridentata* (creosote). The area is marked by large plants with hummocks of sand accumulated around the shrubs (coppice dunes), punctuated by scattered, and very large coppice dunes of *Prosopis glandulosa* (mesquite) over 3 meters high, with many animal burrows visible.

The site occurs in a topographic low where very few washes are present. The occurrences of mesquite are a good indication of groundwater dependent vegetation. Groundwater pumping even for a dry-cooled facility could have significant negative affects to GDE communities within and around this SEZ. The potential impacts of groundwater pumping to GDE communities needs to be addressed in the Cumulative Impacts analysis for this SEZ.

The creosote was tall and vigorous in the western half of the SEZ but looked relatively distressed in the eastern half. The reason(s) for this was not obvious. These eastern creosote stands did not exhibit the depauperate, drought-stressed characteristics sometimes seen in stands deprived of surface flow by canals, dikes, and highways. The plants were predominantly senescent, and over 75% dead in many eastern areas of the SEZ, and in the East Mesa BLM ACEC to the north.

In the eastern and southern portion of the SEZ, especially in the relatively more disturbed areas between Hwy 98 and the canal, the creosote is co-dominated by *Ericameria linearifolia*, with associated *Ambrosia dumosa,* and *Atriplex polycarpa*.

Farther to the west along Hwy 98, the vegetation is dominated by an association of creosote and *Ephedra californica* (ephedra) for several miles. *Ericameria linearifolia* (narrow leafed goldenbush), *Ambrosia dumosa* (white bursage, burrowbush), and *Atriplex polycarpa* (allscale) are also present but the stands were defined predominantly by creosote and ephedra. These observed stands of creosote, ephedra, and narrow leafed goldenbush may be new vegetation associations not currently documented based on available vegetation data (NECO vegetation mapping did not collect data as far south as this SEZ area), and underscore the need for vegetation surveys in this area.

Near the western boundary of the SEZ along Hwy 98, what at first would appear to be canal leaks of tamarisk on aerial photos are actually vast stands of mesquite and *Pluchea sericea*

(arrow weed), which occur mostly in separate stands. The BLM Lake Cahuilla ACEC to the west of the Imperial East SEZ, is occupied largely by the mesquite and *Pluchea* communities. The majority of the mesquite is just off-site of the Imperial East SEZ, however it is important to note these occurrences because even dry-cooled solar projects can use a large volume of water during their construction phase. If projects were to rely on groundwater to supplement irrigation water, or as their sole source of water, their impacts to groundwater dependent vegetation could be significant. The zone of influence of groundwater pumping can extend 1 to 2 miles out from the wells and the cumulative effect on nearby groundwater dependent plant communities would most likely be significant.

The Imperial East SEZ vegetation is underlain by fine to medium sand. The location and soil type are definitely potential conditions for *Astragalus magdalenae peirsonii* (Peirson's milkvetch), *Croton wigginsii* (Wiggins' croton), and other dunes rare plant species, as well as an indication of flat-tailed horned lizard habitat.

There is also potential for a number of rare invertebrate species to occur, including the Riverside cuckoo wasp (from the Wiley's Well area), recently discovered at the Algodones Dunes.

Riverside East SEZ

We believe the area of the Riverside East SEZ should be reduced to avoid impacts to rare plants and other sensitive resources. In early February, 2011, CNPS Vegetation Program staff conducted a field-based workshop around Palen Lake near Desert Center to identify, survey, and map rare vegetation in this area of the Riverside East SEZ.

Palen Lake is an alkali playa surrounded by series of active, semi-stabilized, and stabilized dunes and areas of desert pavement. It includes a myriad of vegetation patterns including creosote shrublands, mesquite bosques, desert wash woodlands, saltbush scrubs, and groundwater-dependent sink scrubs in addition to the dune and desert pavement habitats.

During the workshop, participants sampled 15 vegetation stands and made several additional observation points. Rare communities documented included *Parkinsonia florida* (blue palo verde), *Olneya tesota* (ironwood), *Propopis glandulosa* (mesquite), and *Psorothamnus spinosus* (smoke tree) woodland alliances; and *Suaeda moquinii* shrubland (bush seepweed) alliance.

As with the other proposed California SEZs, assessing impacts to groundwater dependent communities within the Riverside East SEZ, particularly around dry lakes and playas, will be essential in order to conserve important natural communities.

Rare Plants, Sensitive Plant Species, Plant Species of Concern, and Vegetation Types in Proposed California SEZs

I. Plant Species - List of Rare Plants known to occur within and around the BLM Solar Energy Zones (SEZ) in Califiornia. These lists were derived from a search of the California Natural Diversity Database (CNDDB), February 2011.

Riverside East SEZ

Scientific Name	Common name	*State*	*Fed*	*G-rank*	*S-rank*	CRPR
Astragalus insularis var. harwoodii	Harwood's milk-vetch	-	-	G5T3	S2.2?	2.2
Castela emoryi	Emory's crucifixion-thorn	-	-	G2G3	S2S3	2.3
Colubrina californica	Las Animas colubrine	-	-	G4	S2S3.3	2.3
Coryphantha alversonii	Alverson's foxtail cactus	-	-	G3	S3.2	4.3
Ditaxis serrata var. californica	California ditaxis	-	-	G5T2T3	S2	3.2
Eriastrum harwoodii	Harwood's eriastrum	-	-	G2	S2	1B.2
Koeberlinia spinosa ssp. tenuispina	Slender-spined all-thorn	-	-	G4T4	S2.2	2.2
Mentzelia puberula	Darlington's blazing star	-	-	G4	S2	2.2
Wislizenia refracta ssp. palmeri	Palmer's jackass clover	-	-	G5T2T4	S2?	2.2

Imperial East SEZ
Plants known to occur within 10 kilometers of the SEZ

Scientific Name	Common name	*State*	*Fed*	*G-rank*	*S-rank*	CRPR
Croton wigginsii	Wiggin's croton	Rare	-	G2G3	S1.2	2.2
Palafoxia arida var. gigantean	Giant Spanish-needle	-	-	G5T3	S2	1B.3
Pholisma sonorae	Sand food			G2	S2	1B.2

Status Codes:

Federal: FE - Federally listed endangered: species in danger of extinction throughout a significant portion of its range
FT - Federally listed, threatened: species likely to become endangered within the foreseeable future
BCC: Fish and Wildlife Service: Birds of Conservation Concern: Identifies migratory and non-migratory bird species (beyond those already designated as federally threatened or endangered) that represent highest conservation priorities <www.fws.gov/migratorybirds/reports/BCC2002.pdf>

State CSC = California Species of Special Concern. Species of concern to CDFG because of declining population levels, limited ranges, and/or continuing threats have made them vulnerable to extinction.
SE - State listed as endangered
ST = State listed as threatened
WL = State watch list

State Rank (S-Rank):
S1—Less than 6 EO, or less than 1,000 individuals, or less than 2,000 acres;
S2—Same as "G2";
S3—Same as "G3".

State Rank Extension:
0.2—threatened;
0.3—no current threats known

Global Rank (G-Rank) is a reflection of the overall condition of an element throughout its global range:
G2—Same as "S2";
G3—Same as "S3";

G4—Apparently secure, this rank is clearly lower than G3, but factors exist to cause some concern; i.e., there is some threat, or somewhat narrow habitat;
G5—Population or stand demonstrably secure to ineradicable due to being commonly found in the world.
Subspecies receive a T-rank attached to the G-rank. The G-rank refers to the whole species range, but the T-rank refers to the global condition of taxon variety only.

California Rare Plant Rank (CRPR)

1B - Rare, threatened, or endangered in California and elsewhere
2 - Rare, threatened, or endangered in California but more common elsewhere
3 - Plants which need more information - a watch list
4 - Limited distribution – a watch list
0.1 - Seriously threatened in California (high degree/immediacy of threat)
0.2 - Fairly threatened in California (moderate degree/immediacy of threat)
0.3 - Not very threatened in California (low degree/immediacy of threats or no current threats known)

II. Alliances – Draft List of Vegetation Types Known or Likely to Occur in the **Imperial East SEZ and Environs**
California Native Plant Society, February 2011

The alliances and associated listed below include those known to occur within the BLM Solar Energy Zone (SEZ) and those known to occur within 10 kilometers of the SEZs (and therefore have potential to be present in the SEZ. The list for Imperial East was derived from observation in late 2010; thus, additional information could be acquired for this location.
***** = Considered as Statewide Rare or of High Priority for Inventory (with State Rarity ranking of S3 or below). Also, see the DFG natural communities list, which addresses high ranking of vegetation types.

Imperial East SEZ

Tree Dominated:

Prosopis glandulosa* Shrubland Alliance
*Prosopis glandulosa / Pluchea sericea – Atriplex canescens**

Shrub Dominated:

***Ambrosia dumosa* Shrubland Alliance**
Ambrosia dumosa – Ericameria linearifolia (provisional type based on observation)

***Larrea tridentata* Shrubland Alliance**
Larrea tridentata
Larrea tridentata – Ericameria linearifolia (provisional type based on observation)

***Larrea tridentata-Ambrosia dumosa* Shrubland Alliance**
Larrea tridentata – Ambrosia dumosa
Larrea tridentata-Ambrosia dumosa-Ephedra (*californica*)*
*Larrea tridentata – Ambrosia dumosa / Pleuraphis rigida**

Pluchea sericea* Shrubland Alliance

Alliances & Associations – Draft List of Known or Likely to Occur Vegetation Types in the **East Riverside SEZ and Environs**
CNPS, February 2011

This list was derived largely from data collected in preparation of the Northern & Eastern Colorado Desert Coordinated Management Plan (see NECO classification report by Evens and Hartman 2007), and from additional data collected in 2011 during a CNPS vegetation mapping workshop at Palen Lake. Because the vegetation communities throughout the entire East Riverside Solar Energy Zone (SEZ) are not yet mapped, the alliances and associated listed below include those known to occur within the SEZ and those that occur within 10 kilometers of the SEZ (and therefore have potential to be present in the SEZ).
***** = Considered as Statewide Rare or of High Priority for Inventory (with State Rarity ranking of S3 or below). Also, see the DFG natural communities list, which addresses high ranking of vegetation types.

East Riverside SEZ

Tree Dominated Types:

Parkinsonia florida – Olneya tesota* Woodland Alliance

*Parkinsonia florida / Larrea tridentata – Peucephyllum schottii**

*Parkinsonia florida - Olneya tesota**

Parkinsonia florida / (*Psorothamnus emoryi, Pleuraphis rigida*) (provisional dune type)*

*Parkinsonia florida - Olneya tesota / Hyptis emoryi**

*Parkinsonia florida**

*Parkinsonia florida / Hyptis emoryi**

*Olneya tesota**

*Olneya tesota / Psorothamnus schottii**

Prosopis glandulosa* Woodland Alliance

Prosopis glandulosa – Atriplex spp.*

Psorothamnus spinosus* Woodland Alliance

Psorothamnus spinosus / Ephedra (*californica*) *- Ambrosia salsola*

Shrub Dominated Types:

Allenrolfea occidentalis* Shrubland Alliance

*Allenrolfea occidentalis**

*Allenrolfea occidentalis - Suaeda moquinii**

***Ambrosia dumosa* Shrubland Alliance**

*Ambrosia dumosa – Ephedra californica**

*Ambrosia dumosa / Pleuraphis rigida**

***Atriplex canescens* Shrubland Alliance**

Atriplex canescens

***Atriplex polycarpa* Shrubland Alliance**

Atriplex polycarpa Sparse Playa

***Atriplex spinifera* Shrubland Alliance ***

*Atriplex spinifera**

***Encelia farinosa* Shrubland Alliance**

Encelia farinosa

***Larrea tridentata* Shrubland Alliance**

Larrea tridentata

Larrea tridentata – Atriplex polycarpa

Larrea tridentata / Cryptogamic crust

*Larrea tridentata / Pleuraphis rigida**

***Larrea tridentata – Ambrosia dumosa* Shrubland Alliance**

Larrea tridentata – Ambrosia dumosa

Larrea tridentata – Ambrosia dumosa – Krameria grayi

*Larrea tridentata – Ambrosia dumosa – Fouquieria splendens**

*Larrea tridentata – Ambrosia dumosa – Olneya tesota**

*Larrea tridentata – Ambrosia dumosa – Psorothamnus spinosus**

Larrea tridentata – Ambrosia dumosa / Cryptogramic crust

Larrea tridentata – Encelia farinosa Shrubland Alliance

Larrea tridentata – Encelia farinosa

Larrea tridentata – Encelia farinosa – Ambrosia dumosa

Pluchea sericea Shrubland Alliance*

*Pluchea sericea**

Suaeda moquinii Shrubland Alliance*

*Suaeda moquinii**

*Suaeda moquinii – Atriplex canescens**

Herbaceous Types:

***Brassica* (*tournefortii*) Herbaceous Semi-Natural Stands**

Brassica tournefortii / Ambrosia dumosa

***Pleuraphis rigida* Herbaceous Alliance ***

Pleuraphis rigida (in desert washes and on dunes)*

*Pleuraphis rigida / Ephedra (californica)**

Dicoria canescens – Abronia villosa* Herbaceous Alliance

*Dicoria canescens**

Salsola tragus - Oenothera deltoides (provisional dune type based on observation)*

Petalonyx thurberi* Provisional Herbaceous Stands

(provisional sandy type based on observation in area and recent data collection on NPS lands)

Wislizenia refracta Herbaceous Special Stands*

Miscellaneous Land Use Types:

Simmondsia chinensis plantations and other agricultural field

Thank you for your comment, Carlos Garcia.

The comment tracking number that has been assigned to your comment is SEDDsupp20170.

Comment Date: January 27, 2012 19:57:04PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20170

First Name: Carlos
Middle Initial:
Last Name: Garcia
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State: [Withheld by requestor]
Zip: [Withheld by requestor]
Country: [Withheld by requestor]
Privacy Preference: Withhold address from public record
Attachment: Final_comments_submitted_on_1_27_2012[1].doc

Comment Submitted:

Attn: Linda Resseguie
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Argonne, IL 60439

RE: Public Comment for the Supplement to the Draft Programmatic Environmental Impact Statement (PEIS) for Solar Energy Development in Six Southwestern States

January 27, 2012

Dear Ms. Linda Resseguie:

I am a permittee of the Alta Lake Permit on the proposed Antonito Southeast Solar Development site and I strongly oppose the designation of this permit for the following reasons:

1. I depend and use the permit every time my grazing periods become available for the historical use of grazing cattle on this land. This is my way of life, and if my grazing rights are cancelled without any monetary compensation or another comparable grazing allotment in close proximity, the impact to my cattle business would be significant to the extent that I would have to downsize the herd or sell out completely. I do not believe it is the intention to force cattle producers out of the business when planning for solar development on Bureau of Land Management (BLM) /federal owned lands. I have a hard time even thinking of the difficult process I would have to go through to purchase private land or be forced to purchase another grazing allotment, and the near impossible feat to secure another permit in neighboring northern New Mexico BLM or a USDA permit for Carson National Forest as those permits are also passed down within families from generation to generation as they are in the San Luis Valley. The burden of crossing state lines with cattle is extremely expensive due to the testing, trucking fees, rider costs, and other incidentals, plus additional time that is currently necessary in other parts of the business. My current plans are to will my private owned base land attached to this permit, my grazing permits and cattle to my daughters, their husbands, and my grandson. They plan to continue the family cattle business operations.
The legality and reality of what I mention in #1 needs to be discussed at length before this proposed zone is further considered.

2. I believe there are cultural and historical pasts that must be considered. The ranchers and farmers of the San Luis Valley have always contributed greatly to the livestock, hay, potato, grain and other agricultural products that are necessary in order to help feed the USA and other countries. "Conejos County has enormous natural history values including being part of the Sangre de Cristo NHA, and long human use. The mission of the NHA is to promote, preserve, protect and interpret the profound historical, religious, environmental, geographic, geologic, cultural and linguistic resources. These efforts will contribute to the overall national story and engender a spirit of pride and self-reliance, and create a legacy in the Colorado counties of Alamosa, Conejos, and Costilla. Hispanic settlers from the south were enticed to raise crops and sheep through land grants under Mexican communal law, a practice that was adopted under Spanish reign and continued when Mexico won its independence from Spain, to settle the region that is presently encompassed by the NHA. When the Mexican-American war ended in 1848 and the territory was ceded to the United States with the signing of the Treaty of Guadalupe Hildalgo the Conejos Land Grant (which includes present day Conejos County, Rio Grande County and portions of Alamosa County and Saguache County) was the only land grant that was petitioned for a patent and denied in its entirety."1 1. McCourt, "*The Conejos Land Grant Southern Colorado"*, Colorado Magazine, Vol. 52 (1975): 36-51.

3. The impact to the active prairie dog colonies, which are abundant throughout the permit. My observations lead me to believe the prairie dog population has been on the increase over the past 10 or more years.
4. The impact to the antelope herds that depend on grazing this permit. I believe this permit and the adjacent permit also being proposed are the closest federal owned land to water and by developing this land it would cause hardships for the antelope to find water and pasture.
5. The ecological and environmental impacts to the development of this land. Heavy machinery would have to be brought in and the soils, forage, and lava rock would be significantly disturbed. This land is very rocky and not level by any means.
6. The costs and impacts to develop transmission lines will be significant. I believe private land owners will be impacted in order to adequately develop an infrastructure. I also believe private land owners have not been considered in the planning stages. The proposed transmission corridor between southeast Antonito and sending it out of the San Luis Valley spans a large area, approximately 45 miles. Additionally, private and public land

owners have not received ample communication and notification of this proposal and implications associated with this proposal.
7. I believe there are private land owners closer to Antonito and other communities in the San Luis Valley that are willing to sell their land for this type of development. There are parcels of private land closer to substations and transmission lines that will not impact so many private and public land owners.
8. I believe the purpose of federal owned lands, such as the proposed, were designated for a reason and it is an injustice to cancel the designation, especially when it is still in use. Are solar seeking private owned businesses lobbying members of Congress and state legislatures to designate these lands in order to lessen their initial costs of purchasing private land and other costs?
9. After listening to President Obama's State of the Union speech last night, I believe he is not aware of the significant impact the re-designation and canceling of grazing rights will have to cattle operations such as my own. He talks about increasing renewable energy, but ultimately we know he does not intend to impact one's way of life. My previous comments posted on or about May 2, 2011 and this posting must be conveyed to him for his reading.

Finally, I do not believe a realistic and thorough evaluation of this proposed land was ever conducted. The land is vast and studies that encompass all impacts must be done correctly. I strongly recommend removing The Alta Lake Allotment land from the proposed Antonito Southeast Solar Enterprise Zone.

Carlos Garcia
BLM Alta Lake Permittee

Attached is a copy of the comments I submitted online on or about May 2, 2011.

I am strongly opposed to the proposed Antonito Southeast solar zone, state of Colorado. I have lived in the Antonito community all of my life, self-employed as a farmer and cattle rancher. My family is the current permittee of the BLM Alta Lake Grazing Permit. I was unaware that our permit was being considered for solar development until Saturday, April 30, 2011. To

my knowledge, as a permittee, I have never received written correspondence from BLM regarding this proposition. I recently grazed the permit in the fall of 2010 and I am currently planning of grazing the permit during the months of May and June, 2011, anxiously waiting BLM approval for a start date of at least May 5, 2011.

Sheep and cattle ranching has been a part of my family for a confirmed four generations. Factually, my grandfather and my father were proud owners of the Alta Lake Grazing Permit and I inherited it, along with my two brothers, upon the passing of our mother and father. My father and grandfather originally used the permit to pasture a flock of approximately 1,000 sheep. My father, in the early 1970's converted the permit to a 200 herd of cattle permit. Since then, the permit was annually grazed in the fall by his cattle and my cattle. Since I became a permittee, I have needed this permit in order to successfully remain in the cattle business. Records will show that I have used this permit every time the grazing periods become available. If this zone is approved, the impact to my family and I is significant. I will be forced to sell my cattle herd and look for employment elsewhere.

If approved, the impact to the antelope herd will also be significant. My observations lead me to conclude antelope depend on the grazing in the Alta Lake Permit during certain times of the year. Historically, this permit and the land proposed has the capacity to adequately feed the antelope during their migration cycles and provide ample pasture grasses and sage for sheep and cattle grazing. There is no water for the antelope in the permit, requiring the antelope to migrate daily to the San Antonio River, which is approximately 1.5 miles from the north boundary fence of the permit. My point is this permit is the closest BLM land to the San Antonio River, which makes the permit ideal for the preservation of antelope and other wildlife in the area. The impact would be significant to the herd if they were no longer able to graze the land.

Further, my understanding is the water that once was channeled through the permit has been abandoned and/or sold, and there are no plans or rights of ownership to plan on having access to water for development of any kind. Currently, I haul water for my cattle to drink to parts of the permit and centered in the middle of the permit is a 300 foot well that is designated for livestock drinking water only. My understanding at the time the well was drilled in the 1980's is water could not be found any higher than 300 feet down and the pump flow is poor, as we have to run a generator for a minimum of 3-5 hours a day to adequately water the cattle. Therefore, I believe water is one major reason to deny approval of this zone for solar development.

Transmission of solar energy produced is a major disadvantage, due to the lack of proximity to the nearest substation, which is south of the Town of Antonito. The cost would be significant to develop transmission lines to move the electricity produced. Transmission lines would have to be developed under/and or above the San Antonio River to hook onto the Town of Antonito substation, which is an environmental impact. Who would bear the cost? How fair would it be to ranchers, such as myself, for the government to subsidize large companies for this type of development and all these years, to not subsidize my operation in relation to surface water rights for my cattle to drink, providing me with electrical power to pump water for my cattle, and/or other forms of subsidy that would assist me in reducing my operating costs? When one considers the east most part of the proposed Antonito Southeast Zone, it is highly impractical, not feasible, not cost efficient to consider the majority of the land proposed and my fear is who would bear the developmental costs for what could become a private ownership profit. I do not see it being fair to make government subsidy funds available for infrastructure costs that are essentially funded by the taxpayer?

Another area of concern is the environmental and ecosystem impact on the proposed area. The composition of the surface land is predominately volcanic rock and soils. This land by all accounts is not flat land; there are not large sections that meet the description of uniformity. The land would have to be bulldozed; volcanic rocks would have to be stockpiled and/or hauled away, which means the land would have to be significantly impacted during the construction process. Rabbits, rattlesnakes, other snakes, gophers, rats, and other rodents would be greatly impacted. Coyotes are abundant in the proposed zone and I am certain they depend on rabbits and other animals for their livelihood. The impact to the types of sage and other plants that wildlife, sheep, and cattle depend on will be significant, if this land is disturbed. We know the nearby San Antonio Mountain was a volcano at one time and these proposed zones are the geological remains of what happened back then. Once again, the environmental and ecosystem impact will be tremendous, if approved.

I can empathize with the lack of employment in Conejos County and all areas of the United States that are hurting. However, one knows these projects provide temporary employment and a small number of full-time jobs, once the project is completed. I also acknowledge the need for renewable energy. However, I believe there are alternatives that need to be considered, other than proposing government owned land that is currently designated for a purpose such as the proposed one I have talked about. I

know there are private property owners that would be willing to sell their land for this type of development, with water rights attached to it. Let the large companies and the developers/investors seek private land owners that are willing to part with their land and at the same time leave government/public owned lands out of the development process that has the potential to become a private ownership profit. In addition, there are other proposed BLM solar zones that might have no designated purposes, such as livestock grazing permits, etc., and I would support these lands be the ones to approve, because of the lack of impact to current forms of operations that depend on the use of the land.

In conclusion, I will repeat that I am strongly opposed to any approval of the Alta Lake Permit land and the adjacent grazing permit owned by the Moeller family for solar development for the above stated reasons and the reasons I further wish to emphasize below. As mentioned above, I have never been contacted by anyone from BLM regarding my thoughts on the proposal. I don't believe it is professional of BLM staff to not notify me earlier that my permit was being considered for such development. If the current law does not provide a protocol for involving and notifying grazing permittees, I am recommending protocol be implemented during the initial phase of such a proposal in order to adequately treat all involved equitably. I must emphasize there will be environmental and ecosystem impacts which will be significant, if approved.

Also, I am more than willing to testify in person. I am more than willing to become actively involved in this process, as I do not believe it is fair that people that are not aware of the lay of this land and the historical purposes of the land are the only ones involved. I kindly ask that my public comments be shared as the process continues, especially the fact to consider that I would be significantly impacted, if approved. Also, I ask my concerns be further studied and evaluated in order to secure data as to what the impact really is.

Submitted by Carlos Garcia

Thank you for your comment, D. Bradford Hardenbrook.

The comment tracking number that has been assigned to your comment is SEDDsupp20171.

Comment Date: January 27, 2012 20:02:29PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20171

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Comment Submitted:

Please see attachment.

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January 27, 2012

NDOW-SR#: 12-074

Solar Energy Draft PEIS
Argonne National Laboratory
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Re: Supplement to the Draft PEIS for Solar Energy Development in Six Southwestern States; DES 11-49 · DOE/EIS-0403D-S, October 2011 (SDPEIS)

Dear PEIS Team:

In response to the *Draft PEIS for Solar Energy Development in Six Southwestern States* and mindful of the many knowledge gaps regarding wildlife resources in Nevada, the Department of Wildlife (NDOW) recommended solar energy development be limited to the then seven proposed Solar Energy Zones (SEZ's) as an initially responsible, environmentally conservative approach while also allowing for solar energy development over the 20-year life of the PEIS. In the present economic environment of unprecedented budget scarcity, this rationale would provide a reasonable temporal opportunity for performing investigations and acquiring new information useful in development of more reliable conservation management tools and policies affecting wildlife resources and other environmental values affected by the rapid influx of solar energy development. For reasons stated in the SDPEIS, BLM's preference for the Modified Solar Energy Development Program Alternative is received as an answer to NDOW's recommendation.

We can appreciate the several program-based and Solar Energy Zone (SEZ) modifications and elaborations contained in the SDPEIS. The SDPEIS does provide much clearer theoretical insight of the proposed solar energy development programmatic process and guidance. Reduction in the number and sizes of SEZ's, identification of exclusion areas, and a conditional ROW variance application process within the range of the greater sage-grouse and desert tortoise are notable. However, it remains unclear how workforce commitment needs (not restricted to BLM and DOE agency personnel) and associated logistical support (e.g. partnerships, funding) to effectively adjust and implement pre-existing multiple-use and natural resource programs combined with recent energy development programs and policies will be reasonably addressed warranting an unchallenged success.

Published last December, science-based review of available knowledge focusing on wildlife conservation and solar energy development in the desert southwest provides an insightful overview of the types of data gaps and uncertainties (Lovich and Ennen 2011). The overview certainly applies to Nevada. One observation made was water supply needs for thermal-based technologies. This resource is obviously in short supply in Nevada. Until more insightful hydrological study of the affected basins came to light,

NDOW previously recommended that future solar projects be restricted to photo-voltaic (PV) or dry-cooled projects until sustainable water sources could be determined without adversely affecting regional habitats, especially desert spring and riparian systems. Recent efforts by the BLM for performing partnership-based rapid ecological assessments will assist in gaining better regional perspectives, but these tools are limited to existing models and datasets digitally available. In other words, adequate on-the-ground support for filling data gaps necessary in developing (mindful of the many land use plan amendments and revisions required) responsive adaptive management, monitoring, and mitigation in Nevada remains uncertain. The number and kinds of agency and program funding mechanisms likely will remain the same. Unfortunately, discretionary funds supporting many of the federal programs and partnerships that the BLM's Preferred Alternative depends on have been experiencing long-term decline. A similar pattern is also the case for non-federal natural resource agencies and organizations. Development and adherence to implementation plans at the Land Use Plan level might play an important part of the adaptive management and monitoring approach, especially in monitoring funding opportunities and commitments for local program needs, like narrowing prioritized information gaps.

It is clear that the BLM's Modified Solar Energy Development Program Alternative and DOE's Action Alternative will be advanced to the Final PEIS to meet their respective solar energy development programs. Further refinements are anticipated as the final draft of the PEIS progresses. As a cooperating agency to the PEIS process, NDOW has openly requested and expected a more active at-the-table participation in providing and discussing wildlife resource information and management considerations at a higher degree than has occurred to date (i.e. negligible). While some of our observations, concerns, and recommendations to the Draft PEIS have been somewhat addressed in the SDPEIS, the following observations and recommendations provide examples of additional information sharing opportunities that were previously missed or have since become of increased emphasis value with issuance of the SDPEIS.

Page 2-35, Variance Application/Plan of Development (POD) Factors to Be Considered
Lines 15 & 16, strike the last phrase, "*or areas repeatedly burned and invaded by fire-promoting non-native grasses).*" Unless this factor element is further clarified in context, it could predispose the low probability of restoration of an area within the range of special status or sensitive species (e.g. sage-grouse, desert tortoise) to no probability of restoration; it is a potentially problematic precedent to take.

Pages 2-35 to 2-37, *Desert Tortoise Variance Process Requirements under Consideration*:
NDOW's active participation with the BLM and USFWS discussion on these elements is requested.

Page 2-37, *Greater Sage-Grouse Requirements*:
Requirements should be in line with BLM Instruction Memoranda (IM's) #'s 2012-043 and 2012-044. For example, line 23 should indicate a distance of 4 miles (6.4 km) from the nearest lek for consistency with information found in Attachment 1 of IM 2012-0043 (Sage-Grouse National Technical Team. 2011). Note: NDOW is finalizing Habitat Categorization maps for the greater sage-grouse in coordination with the BLM. Current understanding is that these maps will be completed by mid-February 2012.

Nevada Solar Energy Zones (SEZ's) Retained and Modified

Amargosa:

- The region is already becoming populated with several proposed solar developments; limit SEZ to PV or similarly low-volume water demand projects;
- Attention to phylogeographic information gaps and potential regional distribution perspective (inclusive of California) for species like the shovel-nosed snake (*Chionactis occipitalis talpina*) and sidewinder would seem relevant (Wood *et al* 2008, Lovich & Ennen 2011).

Dry Lake Valley North:

- From a wildlife resources standpoint, retaining this SEZ as proposed in the SDPEIS is unclear compared to dropping of the East Mormon Mountain and Delamar SEZ's altogether.

Dry Lake Valley, Gold Point, & Millers:

- Depending on the SEZ, there is potential or real occurrence of the pale kangaroo mouse (*Microdipodops pallidus*), dark kangaroo mouse (*Microdipodops megacephalus*) or both. Recent studies suggest morphologically cryptic speciation (Hafner *et al* 2008, Hafner & Upham 2011). Both species are State-protected and are Nevada BLM sensitive species (Nevada BLM 2011). Habitat characterization and distribution efforts of *Microdipodops* in the southern portion of the Big Smoky Valley (Millers SEZ vicinity) have been underway, but larger-scale efforts are needed to identify distribution hotspots for land use impact avoidance purposes there. Extent of updated distribution of the Desert Valley kangaroo mouse (*Microdipodops megacephalus albiventor*) relative to configuration of the Dry Lake Valley North SEZ is unclear.

Appendix Section C.4:

- Mindful of the aforementioned examples of species information gaps, this section could be expanded with the assistance of NDOW to better identify species/ecological priorities for each of the SEZs.

New SEZ Proposals

In Nevada, deferral of identifying new proposed SEZ's until the end of the 20-year PEIS period would seem reasonable, unless new compelling information surfaces 10-years into the PEIS. This takes into account the need for regularly scheduled, future land use plan revisions, present solar energy facility and transmission development to play out as indicators, and increased knowledge about more local environmental matters.

Page 2-13, Section 2.2.1.2 Adaptive Management and Monitoring:

Assures for adjustments in approaches and process, but could be improved by identifying a sense of funding commitments for implementing these adjustments and on-the-ground actions;

Transmission

- NDOW understands the challenges for ascertaining *a priori* how many and location of transmission projects; however, encouragement of multi-circuit structures would assist in avoiding transmission corridor and ROW bottlenecks as experienced in southern Nevada.
- Transmission projects should use non-lattice design structures to avoid conflicts with increased an dun-natural predation potential on sage-grouse and desert tortoise populations additional to other wildlife.
- Non-lattice line structures and perching discouragers for transmission tie-ins effective for avoiding or minimizing subsidized wildlife predation pressure strongly recommended

References

BLM-Nevada. 2011. Final Sensitive Species List, Microsoft Office Excel Worksheet – 135 KB; finalized October 2011.

Sage-Grouse National Technical Team. 2011. A Report on National Greater Sage-Grouse Conservation Measures. BLM-chartered Planning Strategy. December 21, 2011. Attachment 1 to BLM IM No. 2012-044. 74 pp.

John C. Hafner, Nathan S. Upham, Emily Reddington and Candice W. Torres. 2008. Phylogeography of the Pallid Kangaroo Mouse, *Microdipodops pallidus*: A Sand-Obligate Endemic of the Great Basin, Western North America. *J. Biogeogr.* 35(11): 2102-2118.

Hafner, John C. and Nathan S. Upham. 2011. Phylogeography of the dark kangaroo mouse, *Microdipodops megacephalus*: cryptic lineages and dispersal routes in North America's Great Basin. *J. Biogeogr.* 38(6): 1077–1097.

Lovich, Jeffrey E. and Joshua R. Ennen. 2011. Wildlife Conservation and Solar Energy Development in the Desert Southwest, United States. *BioScience* 61(12): 982-992.

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BLM Director. 2011. Greater Sage-Grouse Interim Management Policies and Procedures. Instruction Memorandum No. 2012-043, USDI Bureau of Land Management, Washington, D.C. 20240. December 22, 2011. EMS Transmission 12/27/2011. Reply Refer to: 1110 (170/200/300/400) P. Two attachments. http://www.blm.gov/wo/st/en/info/regulations/Instruction_Memos_and_Bulletins/national_instruction/2012/IM_2012-043.html.

BLM Director. 2011. BLM National Greater Sage-Grouse Land Use Planning Strategy. Instruction Memorandum No. 2012-044, USDI Bureau of Land Management, Washington, D.C. 20240. December 27, 2011. EMS Transmission 12/27/2011. Reply Refer to: 1110 (170/200/300/400) P. http://www.blm.gov/wo/st/en/info/regulations/Instruction_Memos_and_Bulletins/national_instruction/2012/IM_2012-044.html.

As always, NDOW is supportive of national and state goals to develop renewable energy development strategies and technologies while averting significant impacts to Nevada's wildlife resources. We look forward to cooperative participation prior to and as part of the development of the Final PEIS. Thank you again for this review opportunity. For additional assistance, please do not hesitate to contact me at the NDOW Southern Region Office, or Steve Siegel at NDOW's State Headquarters in Reno. He can be contacted by phone at 775-688-1561, or by e-mail at ssiegel@ndow.org.

Sincerely,

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Thank you for your comment, Ceal Smith.

The comment tracking number that has been assigned to your comment is SEDDsupp20172.

Comment Date: January 27, 2012 20:09:46PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20172

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Attachment: SLVRCA SUPP PEIS comment_final.pdf

Comment Submitted:

Please see attached.

San Luis Valley Renewable Communities Alliance

January 27, 2012

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Submitted electronically via: http://solareis.anl.gov/involve/comments/index.cfm

RE: Comments on the Supplemental Draft Solar Programmatic Environmental Impact Statement

To whom it may concern:

On behalf of the San Luis Valley Renewable Communities Alliance (SLVRCA), its members and associates, we submit the following comments on the Supplemental Draft Solar Programmatic Environmental Impact Statement (DPEIS).

SLVRCA is a coalition of farmers, ranchers, biologists, renewable energy advocates and local citizens who view with great concern the industry and government momentum behind siting industrial scale, centralized solar power stations on large swaths of ecologically valuable public lands, particularly in the San Luis Valley, Colorado.

We have come together to urge local, state and national government, utilities, regional environmental groups and the public to abandon this destructive path, and to work toward generating the power we need in the built environment.

In conjunction with our partner organization Solar Done Right, SLVRCA holds that there is a proper hierarchy of priority for strategies to end our nation's addiction to fossil fuels. We should start the switch by using the most cost-effective strategies for renewable energy production, which also happen to be the least environmentally destructive. In descending order of priority:

1. **Reduce demand.** According to some estimates, an aggressive program of conservation and energy efficiency using currently available technology could reduce US power consumption by nearly one third.[1]
2. **Generate renewable energy at or near the point of use.** Distributed solar generation on homes and businesses is cost-competitive and does not incur the energy loss of distribution through transmission lines. Users can benefit through reduced utility bills or sales of power into the grid, or both. Installation time from project conception to completion is measured in weeks rather than years.
3. **Generate renewable energy on a larger scale within the built environment.** Most cities possess large industrial spaces including warehouse roofs, brownfields, large parking lots, airports, and other areas that could be either converted to or augmented with renewable energy production using existing technology. Emerging technologies offer promise for additional methods to incorporate solar energy production into new residential and commercial construction.

***Furthermore,* it should be noted that a focus on both large- and small-scale distributed generation in the built environment is anticipated to create many more jobs than the remote, centralized model now being pursued. A UC Berkeley study published in 2010 concluded that if California instituted a feed-in tariff for projects up to 20 MW in order to achieve its Renewable Portfolio Standard, it would create 3 times as many jobs as without, and would result in $2 billion in tax revenues and billions in new investment.**

The approach described above can meet our electrical energy needs without sacrificing biologically valuable ecosystems in Colorado and other southwestern states with large scale concentrating solar power plants.

Should these common-sense methods fail to meet our society's long-term demand for renewable

[1] http://www.grist.org/article/2009-09-11-how-much-energy-does-the-us-waste/

energy, centralized solar power plants should be sited only on available disturbed, degraded and contaminated lands that offer little carbon sequestration, wildlife habitat or other natural resource values. Renewable technologies that do not deplete scarce arid land water resources should be prioritized. In any event, prudent and responsible renewable energy development should always steer large-scale renewable energy production away from intact public and private wildlands and prime agricultural lands.

SLVRCA shares many of the Environmental Justice/Socioeconomic concerns expressed in the Conejos County Clean Water, Inc. comment letter. These same concerns can be extended to all six counties in the San Luis Valley (Conejos, Costilla, Alamosa, Rio Grande, Mineral and Saguache). All of the SLV Counties have significant Hispanic and low-income populations that are among the poorest in Colorado and the nation.

The industrial solar development scenario embedded in the PEIS could serve to worsen poverty in areas adjacent to industrialized solar zones, impacting these communities unfairly and disproportionately. Executive Order 12898, February 11, 1994, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, requires BLM and DOE to identify and address potential disproportionately high and adverse human health and environmental impacts on minority and low-income populations. The PEIS does not address environmental justice impacts likely to disproportionately affect low-income San Luis Valley communities, ratepayers and taxpayers including, but not limited to the following:

1. Disproportionate incentives and benefit to absentee private corporations to develop public resources while depriving local communities of traditional livelihood activities (such as grazing) that rely on access to public resources,
2. Creation of a path dependency on remote, centralized industrial solar development that siphons scarce financial, labor, transmission capacity, demand and land resources away from local, community based renewable energy development that would provide significantly more economic and environmental benefits to SLV communities and Colorado, the region and the nation.
3. Significantly higher costs to taxpayers and ratepayers for renewable energy resources compared to local, distributed generation in the built environment, thus exasperating the massive, inequitable wealth gap in the US that underlies many of our economic problems.
4. Inadequate bond requirements that push project infrastructure costs for water, roads, bridges, housing, emergency, fire protection and medical services, and other services on to poor communities,

5. Preferential contractor and vendor requirements that favor large companies and exclude local labor and business,
6. No tangible revenue-sharing mechanism to affected Counties, communities and municipalities.

The San Luis Valley has long been known for its scenic views and rich cultural heritage as one of the nations oldest settled regions. Cultural resource assessments have not been made for the proposed Solar Energy Zones or all areas open to solar industrialization through variance. We strongly advise BLM to consult with known historians and cultural experts in the Valley's Hispanic communities, who have knowledge of cultural and historical resources unavailable to government agencies.

Despite claims from mainstream, urban based environmental groups, the proposed Colorado Solar Energy Zones (SEZ) are not "areas of low conflict" lacking in significant cultural or ecological values. What follows are new concerns specific to Colorado's proposed Solar Energy Zones that are not included in our previously filed oral and written comments.

Fourmile East SEZ

This area is in close proximity, just 9 miles south of the Great Sand Dunes National Park. The site is very likely to harbor many of the same endemic species as GSDNP, but it has not been properly inventoried. Large-scale industrialization so close to a national park, and southern Colorado the San Luis Valley's greatest tourism resource, is totally inappropriate. The PEIS does not address potential impacts on GSDNP and the local economy, due to potentially degraded scenic and biodiversity values.

De Tilla Gulch

While adjustments were made in the Supplemental PEIS to reduce the size of this proposed SEZ, concerns still remain. The site contains valuable habitat for Gunnison's prairie dog, Gunnison's sage-grouse, severe winter range for elk, winter concentration habitat for pronghorn and short-grass prairie that supports the globally vulnerable thirteen-lined ground squirrel and silky pocket mouse. In addition, the site and natural carbon sequestration values.

Antonito Southeast SEZ

The proposed zone includes the Cumbres and Toltec Scenic Railroad that has been designated and Area of Critical and Environmental Concern (ACEC) including the area East of San Antonio Mountain. These high-value hills with flat open range for wildlife grazing, pinon, juniper and ponderosa pine forests should be removed from the SEZ proposal.

Los Mogotes East SEZ

This area is also near a designated ACEC, eight miles southwest of La Jara where the Conejos River forms its southern boundary. The area contains important biological values including supporting a very large (~60,000-acre) Gunnison's prairie dog complex with active colonies, critical winter range for big game species and known Mountain plover nesting sites. It is a traditional hunting area for Antonito and Capulin residents and is characterized by sweeping views of the Sangre de Cristo mountain range. The site is also located immediately west of the Old Spanish Natural History Trail. According to local cultural resource experts, it contains significant undocumented, but important, historical and cultural resources and sites.

Perhaps our largest concern is the failure of the PEIS to adequately assess cumulative impacts. There have been a series of large-scale industrial solar proposals on private lands, as well as new proposals to expand protected areas in the region. The PEIS fails to consider, even in the most rudimentary way, how the PEIS scenario will cumulatively impact the people, wildlife, landscapes, sense of place values, health, socioeconomics and environment in the San Luis Valley and Colorado.

In conclusion, we believe the Draft Solar PEIS, and the path it lays out for our County's renewable energy future, remains fundamentally flawed.

The DOI, DOE and BLM are required to consider a far broader range of alternatives including full consideration of distributed generation in the built environment and EPA's **RE-Powering America Plan**. Arizona has worked closely with EPA to identify severely degraded lands that we encourage all State's involved in the PEIS to implement according to the Solar Done Right hierarchy of priority for solar development outlined above.

While the Energy Policy Act—upon which Interior leans—expressed Congress' "sense" that Interior "should seek to have approved" a stated amount of non-hydropower renewable energy on public land, it did not establish a mandate. Interior is not required to engage in this radical privatization of public lands for industrial solar energy development, and in light of the evidence

regarding the damage it would cause, has the discretion to, and must, change course.

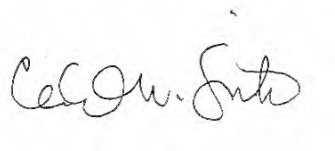
In addition to turning to degraded, contaminated sites, there is vast potential to get outmoded, environmentally destructive solar off public lands through the alternative of distributed generation through solar PV installations in the built environment.

The PEIS dismisses distributed generation on the basis of defining the purpose and need as "[responding] in a more efficient and effective manner to the *high interest in siting utility-scale solar energy development* on public lands." This purpose and need statement, and the alternatives formulated for it, are disproportionally and unfairly geared towards meeting the interests of large corporations rather than on the urgent need to renew our communities through ***local*** economic development and jobs, build a more efficient and reliable energy system, and reduce our fossil fuel use in the least damaging, most cost-effective and sustainable way.

The PEIS process has cost millions of public dollars, absorbed the time and energy of thousands of people, and yet has utterly failed to move us one inch closer to a cost-effective, efficient, smart or environmentally responsible renewable-energy policy.

We join with Solar Done Right in calling on the BLM to either expand the PEIS analysis away from industrial-scale development on public lands or relinquish its role as the ill-chosen federal standard-bearer for renewable energy.

Sincerely,



Ceal Smith
On behalf of SLVRCA members and affiliates

Thank you for your comment, Michael Govan.

The comment tracking number that has been assigned to your comment is SEDDsupp20173.

Comment Date: January 27, 2012 20:10:56PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20173

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Attachment: Letter to Solar Energy Programmatic EIS.pdf

Comment Submitted:

January 25, 2012

To: Solar Energy Programmatic EIS
Argonne National Laboratory
9700 S. Cass Avenue - EVS/240
Argonne, IL 60439

RE: Protecting Coal Valley and Garden Valley, Nevada to preserve City

To Whom It May Concern:

On behalf of the Los Angeles County Museum of Art ("LACMA"), I am writing to strongly urge that the Coal and Garden Valleys in Nevada be excluded from any potential solar energy development by the Bureau of Land Management ("BLM"). These valleys house Michael Heizer's City project, the largest of a series of epic-scale earthworks by American artists in the western part of the United States. Any development in the region would undermine City's artistic value, as well as the substantial support that has been provided by numerous Foundations, individuals, and institutions across the country, including LACMA.

City began as a vision by the artist Michael Heizer in 1972, and over the course of the next four decades has grown to a size equivalent to the National Mall. City is among the largest sculptures ever constructed, deriving its inspiration from a variety of landscapes and art forms. Utilizing the most modern building technologies to create his timeless, awe-inspiring forms, Heizer's City will stand as one of the most remarkable and famous monuments of our time. While the project is not yet complete, it has already earned international recognition and, once finished, the sculpture will continue to have a positive impact on the local economy by drawing visitors from around the globe.

City has drawn interest from museums across the United States, universities, and institutions involved in culture and the arts. It has also been the subject of coverage in prominent media outlets like the The New York Times. LACMA and other supporters of City believe it to be a critically important piece of art that should be preserved in its purest form.

Michael Heizer chose the location for City based on the beauty, remoteness and undeveloped nature of Coal and Garden Valleys—an essential component of City. This nearly complete masterpiece, world-renowned even in its unfinished state, is threatened. Under the current draft Programmatic Impact Statement ("PEIS"), we believe that while Garden Valley is protected, Coal Valley would be subject to solar development. Such a decision would jeopardize the isolation and natural surroundings of City that inspired Heizer to create it. In addition to the national sponsors, there are a number of philanthropic supporters of Heizer's project in Garden Valley. A collective investment in this project of national and international cultural importance would be lost.

In order to avoid this outcome, we believe that the PEIS could be improved by removing Coal Valley from consideration, and ensuring that Garden Valley is excluded as well. It is the only way to ensure that students, scholars, and other visitors to the site may fully experience City in its purest form for years to come. Once the sculpture is finished, visitors to the artwork and local

employment for the maintenance of the project will have a positive ongoing effect on the local economy. I urge BLM to seek alternates for the solar energy development that would mitigate the impacts on this important cultural resource, the Coal and Garden Valleys, and their inhabitants.

Thank you for your time and consideration.

Sincerely,

Michael Govan
CEO and Wallis Annenberg Director
Los Angeles County Museum of Art

LACMA LOS ANGELES COUNTY MUSEUM OF ART
5905 WILSHIRE BOULEVARD
LOS ANGELES CALIFORNIA 90036

MICHAEL GOVAN

CEO/WALLIS ANNENBERG DIRECTOR
T 323 857 6001
F 323 857 6148

January 25, 2012

To: Solar Energy Programmatic EIS
Argonne National Laboratory
9700 S. Cass Avenue - EVS/240
Argonne, IL 60439

RE: Protecting Coal Valley and Garden Valley, Nevada to preserve *City*

To Whom It May Concern:

On behalf of the Los Angeles County Museum of Art ("LACMA"), I am writing to strongly urge that the Coal and Garden Valleys in Nevada be excluded from any potential solar energy development by the Bureau of Land Management ("BLM"). These valleys house Michael Heizer's *City* project, the largest of a series of epic-scale earthworks by American artists in the western part of the United States. Any development in the region would undermine *City's* artistic value, as well as the substantial support that has been provided by numerous Foundations, individuals, and institutions across the country, including LACMA.

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Thank you for your time and consideration.

Sincerely,

Michael Govan
CEO and Wallis Annenberg Director
Los Angeles County Museum of Art

Thank you for your comment, Michael Powelson.

The comment tracking number that has been assigned to your comment is SEDDsupp20174.

Comment Date: January 27, 2012 20:11:07PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20174

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Attachment: SOLAR_PEIS_MITIGATION_LETTER_20120127.pdf

Comment Submitted:

See attachment

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). Our organizations greatly appreciate the tremendous effort BLM has undertaken in the development of the draft PEIS and the subsequent Supplement, to create a solar development program. However, a critical aspect of a comprehensive solar development program is essentially absent, that of mitigation.

Mitigation, and specifically compensatory mitigation, provides an essential opportunity to protect the health of the nation's land, waters, and wildlife, while facilitating cost-effective, efficient and timely development of our nation's energy resources. To best meet the nation's conservation and energy development goals requires creating a mitigation program that is transparent, systematic, based on sound science, and addresses clear conservation priorities. Many (if not all) of the elements of a comprehensive mitigation program BLM is already using, developing or exist. The BLM/DOE Solar PEIS provides an opportunity to mesh these elements together under a consistent policy framework. The goal is clear policies establishing how compensatory mitigation is integrated into project NEPA documents and BLM decisions for all projects, leading to increased effectiveness and accountability of offsite mitigation while providing project developers, agency staff, and stakeholders with greater certainty regarding mitigation objectives and methods for implementing offsite mitigation. BLM appears to rely on the project proponent to design and develop mitigation proposals with little advance guidance, leading project developers to spend significant time and money developing a plan with very little idea of what will ultimately be required. And for a variety of reasons, project developers are not appropriate entities to design and implement compensatory mitigation.

The PEIS should define a mitigation *framework* that captures the mitigation hierarchy and drives siting and mitigation. The undersigned recommend that the mitigation hierarchy, i.e. avoid, minimize and offset, should be the guiding principle in establishing a mitigation framework and a subsequent compensatory mitigation program. These recommendations are principally focused on "offsets," i.e. compensatory offsite mitigation, however it is important that the entire mitigation hierarchy by addressed in the PEIS.

The primary and most important basis of a mitigation framework, and the basis for a compensatory mitigation program, is an understanding of the ecological attributes of the lands under consideration. We r**ecommend** the PEIS commit to using landscape-scale and finer scale ecological assessments that articulate the ecological health, status and/or condition of the species, habitats, migration corridors, and related values, e.g. recreation, across the landscape of potential development and any subsequent mitigation, i.e. the geographic scope of the PEIS. The PEIS should specifically commit, at a minimum, to incorporating and using existing and ongoing ecological analysis, especially those of its own creation and those of the affected States. Much of this information is currently available or under development by the BLM (and sister DOI agencies and contractors), States, and organizations like The Nature Conservancy and Natureserve. This includes BLM's Rapid Ecological Assessments (REAs), products created for the PEIS by Argonne and others, products produced by BLM's Assessment, Monitoring and Inventory (AIM) efforts, the California Desert Renewable Energy Conservation Plan (DRECP), BLM's Restoration Design Energy Project in Arizona, State Wildlife Plans, State Decision Support Systems (DSS), The Nature Conservancy's Mojave eco-regional assessment and West Mojave least conflict analysis.

A mitigation framework within the PEIS should seek to avoid ecological impacts to the greatest extent possible, especially to resources that cannot be mitigated or are declining – avoiding impacts by proper siting based on ecological analyses is the surest, easiest and best way to avoid subsequent mitigation demands. Significant impacts to habitat that supports special functions and values may simply not be replaceable through mitigation and therefore the best course may be to avoid those areas altogether. We recommend the PEIS identify specific lands where development should not occur. This list should be expanded to exclude development where there are ecological or other resources that are not mitigatable, declining, limited or rare, and should take into account the cumulative effects of development in determining these attributes.

After avoidance, a mitigation framework within the PEIS should seek to minimize ecological impacts through project design, and require Best Management Practices (BMPs) that specifically seek to minimize impacts during construction, operation, maintenance, and decommissioning, including implementing appropriate conservation measures related to timing and conduct of project activities. While the PEIS has extensive discussion of project siting, construction and operational BMPs, it provides little ecological and subsequent monitoring criteria to ensure that impacts are minimized to the greatest extent possible, especially to groundwater. The PEIS should establish clear ecological benchmarks that developers are to address in project development and operation.

The last facet of a mitigation framework is compensation for residual impacts (direct and indirect effects that are not avoided or minimized on-site) by providing replacement habitats, restoration of habitats, or other benefits, e.g. management actions that provide conservation benefits. The mitigation hierarchy recognizes that offsite mitigation is an inherently uncertain undertaking, which means that compensatory mitigation is sought only after efforts to avoid and minimize the impacts have been addressed. Inclusion of a compensatory mitigation program in the PEIS is the most efficient, cost-effective way to ensure the mitigation hierarchy is fully addressed within the mitigation framework.

A robust compensatory mitigation program consists of six elements:

1. An ecological baseline upon which unavoidable impacts are assessed.
2. A transparent mechanism or methodology to assess & quantify unavoidable impacts over the life of the impacts.
3. A consistent methodology to translate the impacts into dollars, i.e. mitigation investments.
4. A structure to hold, prioritize and apply mitigation investments. At a minimum the structure should include BLM, the USFWS, and State Fish and Game agencies – we recommend that key stakeholders be represented as well, including counties and conservation, sportsmen and recreation organizations.
5. A prioritization, e.g. conservation plan, as to where and how mitigation investments should be made to address impacts while seeking the highest return on investment.
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.

We recommend the PEIS, at a minimum, include the establishment of a compensatory mitigation program that encompasses the six elements listed above, including at a minimum, attributes for each element that inform how they would be structured and implemented.

Thank you for your consideration of our comments. We look forward to working with BLM on creating a mitigation framework and specifically regional mitigation plans that ensure protection of our countries critical natural resources while allowing the robust development of solar energy.

Sincerely,

Robert Bendick
Director, U.S. Government Relations
The Nature Conservancy

Gary Taylor
Legislative Director
Association of Fish and Wildlife Agencies

Steve Williams
President
Wildlife Management Institute

Boone & Crockett Club

Miles Moretti
President/CEO
Mule Deer Foundation

Thank you for your comment, Pat Flanagan.

The comment tracking number that has been assigned to your comment is SEDDsupp20175.

Comment Date: January 27, 2012 20:26:43PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20175

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Country: USA
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Attachment: MBCA comments to SPEIS_Jan 2012.pdf

Comment Submitted:

MBCA
morongo basin conservation association
P. O. Box 24 Joshua Tree California www.mbconservation.org

To: US Bureau of Land Management
Supplemental Draft PEIS Comments
Argonne National laboratory
9700 S. Cass Avenue, EVS/240
Argonne, IL 60439

Submitted electronically via: http://solareis.anl.gov/involve/comments/index.cfm

January 27, 2012

RE: Comments on the Supplemental Draft Solar Programmatic Environmental Impact Statement

To Whom It may Concern:

In July 2008 and May 2011, the Morongo Basin Conservation Association (MBCA) provided comments on the Scoping and DPEIS. We are pleased for the opportunity to comment on the Supplemental Draft PEIS Solar Energy Development Programmatic Environmental Impact Statement (SDPEIS).

The Morongo Basin Conservation Association is a 501(c) (4), community-based, California Non-Profit Corporation. The MBCA is the oldest collective voice in our area for educating the Morongo Basin"s citizens about the unique and valuable natural desert environment surrounding us. MBCA was founded in 1969, during a successful 11-year campaign to avert the imposition of power lines through the Morongo Basin by Southern California Edison. We have continued to be vigilant in seeking to protect the desert ecosystem surrounding us.

We are concerned that this plan proposed by the federal government to support renewable energy continues to subvert our efforts as desert citizens to preserve and protect desert resources and the interests of desert communities. We support energy usage reduction and renewable energy in a local distributed mode ("rooftop solar") as the primary goals in reducing carbon emissions and meeting energy needs. The federal government"s own 2006 Climate Technology Strategic Plan[1] listed distributed and community-scale technologies as important methods to meet goals for reducing emissions from end use and infrastructure (p. 79) and reducing emissions from the energy supply (p. 111).

[1] US Climate Change Technology Program, Strategic Plan. DOE/PI-0005, September 2006.

California

Today California is a leader in the production of rooftop solar energy. Among the top 25 nations, California ranks as the 6th in Solar PV construction[2]

> **California's Solar Market Is Growing Rapidly**
>
> *Over the last decade, the market for solar energy systems on or near homes and buildings in California grew nearly 100-fold. In 2000, California had fewer than 1,000 rooftop solar systems, with less than 10 megawatts (MW) of total electric generation capacity. In 2011, California passed the milestone of installing 1,000 MW of distributed solar capacity, with more than 100,000 separate installations. The state is on track to achieve the goal of the 2006 Million Solar Roofs Initiative, adding 3,000 MW of distributed solar capacity by the end of 2016.*[3]

The Morongo Basin"s incorporated cities and unincorporated areas are having their own impact on California"s renewable energy quotas.

Data in chart below is excerpted from Appendix 1: Alphabetical Listing for all Cities in California[4].
The chart contains the data for the total number and total capacity of grid-tied solar systems installed in all of California's incorporated cities in alphabetical order.

City	# Solar PV Installed	Rank by Total Installations	Total Solar PV Capacity	Rank by total PV Capacity
Twentynine Palms	57	320	258	418
Yucca Valley	52	335	254	419
Joshua Tree	46	358	360	374

In addition the following projects are under construction on private land within the Morongo Basin. These projects feed into the Southern California Edison grid and support the daily energy needs of local citizens and businesses.

- SEPV8, a 12 MW project on 100 acres and
- SEPV2 a 2 MW project on 20 acres

Our actions speak for themselves; Solar PV is an essential and growing enterprise in the Morongo Basin.

Morongo Basin, San Bernardino County, CA

Rather than speak in general, our intent in this letter is to demonstrate how it appears the SDPEIS might affect the basin environment, its citizens, their economy, and quality of life. The Morongo Basin spans 1,400 square miles in the Mojave Desert and is notable for is richly varied wide open landscapes and numerous human and wildlife communities. Topographically it is a well defined

[2] California Solar Cities 2012: Leaders in the race towards a clean energy future. California Environment Research and Policy Center http://www.environmentcalifornia.org/sites/environment/files/reports/California%27s%20Solar%20Cities%202012%20-%20Final.pdf

[3] Ibid.

[4] Ibid.

basin and range region with the San Bernardino Mountains to the west, the Little San Bernardino Mountains to the south, the Bullion Mountains to the north, and the lower elevations of Wonder Valley to the east. The sense of place, as well as the economic drivers for the 70,000 basin residents and businesses are Joshua Tree National Park (JTNP -1.4 million visitors in 2010) and the Marine Corp Air Ground Combat Center (MCAGCC).

Connectivity and Variance Lands

The region is a stronghold for the endangered desert tortoise as well as the iconic desert bighorn sheep and mountain lion. For these and numerous other animal and plant species the mountain ranges are conservation blocks providing habitats currently connected across the basin but in danger of fragmentation. The designated SDPEIS Variance lands threaten to fracture the desert ecosystem with its piecemeal approach, ignoring the fragile and essential connections that keep desert ecology intact and functioning.

The 2010 release of the *Mojave Desert Ecoregional Assessment* [5] by The Nature Conservancy brought to national attention the intactness of the Mojave Desert ecoregion. This intactness supports a healthy functioning ecosystem with a high level of biodiversity which we have yet to fully document:

> *Using the trends from the past 50 years and extrapolating forward in time, we can expect to discover another 200 native plant species in the California deserts over the next 50 years. Thus, approximately nine percent of today's California desert plants are not yet named by science.*[6]

In the belief that a functional network of connected wildlands is essential to the continued support of California"s diverse natural communities in the face of human development and climate change, the California Department of Transportation, the California Department of Fish and Game, and the US Department of Transportation commissioned the *California Essential Habitat Connectivity Project*.[7] It was completed in 2010. The *California Desert Connectivity Project* is currently underway to complete the 23 desert linkage designs. Ecological integrity or "naturalness" is used as primary basis for defining the natural landscape blocks.[8] The location and landscape wide acreage available for large scale solar development and transmission lines under the DSPEIS "No Action"

[5] Randall, J.M., S.S. Parker, J. Moore, B. Cohen, L. Crane, B. Christian, D. Cameron, J. MacKenzie, K. Klausmeyer and S. Morrison. 2010 Mojave Desert Ecoregional Assessment. Unpublished Report. The Nature Conservancy, San Francisco, California. 106 pages + appendices. Available at http://tinyurl.com/3t5rapn

[6] Andre, James; director, University of California Granite Mountains Desert Research Center. Email communication to Solar Done Right, February 17, 2011. Reported in US Public Lands Solar Policy: Wrong from The Start. P.7. April 4, 2011. Available for download at www.solardoneright.org .

[7] Spencer, W.D., P. Beier, K. Penrod, K. Winters, C. Paulman, H. Rustigian-Romsos, J. Strittholt, M. Parisi, and A. Pettler. 2010. California Essential Habitat connectivity Project: A Strategy for Conserving a Connected California. Prepared for California Department of Transportation, California Department of Fish and Game, and US Department of Transportation. www.scwildlands.org

[8] Ibid. p.5

and Modified Program Alternatives do not support the ecological integrity essential for successful linkage design. This research was timely but not found to be referenced in the Draft or Supplemental PEIS. The *California Essential Habitat Connectivity Project* map which includes the Desert Wildlands Blocks and the targeted linkages is provided on page 8 of this letter.

BLM lands are located in the basin, and throughout the California Desert, in a more or less hap-hazard array of varying size blocks of land with differing classifications. In the Morongo Basin BLM unclassified lands are checker-boarded with private lands. For instance, in the lower elevations surrounding Copper Mountain the average size of BLM unclassified parcels is 11 acres and the average size of private parcels is 8 acres. In the Pinto Mountain area, bordering JTNP, the No Action designation covers the 11,716 acre Pinto Mountain DWMA and a portion of the Mojave Fringe-toed Lizard ACEC.

The Morongo Basin was the first desert area to be thoroughly studied by South Coast Wildlands for linkage designs.[9] The Joshua Tree – Twentynine Palms connection specifically addressed how to prevent JTNP and MCGACC from becoming ecological islands. How do the linkage designs in the Morongo Basin overlap with the BLM Variance lands? The attached map (page 9 of this letter), produced by the Sonoran Institute, visualizes Variance lands in relation to the wildlife linkage designs. Both the No Action and the Modified Program Alternative obstruct the linkage designs at their north and south portals as well as many of the mid-linkage areas. The Modified Program Alternative carpets the residential community of Wonder Valley. Since the No Action (pink) lands remain on the map it is assumed that both wind and solar applications will be processed.

The SDPEIS maps show that non-wilderness BLM lands are never out of consideration for utility scale solar development, the rules just change. For instance, the „excluded" areas in the Riverside East SEZ show up on the map as pink No Action zones. The same is true for the „excluded" lands within the proposed Mojave Trails National Monument which are now No Action pink. Lands purchased with private monies and donated to the federal government for conservation, for example the former Catellus lands, should be fully excluded from the variance process. As it stands currently, they are mapped as No Action pink lands within the proposed Variance lands. We question: what does exclusion really mean? **Instead of blanketing all unprotected BLM land (non-wilderness) with a Variance designation of one kind or another, we suggest Variance lands should be eliminated throughout the California Desert. At a minimum, remove the No Action unfiltered lands from consideration including those purchased for their conservation values and gifted to the federal government.**

Local Planning

[9] South Coast Wildlands Reports: *A Linkage Design for the San Bernardino – Little San Bernardino Connection* 2005 and *A Linkage Design for the Joshua Tree – Twentynine Palms Connection* 2008 www.scwildlands.org

The 70,000 residents of the Morongo Basin are governed by General Plans developed by the Town of Yucca Valley, the City of Twentynine Palms, and the San Bernardino County including the Joshua Tree Specific Plan. The State of California mandates that the cities and counties develop General Plans so that growth and development is managed in an orderly well-planned manner that respects the natural environment, existing neighborhoods, and enhances community values. General Plan (GP) development and their updates take thousands of professional and citizen volunteer hours and can cost in excess of a million dollars. All of the mandated seven elements in a GP carry equal weight and must be consistent. The GP is the basis for the development code and ordinances. The GP undergoes a CEQA review. The linkages designs are incorporated in the local GPs as elements for land use, open space, and conservation planning. Although what happens in the Variance lands must be consistent with BLM land use plans, there is no certainty of consistency with local GPs.

In Table 2.3-2 it is stated that industrial solar development *could alter the character of largely rural areas.* There is no requirement for BLM to evaluate projects against local General Plans, development codes or ordinances. Rural communities, whose livelihood depends on its surrounding open space, deserve the same notification as livestock grazing operators (page 2-5). **Consultation with city and county planners and local citizen stakeholders is essential throughout the process.**

Local Economy

Future approved utility scale solar projects on BLM Variance lands could be considered a type of rogue sprawl development which does not contribute to orderly growth and development, does not support the tourism based economy, does not return significant revenue to local and county governments, does not provide any significant number of long term jobs, significantly threatens the wildlife linkages, and compromises the view shed for Joshua Tree National Park (JTNP) and the gateway communities. Visual Resource comments in Table 2.3-3 notes that a SEZ is visible within 25 miles of 149 sensitive resources in the Modified Alternative. The number increases to 1,510 for the No Action Alternative. **Using your figures, we request a 25 mile exclusion area around national parks.** This will go a long way toward avoiding projects that impact local planning and tourism economies of our gateway communities.

The economic value of JTNP to tourism was emphasized in two recent conferences – The Western Governors Conference in Yucca Valley and JTNP"s mini-conference "Economic Relationship Between National Parks and Gateway Communities." Following is a summary of remarks by Daniel Stynes, professor emeritus from Michigan State University who developed the NPS money generation model 2:

- JTNP"s 2010 economic impact: 1.44 million visits, 287,765 overnight stays. $58.8 million visitor spending within 30 miles, $6.4 million inside park. Local impact was 732 jobs, $23.4 million in labor income and $37.9 million value-added. The park itself has 140 employees

with an annual payroll of $8 million. Payroll impact is 162 jobs, $8.8 million labor income and $9.6 million value-added. Park payroll and visitor spending equal 900 local jobs.

• Per party per trip, locals spend $10.93 outside the park per visit, day-trippers spend $40.56; those who stay overnight spend $451.07, campers spend $84.67 and others spend $27.09.

• In 2010, 666,024 visitors spent $58.8 million in the Basin. Breakdown: Hotels/motels $20.6 million (35 percent); restaurants/bars $10.5 million (18 percent); gas and oil, $9.3 million (16 percent); groceries $4.6 million (8 percent); local transportation $4.4 million (7 percent); souvenirs $4.1 million (7 percent); camping fees $1.4 million (2 percent).

• Most visitors stay outside the park and many visit other area attractions. Spending inside the park is limited. Total package for visitors is Lodging, food, amusements, recreation, transportation, information, souvenirs.

• Officials must look at how to reach local visitors, day-trippers (those living within 60 to 90 miles), overnighters, national/international visitors. **They also must look at trip purposes: Biggest spenders are general sight-seers,** next is activity-oriented visitors, those for whom the park is their primary destination and those coming for special events.

The assumption that Utility Scale Solar Development will benefit the local economy needs to be tested against the data in the NPS Money Generation Model for Joshua Tree National Park[10].

Adaptive Management and Monitoring

We draw your attention to the recent paper in BioScience "Wildlife Conservation and Solar Energy Development in the Desert Southwest, United States".[11] The abstract is quoted below.

> *Large areas of public land are currently being permitted or evaluated for utility-scale solar energy development (USSED) in the southwestern United States, including areas with high biodiversity and protected species. However, peer-reviewed studies of the effects of USSED on wildlife are lacking. The potential effects of the construction and the eventual decommissioning of solar energy facilities include the direct mortality of wildlife; environmental impacts of fugitive dust and dust suppressants; destruction and modification of habitat, including the impacts of roads; and off-site impacts related to construction material acquisition, processing, and transportation. The potential effects of the operation and maintenance of the facilities include habitat fragmentation and barriers to gene flow, increased noise, electromagnetic field generation, microclimate alteration, pollution, water consumption, and fire. Facility design effects, the efficacy of site-selection criteria, and the*

[10]Daniel J. Stynes, Michigan State University http://35.8.125.11/mgm2_new/

[11] Jeffrey E. Lovich and Joshua R. Ennen. Wildlife Conservation and Solar Energy Development in the Desert Southwest, United States. BioScience 61:982-992

cumulative effects of USSED on regional wildlife populations are unknown. Currently available peer-reviewed data are insufficient to allow a rigorous assessment of the impact of USSED on wildlife.

This peer-reviewed paper sets a high bar for the adaptive management and monitoring strategy developed by the U.S.G.S. **These findings by Lovich and Ennen must be incorporated into the adaptive management and monitoring implementation strategy in the Final Solar PEIS.**

The Morongo Basin Conservation Association also supports the conclusions of Solar Done Right. www.solardoneright.org

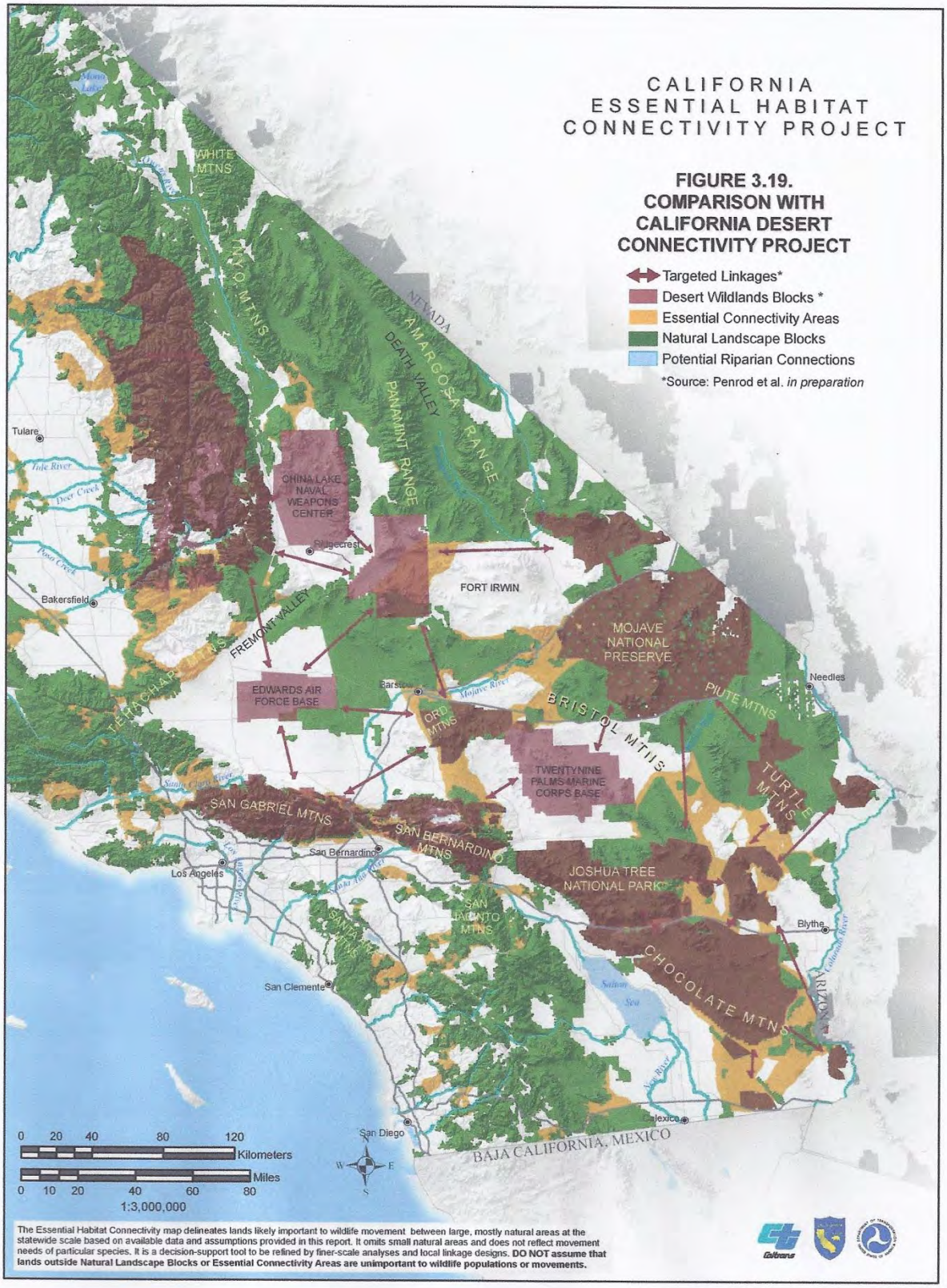
Habitat destruction threatens the diversity of life on our planet. Renewable energy strategies that damage habitat only make the problem worse. Distributed generation such as rooftop solar is the faster, cheaper, cleaner and more effective way of meeting our energy needs in the next century.

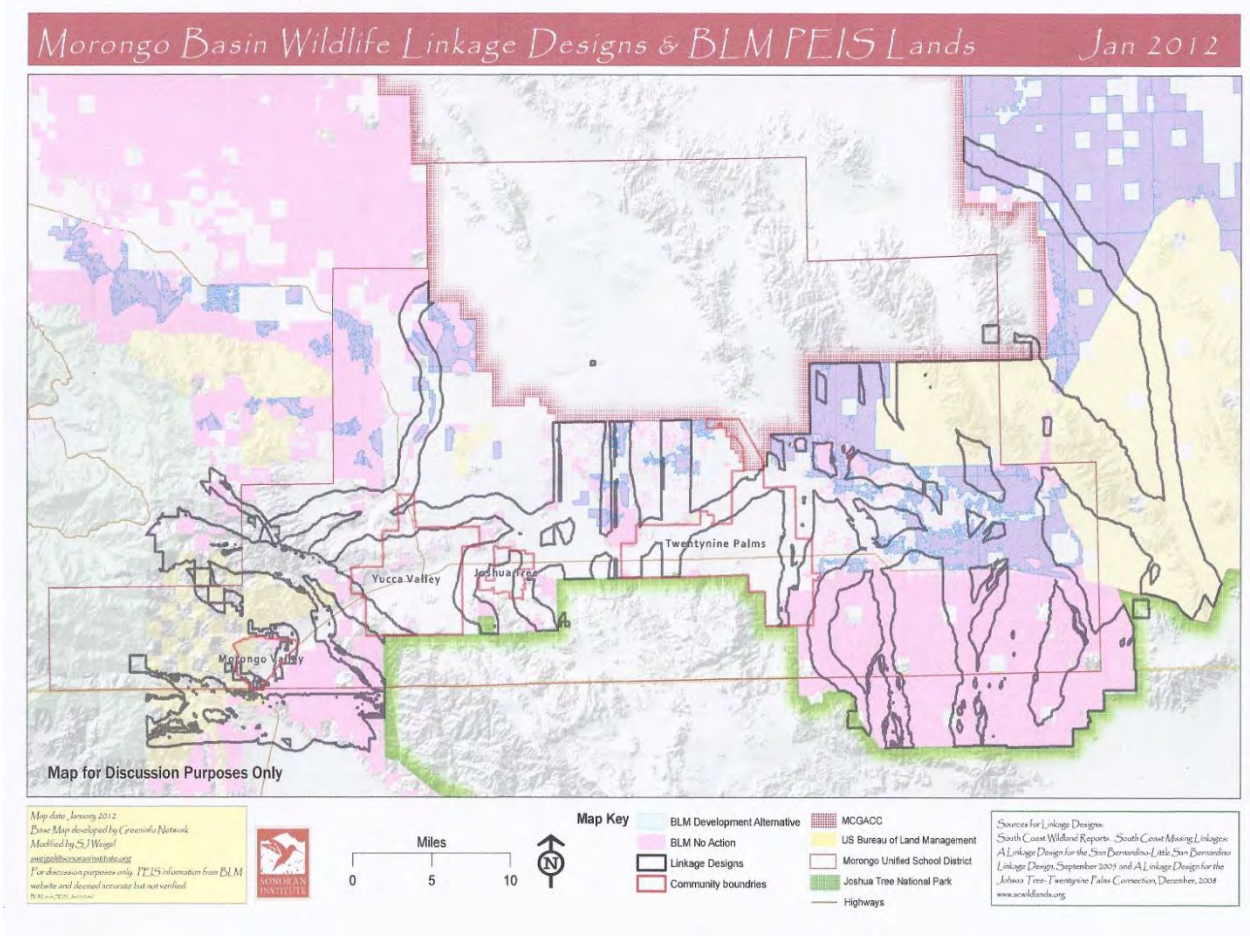
In summary, here are our recommendations:

1. **Instead of blanketing all unprotected BLM land (non-wilderness) with a Variance designation of one kind or another, we suggest Variance lands should be eliminated throughout the California Desert. At a minimum, remove the No Action unfiltered lands from consideration including those purchased for their conservation values and gifted to the federal government.**
2. **Consultation with city and county planners and local citizen stakeholders is essential throughout the process.**
3. **We request, at a minimum, a 25 mile exclusion area around national parks.**
4. **The assumption that Utility Scale Solar Development will benefit the local economy needs to be tested against the data in the NPS Money Generation Model for Joshua Tree National Park**
5. **These findings by Lovich and Ennen must be incorporated into the implementation plan for the strategy in the Final Solar PEIS.**
6. **These findings by Lovich and Ennen must be incorporated into the adaptive management and monitoring implementation strategy in the Final Solar PEIS.**

Sincerely,

Pat Flanagan,
Board Member, MBCA


CALIFORNIA
ESSENTIAL HABITAT
CONNECTIVITY PROJECT
FIGURE 3.19.
COMPARISON WITH
CALIFORNIA DESERT
CONNECTIVITY PROJECT
Targeted Linkages*
Desert Wildlands Blocks *
Essential Connectivity Areas
Natural Landscape Blocks
Potential Riparian Connections
*Source: Penrod et al. in preparation
WHITE MTNS
INYO MTNS
NEVADA
AMARGOSA RANGE
DEATH VALLEY
PANAMINT RANGE
Tulare
Tule River
Deer Creek
Poso Creek
Bakersfield
CHINA LAKE NAVAL WEAPONS CENTER
Ridgecrest
FORT IRWIN
FREMONT VALLEY
TEHACHAPI MTNS
EDWARDS AIR FORCE BASE
Barstow
Mojave River
MOJAVE NATIONAL PRESERVE
Needles
PIUTE MTNS
BRISTOL MTNS
ORO MTNS
TWENTYNINE PALMS MARINE CORPS BASE
TURTLE MTNS
SAN GABRIEL MTNS
SAN BERNARDINO MTNS
San Bernardino
Los Angeles
JOSHUA TREE NATIONAL PARK
SAN JACINTO MTNS
SANTA ANA MTNS
Blythe
CHOCOLATE MTNS
ARIZONA
San Clemente
Salton Sea
New River
Mexicali
San Diego
BAJA CALIFORNIA, MEXICO
0 20 40 80 120
Kilometers
0 10 20 40 60 80
Miles
1:3,000,000
The Essential Habitat Connectivity map delineates lands likely important to wildlife movement between large, mostly natural areas at the statewide scale based on available data and assumptions provided in this report. It omits small natural areas and does not reflect movement needs of particular species. It is a decision-support tool to be refined by finer-scale analyses and local linkage designs. DO NOT assume that lands outside Natural Landscape Blocks or Essential Connectivity Areas are unimportant to wildlife populations or movements.


Morongo Basin Wildlife Linkage Designs & BLM PEIS Lands
Jan 2012
Twentynine Palms
Yucca Valley
Joshua Tree
Morongo Valley
Map for Discussion Purposes Only
Map date: January 2012
Base Map developed by Greenwire Network
Modified by S.J.Weigel
sweigel@sonoraninstitute.org
For discussion purposes only. PEIS information from BLM website and deemed accurate but not verified.
SONORAN INSTITUTE
Miles
0
5
10
N
Map Key
BLM Development Alternative
BLM No Action
Linkage Designs
Community boundries
MCGACC
US Bureau of Land Management
Morongo Unified School District
Joshua Tree National Park
Highways
Sources for Linkage Designs:
South Coast Wildland Reports. South Coast Missing Linkages: A Linkage Design for the San Bernardino-Little San Bernardino Linkage Design, September 2005 and A Linkage Design for the Johua Tree-Twentynine Palms Connection, December, 2008
www.scwildlands.org

Thank you for your comment, Ginger Torres.

The comment tracking number that has been assigned to your comment is SEDDsupp20176.

Comment Date: January 27, 2012 20:37:07PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20176

First Name: Ginger
Middle Initial: S
Last Name: Torres
Organization: Pacific Gas and Electric Company
Address: 77 Beale Street, Mail code B24A
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State: CA
Zip: 94105
Country: USA
Privacy Preference: Don't withhold name or address from public record
Attachment: PGE Comments on the Supplement to the Solar PEIS 1-27-12.pdf

Comment Submitted:

Please find attached comments on the Supplement to the Solar Energy Development Draft Programmatic Environmental Impact Statement submitted by the Pacific Gas and Electric Company. See Attachment.

Thank you,
Ginger Torres on behalf of Diane Ross-Leech

Pacific Gas and Electric Company®

Diane Ross-Leech
Director
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January 27, 2012

Solar Energy PEIS
Argonne National Laboratory
9700 S. Cass Avenue
EVS/240
Argonne, IL 60439

Subject: **Pacific Gas and Electric Company's Comments on the Supplement to the Draft Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States**

Dear Solar PEIS Team:

Pacific Gas and Electric Company (PG&E) appreciates the opportunity to comment on the Supplement to the Solar Energy Development Draft Programmatic Environmental Impact Statement (PEIS) (Supplement) published in October 2011. We commend the work of the administration and federal agencies in addressing more than 80,000 comments received on the Draft Solar PEIS and proposing new strategies to resolve the complex issues associated with facilitating large-scale solar energy development on public lands.

PG&E is committed to providing safe, reliable, and affordable energy to 15 million Californians in the northern and central parts of the state and to being a partner in California's clean energy future. PG&E expects that new resources under development will allow us to meet the Renewable Portfolio Standard (RPS) compliance goals established in the recent 33 percent RPS by 2020 legislation. We have signed more than 110 RPS-eligible contracts since the start of the RPS program in 2002.

To meet California's aggressive RPS goals, development of additional RPS eligible resources is necessary. This development faces significant challenges in California, including lengthy and costly permitting and environmental review delays. PG&E appreciates the work of the administration and agencies in ensuring that all of the key energy policymakers in the six Southwestern states work together to achieve our mutual energy and environmental goals in a coordinated, comprehensive, and cost-effective manner.

PG&E supports the development of renewable resource technologies, as well as recognizes the need for protecting sensitive habitat and species in California, and supports a balanced approach to meet both objectives.

PG&E is also participating in California Transmission Planning Group, a multi-utility planning forum to coordinate utility transmission planning efforts to support the goal that any new transmission projects for delivery of renewable energy are sized appropriately to meet the needs of all load serving utilities in California. In addition, PG&E places high priority on upgrading existing transmission corridors as opposed to building new green field facilities with an eye to minimizing the footprint of new transmission.

As an active participant in the Solar PEIS review process, PG&E has previously provided comments on the Bureau of Land Management's (BLM) proposed Solar Energy Program in partnership with members of the California Desert and Renewable Energy Working Group (CDREWG). PG&E collaborated with the CDREWG to submit broad policy recommendations in a separate letter dated January 27, 2012.

I. Summary

The enclosed comments are intended to generally express PG&E's ongoing support for provisions of solar energy development siting flexibility as well as the need for implementing clear permitting incentives for developers to site projects within designated zones. We are supportive of a targeted and facilitated approach to siting projects in zones, such as the Solar Energy Zones (SEZs) proposed in the Draft Solar PEIS, combined with identifying and approving new SEZs in a timely manner and creating the proposed variance process to allow exceptional projects outside the zones.

We commend the BLM for incorporating stakeholder comments and feedback on the Draft Solar PEIS by refining SEZs to be carried forward into the Final PEIS, outlining a process for identifying new SEZs, including a description of the authorization process and incentives for projects in SEZs, outlining a variance process for developing projects outside of SEZs and specifying additional biological and cultural resources data and plans that could further facilitate development in SEZs. In particular, the newly proposed variance process for applications outside of SEZs will allow flexibility for developers to site exceptional, high potential, low environmental impact projects on appropriate lands outside of SEZs in the near-term until the necessary new SEZs are added to the Solar Energy Program. While we feel the variance process is necessary at this time for the reasons stated above, we look forward to a robust SEZ program that would be able to meet the goals of renewable energy development and resource conservation to the extent that requests to use the variance process are rare.

We recommend approval without delay of the Solar PEIS proposed Solar Energy Program in order to make available the agency resources that will be needed to identify, select and approve additional SEZs in California. As such, we urge the BLM to begin evaluating new SEZs immediately and in parallel to completion of the Solar PEIS.

II. New Solar Energy Zones and Coordination with the DRECP

PG&E commends the refinement and deletion of appropriate SEZs in the Supplement and BLM's simultaneous proposal of a new SEZ identification protocol. Because the remaining SEZs in California are not adequate to meet the Reasonably Foreseeable Development Scenario stated in the Supplement, the BLM should immediately work to identify new SEZs in California, with stakeholder involvement in a review process separate from the Solar Programmatic EIS.

As such, PG&E supports the highly coordinated integration of Solar PEIS SEZs and the renewable energy zones that are being evaluated in the Desert Renewable Energy Conservation Plan (DRECP), a habitat conservation plan (HCP) and a natural community conservation plan (NCCP). Recognizing that the planning processes for the Solar PEIS and the DRECP are on overlapping schedules, the two processes should be highly coordinated such that they present an integrated and consistent approach to guiding development toward appropriate locations within the southern California deserts. The DRECP should utilize SEZ identification protocol to identify lands appropriate for solar energy development. If the Solar PEIS is approved before the DRECP is completed, the Solar PEIS should allow expedited amendment for the addition of new SEZs on public lands that align with the DRECP findings. BLM should also provide a contingency method for expedited approval of zones under analysis for DRECP, even if the HCP/NCCP for the DRECP is not successfully completed as planned.

The Draft and Supplemental PEIS fail to consider recommendations for adoption of new SEZs in the West Mojave. The unique high insolation and biological values in this portion of the California Desert Conservation Area (CDCA) need strategic planning, investments in data collection and advance mitigation planning similar to the efforts outlined for SEZs. The BLM should incorporate stronger assurance that the DRECP will include outcomes supporting early identification of development zones and conservation strategies for the West Mojave so that this area is well-prepared for serious consideration as a new SEZ.

III. Transmission

PG&E is working collaboratively with key stakeholders both in California and across the nation to lay the foundation for a reliable transmission system that will—over time—provide core infrastructure for the delivery of clean and sustainable energy supplies.

New transmission lines are needed to accommodate new and anticipated renewable energy development. PG&E works with regulators, environmental organizations, government agencies and other stakeholders to support timely construction of transmission lines and permitting of proposed project sites. For example, PG&E has proposed the Midway-Gregg-Tesla Project that would move renewable power from southern and central California to PG&E's load in northern California. The Project is now being reviewed by the California Independent Systems Operator (CAISO) as part of its 2012-2013 Transmission Planning Process.

PG&E supports transmission development to accommodate interconnection and delivery of multiple resource areas to support a robust and competitive market for renewable resources. PG&E believes that greater transmission availability enables competitive markets by providing procurement options from multiple resource areas. Identification of SEZs and related transmission upgrades and additions will provide greater certainty and result in a more orderly, rational, timely, and cost-effective state and regional transmission planning and permitting process as well as result in the least impacts to biological resources.

PG&E has several suggestions regarding improvement to the transmission analysis in the Solar PEIS:

- Timing – The Riverside East and the Imperial East SEZs should be finalized and the process for creating new SEZs in California should be completed as soon as possible to allow CAISO to incorporate SEZ areas into their planning process as early as possible.

- Analysis of Transmission Capacity and Network Upgrades – The Solar PEIS should recognize the downstream upgrades and impacts to high voltage electrical transmission systems. The Solar PEIS should not assume that sufficient additional transmission capacity is available by simply upgrading existing lines. An analysis of existing transmission capacity is lacking in the Solar PEIS and is recommended for inclusion. The Solar PEIS should recognize that transmission network upgrades and additions will be needed to safely and reliably interconnect renewable energy resources from remote areas of the state to population centers. Although a majority of the direct transmission impacts from the Solar PEIS proposed policies and foreseeable development are located outside of PG&E's immediate service territory, some of our facilities may need to be upgraded to accommodate increased loads of power from concentrated solar energy development areas on BLM lands in southern California. For example, a Kramer – Midway transmission line may be needed to support delivery of the amount of power expected by the development anticipated in the Solar PEIS alternatives.

- Corridors – The Solar PEIS does not address the siting of new transmission lines needed within or adjacent to existing rights-of-way and utility corridors nor does it analyze the amount of new rights-of-way or corridors that might be needed to transmit energy into the load centers while adhering to the North American Electric Reliability Corporation (NERC) and Western Electricity Coordinating Council (WECC) reliability criteria. The transmission analysis within the Solar PEIS should include a discussion of the reliability of utilizing existing corridors for all necessary transmission lines, acknowledging transmission facilities standards. The Solar PEIS should facilitate contiguous corridor designation on public and private lands that serve SEZs or multiple projects. Inter- and Intra- State corridors should be seamless, consistent, sized strategically, and durable in term. Inclusion of transmission corridors in the Solar PEIS will ensure success of the SEZ approach. Efforts to streamline the transmission system infrastructure will facilitate development of environmentally responsible utility-scale renewable development in a timely fashion. Specifically, corridor designations in the West Mojave desert may be helpful. The BLM should prepare an evaluation of land and permitting impacts of new and potential upgraded transmission line corridors to deliver power from each SEZ under consideration while meeting the most current NERC and WECC reliability criteria. BLM should also facilitate expedited permitting including providing Federal nexus for Section 7 consultation for corridor projects that serve SEZs.

- Coordination – There should be increased coordination among BLM, state renewable energy policy makers and implementers (e.g., California Energy Commission [CEC], California Public Utilities Commission [CPUC], and Investor Owned Utilities [IOU]), and transmission planning policy makers and implementers (e.g., CPUC, CEC, IOUs, and the CAISO to facilitate solar development. In particular, site development should be closely coordinated with transmission development. For example, transmission line upgrades should be better coordinated such that their construction is completed as renewable projects come online. The BLM in coordination with the CAISO, CPUC, and IOUs should consider doing central planning for land, permitting, and transmission issues. We encourage the BLM to continue to engage with regional planning efforts, like WECC and others, to assist in identifying potential transmission corridors. We also encourage the BLM to coordinate with the CAISO's Revised Transmission Planning Process (RTPP) and seek to optimize the grid with technology diversification.

As stated above, the vast majority of the transmission upgrades and new transmission lines needed to achieve the objectives of the Solar Energy Program will occur outside of PG&E's service territory. Much of this work will occur within the service territory of Southern California Edison (SCE), and we take this opportunity to support the important points outlined in the comment letter submitted by SCE to the BLM on January 26, 2012. We concur with SCE's comments on the Supplement regarding treatment of transmission issues as well the shortcomings pointed out regarding the transmission analysis proposed for SEZs.

IV. Incentives

Section 2.2.2.2.3 of the Supplement provides information on incentives proposed by the BLM to make development in SEZs more attractive to industry, including transmission-related activities. We offer the following recommendations on the incentives proposed in the Supplement:

- The supplement includes incentives to facilitate faster and easier permitting in SEZs. The BLM should describe the methods that the agency will employ to adhere to strict schedules, such as increased staffing and specified timelines.
- The supplement states that the BLM may improve and facilitate mitigation through preparation of regional mitigation plans that will be presented in the Final EIS, and allowing developers to mitigate biological impacts through funding conservation priorities that are identified in a regional mitigation plan. This section is difficult to comment on since the mitigation is not provided and the conservation priorities are not identified, although this appears to outline a reasonable approach. We concur with the general principle on this subject which is stated in the January 27, 2012 comment letter from CDREWG stating that mitigation should be prioritized as "avoid first, then minimize, then restore, then offset." PG&E will continue working with other stakeholders in the CDRWEG to develop specific recommendations for mitigation.
- The supplement states that the BLM may facilitate the permitting of needed transmission to SEZs through including a more detailed evaluation of transmission needs and impacts for anticipated solar development in SEZs in the Final EIS, offering incentives to developers willing to build transmission to SEZs, committing BLM staff to engage in state transmission planning efforts, establishing cooperative agreements to facilitate permitting, and proposing to have the SEZs reviewed by the WECC. It is unclear how the BLM plans to integrate transmission considerations with state transmission permitting agencies such as the CPUC, and more development of this coordination would be helpful. For example, it would be helpful if BLM described the type of incentives that BLM offer to transmission developers. Also, this section is focused on transmission, but substation planning is a critical part of development and needs to be addressed in planning for renewable energy zones.
- New SEZs should be added to match overall renewable energy needs for the state, as driven by the Renewable Portfolio Standard and other state and federal mandates, and should clearly be shown as supporting public policy driven development. The amount of renewable energy needed should drive the amount of pre-permitted solar land added to new SEZs.

V. Exclusion Areas

Section 2.2.2.1 of the Supplement includes a modified list of proposed exclusions. The exclusion criteria adopted in the Solar PEIS needs to be sufficiently clear to ensure that areas unavailable for future solar development applications can be easily identified by agencies and the public and

that those areas can effectively be carried forward into future planning and implementation activities. The BLM should clarify this section in the following ways to provide greater certainty in the siting process for solar energy development projects:

- Avoid the use of vague language with regard to the Exclusion Criteria that is outlined in Table 2.2-1. Please refer to Attachment A of this letter for our detailed suggestions on this topic, and other specific comments on the Supplement.
- Provide detailed maps and data of exclusion areas to make compliance with these criteria straightforward. Mapped data would also facilitate timely agency evaluation. If exclusions will not be mapped for the Final PEIS, please indicate the size and scope of exclusion area acreages that could not be mapped and if they would exclude a significant portion of land within SEZs or currently shown as open to applications for development under the Preferred Alternative.
- Consider removal of solar insolation (number 2) from the list of exclusion criteria, especially for the variance process and identification of new zones. The BLM's Solar Energy Program should provide flexibility to accommodate a wide range of projects, particularly in a climate of rapidly changing technology. Exclusion area criteria should only include consideration of protecting environmental integrity, and new developments in solar energy technology may make current insolation needs an obsolete standard. Alternately, consideration should be given to the pilot program suggested in the January 27, 2012 joint comment letter from CDREWG in the section discussing the insolation criteria for exclusion.
- The PEIS should make clear that the exclusion areas apply only to renewable energy development and not necessarily to transmission line and appurtenant facilities (telecommunication, access roads, substations, etc.) needed to support the desired development.

VI. Definition and Processing Approach for New, Pending, and Approved Solar Projects

Section 1.7 of the Supplement describes how the BLM will process new and pending solar development applications. The document states that the BLM intends to continue to process all pending applications that meet due diligence and siting requirements under BLM's current policies and that all new applications will be subject to the Record of Decision (ROD) for the Solar PEIS. PG&E has power purchase agreements with some projects that are recognized as "Approved Solar Projects" according to Table 1.7-2 on page 1-13 of the Supplement and therefore would not be subject to the Solar PEIS ROD.

It is unclear how projects that are approved "but will require additional case-processing and environmental review to consider post-authorization requests to change technology" will be handled. Projects that have changed technology since being listed as "Approved Solar Projects" should not be subject to the Solar PEIS ROD, and if so, this should be clearly stated.

It is also unclear how projects located on private lands but requiring BLM right-of-way approvals for linear facilities that cross BLM jurisdiction would be affected by the Solar PEIS ROD. BLM should describe in the Solar PEIS the method by which projects proposed on non-BLM lands could take advantage of incentives offered to projects proposed on BLM land, such as priority right-of-way processing and expedited environmental review.

VII. Competitive Leasing Rulemaking

Section 1.8.2 of the Supplement describes the BLM's intentions to offer lands in SEZs through a competitive process. PG&E understands that BLM has decided to undertake rulemaking to establish a competitive process for offering public lands for solar as well as wind energy development. Finalization of the rulemaking process should be expedited and available with completion of the ROD to foster effective SEZ development. We recommend the following considerations during the rulemaking process in order to facilitate economical production of energy from solar resources:

- BLM should set appropriate terms for a competitive solar energy right-of-way lease. PG&E and other utilities are executing contracts with delivery terms of up to 25 years. The projects being built can be expected to operate for the term of the PPA, and potentially longer. The lease needs to be long enough for the developers to have assurance that they can build and operate their facility for its useful life, and not have the uncertainty of a potential lease termination mid-contract. This means the lease should be at least 30 years (to allow for construction of the project), or longer.
- On page 2-68, the Supplement states that the BLM has confirmed that it will offer lands within SEZs through a competitive process and would result in increased costs for developers of solar facilities. BLM should set a fixed price for land that would be consistent for all developers. Competition among developers in SEZs should be based on cost to build and operate renewable energy facilities, rather than ability to get land permitted. The BLM's competitive bid process should not result in an increase in the cost of electricity to consumers. Costs associated with renewable resources are already high and the PEIS should not take actions that further increase the cost of electricity to consumers, and thus work against public policy goals for clean energy development.

VIII. Comments on the Draft PEIS

PG&E submitted detailed comments on design features proposed in the Draft PEIS and understands that those comments will be addressed in the Final Solar PEIS. We respectfully resubmit our earlier comments on the design features for consideration (please see Attachment B – Specific Comments Previously Proposed on the Draft Solar PEIS).

We look forward to continuing to work with policymakers, regulators, and stakeholders to support California's renewable power goals while protecting land, water, and wildlife resources. In particular, PG&E reiterates support of the BLM, the DOE, and all stakeholders continuing to work collectively to improve the timing and efficiency of the permitting process for renewable energy projects on public lands. PG&E greatly appreciates your consideration of our comments.

Respectfully submitted,

Diane Ross-Leech

Enclosures:
Attachment A– Specific Comments on the Supplement to the Draft Solar PEIS
Attachment B – Specific Comments Previously Submitted on the Draft Solar PEIS

Attachment A – Specific Comments on the Supplement to the Draft Solar PEIS

No.	Topic	Chapter	Page	Line	Comment
	Exclusion Areas (Table 2.2-1)	2	2-16 2-17	4 11 13 14 29	Number 4: Same comment and previously written, "Proposed critical habitat was used as a factor to exclude lands. Proposed critical habitat is not protected under federal law, and because the listing of proposed critical habitat is extremely contentious, it is subject to significant change. Please indicate the frequency that exclusion areas will be updated based on legislative changes." We have reservations including proposed critical habitat in this criteria as these proposed areas may never become designated. Number 11: The BLM should avoid the use of vague language and provide clear, concise guidance for development. Please indicate the seasonal restrictions. Numbers 13 and 14: Big game ranges are often very large. Would projects with small footprints compared to the size of the range or corridor be subject to this criterion? Number 29: BLM should specify additional areas that may require exclusion would be determined. Can areas change depending on BLM staff? General comment: For all resources, buffer widths should be specified if required.
	Proposed Variance Areas: Desert Tortoise Variance Process Requirements Under Consideration	2	2-35	28-46	BLM should modify Option 2 to provide more clarity. As written, the option appears to be impossible to comply with because of the following concerns: What happens if more than 5 tortoises per square mile are located in the project area but they have a MCL of less than 160mm? Why is there is discrimination between class sizes? The requirement for pre-project surveys should be dependent on size of a site; there is a difference between a 1,500 acre site and a 160 acre site that is not reflected in the criteria. It is

No.	Topic	Chapter	Page	Line	Comment
					not clear how the connectivity buffer would work. What if the site was not 3 miles long, how would the connectivity buffer be sited? It would be helpful if BLM provided more specificity on option with regard to the above questions in the Final PEIS.
	C.2 California Proposed Solar Energy Zones - Imperial East and Riverside East	Appendix C Section C.2.1.5 and C.2.2.5			The Action Plans detailed in Section C.2.1.5 and C.2.2.5, Additional Data Collection Recommended, would make SEZs more effective but it would be more helpful if BLM provided the following information in this section: Who is responsible for collecting data specified in the action plans, the BLM or the Applicant? Much of the information reads like it is the responsibility of the BLM, while other information suggests data collection is to be conducted by the applicant. When is this information required? Is this just in support of the PEIS or is this information requested as part of the right-of-way application? How many of the items on the list can be accomplished in the short term?

Attachment B – Specific Comments Previously Submitted on the Draft Solar PEIS

No.	Topic	Chapter	Page	Line	Comment
23	Design Features	Appendix A	A-36	44-46	Please define "action." Some preconstruction activities could be permitted to occur prior to marking of property boundaries and PLSS.
24	Design Features	Appendix A	A-37	35-38	Please clarify how long is "recent" and whose responsibility would it be to conduct wilderness inventories. BLM should provide records of wilderness proposals that can be accessed by the public.
25	Design Features	Appendix A	A-39	13-14	Generally speaking, it is difficult to provide public access through a solar facility.
26	Design Features	Appendix A	A-39	16-17	Please clarify the definition of a unique or important recreation resource.
27	Design Features	Appendix A	A-39	19-23	Regarding replacement of acreage for off-highway vehicles, please clarify how secondary impacts associated with this mitigation would be evaluated.
28	Design Features	Appendix A	A-39	39-44	Regarding evaluating impacts from the solar energy facility in regards to the operation of existing military installations, please clarify how to quantify whether displacement of species onto their facilities was occurring.
29	Design Features	Appendix A	A-41	15 and general	There is a lot of discussion in the measures about "adequate" space and buffers from sensitive areas; however, please clarify how adequate is defined and the size of the buffer.
30	Design Features	Appendix A	A-41	39	Please indicate the recommendations for design of temporary roads.
31	Design Features	Appendix A	A-41	27	In some locations, it will be impossible to avoid existing desert washes when designing and building new roads.
32	Design Features	Appendix A	A-42	22-23	Minimization of ground-disturbing activities during the rainy season may not be feasible for large-scale solar facilities. The safety of the workers should also be taken into consideration, as work during the non-rainy season is extremely hot. Also, please

No.	Topic	Chapter	Page	Line	Comment
					clarify is this means winter/spring rainy season or monsoon season or both.
33	Design Features	Appendix A	A-42	39-40	We suggest providing examples of BMPs that would be acceptable in wildlife crossing areas.
34	Design Features	Appendix A	A-42	18	Water may not be the most appropriate dust stabilizer in desert environments.
35	Design Features	Appendix A	A-51	9-12	PEIS states that the EPA will ask for additional turbidity sampling. This does not apply in California.
36	Design Features	Appendix A	A-53	18 and general	"Special construction techniques" should be specified, here and in other design features.
37	Design Features	Appendix A	A-54	30 and general	The responsible party and frequency for "monitoring" proposed design features should be specified, here and throughout.
38	Design Features	Appendix A	A-55	Footnote 2	Note that USFWS Species of Concern are included in the list of special-status species; USFWS Species of Concern are not protected under the law.
39	Design Features	Appendix A	A-56	17-20	The measure states not to site projects in designated critical habitat. Please clarify if this applies to habitat that does not support the species and if a situation arises where there are no primary constituent elements present.
40	Design Features	Appendix A	A-57	1-2	Please indicate the recommended distance of siting facilities in proximity to open water or areas supporting large numbers of birds and clarify what is considered a "large number of birds".
41	Design Features	Appendix A	A-57	7	"Tall structures shall be located to avoid known flight paths of birds and bats." Please indicate the maximum allowable height.
42	Design Features	Appendix A	A-57	17-18	Fencing as described would not allow installation of wildlife-friendly four-inch gap that we are using on other sites to facilitate (San Joaquin kit fox) species movement.
43	Design Features	Appendix A	A-58	1-5, general	When design features state that facilities should be designed to minimize impacts, they should also state specific recommendations

No.	Topic	Chapter	Page	Line	Comment
					for minimizing impacts.
44	Design Features	Appendix A	A-59	21-22	Nesting buffers should also be established in conjunction with the state agencies. There are also situations where the biological monitor can determine an appropriate nesting buffer without consultation with agencies.
45	Design Features	Appendix A	A-65	7-13	Please assure that agencies have time to attend the seasonally appropriate walkthroughs.
46	Design Features	Appendix A	A-66, 67	45-46,1-4	Please indicate why we need to consult with the agencies if active nests are not detected.
47	Design Features	Appendix A	A-68	6-8	Please indicate the timeframes for "immediate" revegetation.
48	Design Features	Appendix A	A-70	23-24	Pleas indicate the metric used to determine whether revegetation is "similar" to pre-construction conditions.
49	Design Features	Appendix A	A-71	37-38	Confirm that tree cutting is not in conflict with CPUC General Order 95.
50	Design Features	Appendix A	A-71	42-43	Use of helicopters can have significant impacts on air quality.
51	Design Features	Appendix A	A-72	29,39	Removal of raven's nests from transmission towers is likely not a CDFG-approved activity. Please indicate whose responsibility it would be to conduct nest removal activities.
52	Design Features	Appendix A	A-77 to 79		Design Features for Visual Resources indicate a need to conduct early visual studies to evaluate impacts to development during the siting process, a timely and economically intensive activity not typically conducted until further along in the development phase after a site has been selected.
53	Design Features	Appendix A	A-81	18-21	Add "if feasible" in regards to transmission line/pipeline routing
	Design Features	Appendix A	A-82	24-26	

No.	Topic	Chapter	Page	Line	Comment
54	Design Features	Appendix A	A-89	22-42	Please indicate the methodology for off-site mitigation of visual impacts – and how equal magnitudes are determined for mitigation.
55	Design Features	Appendix A	A-90	6-11	Noise monitoring should not be necessary if there are no sensitive receptors nearby.
56	Design Features	Appendix A	A-90, A-91	14, 4, 26, 43	"Nearby" is used in mitigation measure but not defined
57	SEZ Design Features	Appendix A	A-116	General	With implementation of design features, it would be beneficial for BLM to quantify the amount of SEZs are available for development and how many acres are precluded from development based on the design features listed.
58	SEZ Design Features	Appendix A	A-116 to 119	Imperial East SEZ	The design features for this SEZ list the following areas as off-limits to development: desert washes, wetlands in the western and southern portions of the SEZ, sand dunes in the northern and eastern portion of the SEZ, areas near the All American Canal. Surveys and tribal consultation would be required for potential burial sites. USFWS consultation and surveys would also be needed for specified wildlife and plants. Design features would be improved if more specific information is provided about the specific areas that should be avoided, including quantified and mapped locations, and specific buffer distances should be recommended.
59	SEZ Design Features	Appendix A	A-116 to 119	Iron Mountain SEZ	Similar comment to above, Design features would be improved if more specific information is provided about the specific areas that should be avoided, including quantified and mapped locations, and specific buffer distances should be recommended. This SEZ seems to have a considerable amount of lands off limits to development: KSLA, sand and gravel areas, Danby Lake (25,000 acres), Colorado River Aqueduct, Homer Wash, dunes, unique habitats (e.g. dry wash), and historical sites. Surveys and tribal consultation would be required for potential burial sites. USFWS consultation and surveys would also be needed for specified wildlife and plants.

No.	Topic	Chapter	Page	Line	Comment
60	SEZ Design Features	Appendix A	A- 119 to 128	Riverside East SEZ	Similar comment to above, Design features would be improved if more specific information is provided about the specific areas that should be avoided, including quantified and mapped locations, and specific buffer distances should be recommended.
61	SEZ Design Features	Appendix A	general		The PEIS should present a comprehensive Map that shows all areas that should be avoided or are precluded from development within each SEZ.
62	California Transmission Planning Activities	Appendix D	Section D.3, Page D-21 to D-30		Section D.3.2 describes the California Renewable Energy Transmission Initiative (RETI) and Section D.3.3 describes the California Transmission Planning Group (CTPG). The RETI has concluded its work, and PG&E will continue to follow up and participate in the CTPG and other joint planning processes to shape and influence the new renewable transmission lines that would bring power out from the four California SEZs.
63	Transmission	Appendix G	G-1	26-28	"This transmission analysis only considered the locations of existing transmission lines and designated corridors and did not look at the available capacity on existing lines (i.e., the analysis assumed lines could be upgraded, if needed)." – This assumption is inadequate and should be reevaluated because upgrades to transmission lines are not easily accomplished and may not be feasible.
64	Transmission	Appendix G	G-3	41	The document states "approximately 35 lines planned for California..." The PEIS should provide a table of the planned lines.
65	Transmission	Appendix G	G-8	Figure G-3	The map resolution in the figure showing transmission lines and corridors is too vague and the proposed lines cannot be seen clearly. It would be great if the report provided a map per state and provide greater resolution.

Thank you for your comment, Raymond Hiemstra.

The comment tracking number that has been assigned to your comment is SEDDsupp20140.

Comment Date: January 27, 2012 16:38:15PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20140

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

Comment Submitted:

I support the use of zoning for for the permitting of solar facilities. There is plenty of land available for solar facilities using only the zones proposed for solar use in the draft plan. Solar facilites should not be built in areas that are outside of the proposed zones except on private property.

Thank you for your comment, Ian Black.

The comment tracking number that has been assigned to your comment is SEDDsupp20141.

Comment Date: January 27, 2012 16:48:03PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20141

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Attachment: enXco SDPEIS Comment Letter 27 Jan 2012 Final.pdf

Comment Submitted:

27 January 2012

U.S. MAIL & INTERNET FORM

Solar Energy Draft PEIS
Argonne National Laboratory
9700 S. Cass Avenue, EVS/240
Argonne, IL 60439

Re: Comments of enXco, Inc. on the Supplement to the Draft Solar Programmatic Environmental Impact Statement

To whom it may concern:

Thank you for the opportunity to comment on the Supplement (SDPEIS) to the Solar Energy Development Draft Programmatic Environmental Impact Statement (PEIS) prepared by the U.S. Department of Energy, Energy Efficiency and Renewable Energy Program (DOE) and the U.S. Department of the Interior, Bureau of Land Management (BLM) pursuant to the National Environmental Policy Act (NEPA).

enXco, Inc. is one of the oldest and largest full service renewable energy companies in the United States, with more than two decades of experience. enXco undertakes three core activities: development, operations and maintenance, and asset management services. Since 2002, enXco has been an affiliate of EDF Energies Nouvelles, a French company that specializes in renewable energy with a gross installed capacity of over 3,805 megawatts (MW) worldwide.

enXco's development team has successfully developed projects for clients such as Xcel, MidAmerican, PG&E and SDG&E. To date, enXco has developed nearly 2,000 MW of wind projects and has 89 MW of solar photovoltaic (PV) capacity in operation or under construction in the United States and Canada. enXco has multiple solar PV projects under application on BLM-administered lands.

enXco headquarters are located in San Diego, California, with regional development offices in Minneapolis, Minnesota; San Ramon, California; Portland, Oregon; and Denver, Colorado. enXco also operates a state-of-the-art Operations Control Center in Chandler, Minnesota, monitoring nearly 3,000 turbines across the nation. The company has over 800 employees located in 17 states.

1. Introduction and Summary of Comments

In this letter, enXco has chosen to focus its comments on areas which are of particular relevance to its own projects, namely, the pending projects exemption and certain new restrictions

proposed within the Riverside East and Dry Lake SEZs. Those comments are detailed in the pages below.

However, there are a series of other concerns enXco shares with most if not all of its industry peers regarding other aspects of the SDPEIS, which are separately addressed by the comments of the solar trade organizations to which we belong. Specifically, enXco favors the BLM-preferred Modified Solar Energy Development Program Alternative of the SDPEIS over its Modified SEZ Program Alternative. enXco shares industry concerns over the proposed variance determination process as well, which in our opinion should be driven by consideration of BLM's existing "conflict" criteria of Instruction Memorandum 2011-061, rather than by the criteria proposed in the SDPEIS, which would greatly reduce the likelihood of ever obtaining a variance approval. We also favor addressing desert tortoise impacts on a case-by-case basis instead of by prescriptive quantitative criteria and connectivity maps that appear to have little foundation in existing studies and that, in any event, are likely to change far too frequently to be hard-wired into such a high-level program. Finally, we believe the creation of new SEZs should occur more often than every five years, with a clear right for developers to propose new SEZs outside of regional efforts such as the Desert Renewable Energy Conservation Plan.

2. Pending Applications

The SDPEIS states that pending applications will be subject to "continued processing under existing policies,"[1] including the February 2011 Instruction Memoranda (Nos. 2011-059 to 2011-061). enXco supports the exclusion of pending applications from the terms of the PEIS and its Record of Decision (ROD). However, the SDPEIS does not clearly state the pending projects exemption and some provisions actually contradict it. enXco therefore respectfully requests the following clarifications.

a. Clarify ambiguous language

The SDPEIS states that pending projects will continue to be processed under "existing regulations and policies." However, the PEIS will itself become "existing policy" upon issuance of its ROD. enXco therefore recommends:

- clearly defining "existing regulations and policy" to mean regulations and policies in effect prior to adoption of the PEIS ROD; and

[1] Table 1.7-1, page 1-9.

- adding language to the PEIS and its ROD expressly stating that pending projects are not subject to the PEIS before or after issuance of its ROD, and will instead be processed as though the "no action" alternative had been adopted.

To avoid similar confusion, enXco also recommends qualifying the following provision, "The ROD for the Solar PEIS will recognize all previously approved solar projects"[2] by adding the following clause: "and will expressly exclude pending projects from its terms."

b. Delete express contradictions and modify implicit contradictions

Some language in the SDPEIS contradicts the pending projects exemption and should be deleted. For example, the following provision assumes the PEIS ROD would apply to pending projects:

> Pending applications on lands proposed as exclusion areas for utility-scale solar energy development in the Final Solar PEIS are likely candidates for denial. Upon issuance of the Solar PEIS ROD, the BLM may deny pending applications to the extent such applications overlap with exclusion areas identified in the ROD for the protection of ecological, cultural, visual, or other specified resource values.[3]

enXco recommends deletion of this language because it undermines the pending projects exemption. FLPMA, the 43 C.F.R. Part 2800 regulations, and BLM's February 2011 Instruction Memoranda already provide BLM with the tools it needs to reject pending applications.

Other provisions of the SDPEIS contradict the pending projects exemption by implication. For example, by stating that the BLM may deny pending applications *before* adoption of the PEIS, the following statement creates a presumption that the PEIS will apply to pending projects *after* its adoption: "The BLM may decide to deny pending solar applications before completion of the Solar PEIS ROD if the BLM has a supportable, rational basis."[4] enXco therefore requests replacement of this sentence with the following: "Although BLM will not apply the Solar PEIS to pending solar applications, the BLM still may decide to deny pending solar applications if the BLM has a supportable, rational basis on other grounds."

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[2] Page 1-12, line 18.
[3] Page 1-11, lines 14-18.
[4] Page 1-10, lines 24-25.

c. Specify how to implement the pending projects exemption

Although the pending projects exemption is a clear concept, its application is less clear, particularly with regard to substantive resource matters. Because the PEIS is a prospective document intended to regulate and facilitate solar development applications submitted after 30 June 2009, enXco recommends the following additions to the SDPEIS to ensure proper implementation:

- language stating that the PEIS maps do not apply to approved or pending project sites unless the approved project is cancelled or the pending project application is withdrawn or rejected. We recommend overlaying approved and pending project boundaries on each of the PEIS maps with a legend item summarizing this concept.

- language stating that neither the maps nor the resource determinations of the PEIS are to inform pending project NEPA analyses, which shall instead independently assess project-specific resource issues on a case-by-case basis.

3. New SEZ Restrictions and Boundary Changes

a. New Riverside East SEZ restrictions and designations

enXco respectfully requests reconsideration of several new restrictions and designations within the Riverside East SEZ.

i. Height restrictions

enXco's 2 May 2011 comment letter on the Draft PEIS discussed at length why the proposed Visual Resource Management (VRM) designations for the Riverside East SEZ are too stringent. The new VRM design features proposed in the SDPEIS also go too far.

Limiting all development within VRM Class II lands, and all solar development within VRM Class III lands, to 10 feet or less[5] would result in unintended adverse consequences without appreciably reducing visual impacts. The design feature would prohibit more efficient tracking PV technologies (which can reach heights of 7.5 meters (25 feet)), resulting in larger project footprints and a corresponding increase in environmental impacts. Moreover, the roughly 15-foot height difference between fixed and tracking PV technologies does not appreciably alter

[5] Page C-58, lines 13-19.

visual resource impacts, particularly when they are viewed from a distance or from above, as in the case of Joshua Tree National Park. Such issues should be addressed on a case-by-case basis instead.

The same holds for another newly proposed design feature requiring the undergrounding of transmission lines in all VRM Class II lands.[6] Undergrounding of transmission lines is often suggested as a form of visual mitigation. But the practice is frequently rendered infeasible by the greater biological, cultural, air quality and noise impacts of construction, the difficulty of access for maintenance, and the roughly 8- to 9-fold additional expense, as the BLM has itself concluded with regard to the Desert Sunlight project. Please refer to the Desert Sunlight ROD, attached hereto as Exhibit A, for a full explication of the infeasibility of undergrounding transmission lines within the Riverside East SEZ. Instead, a programmatic design feature requiring the co-location of transmission lines on the same poles where feasible would be a better solution, as proposed in enXco's 2 May 2011 comment letter on the Draft PEIS.

Finally, limiting all vertical structures to 100 feet or less within VRM Class II and III lands presents significant engineering challenges when conducting voltages as high as those generated by utility-scale solar projects. In many cases a 100-foot limit would be infeasible. Because such limitations vary by project, enXco recommends replacing the 100-foot limitation with a case-by-case standard based on minimum high-voltage engineering standards.

ii. Undevelopable streambeds

Figure C.2.2-2 of the SDPEIS depicts a streambed within the pending Desert Harvest project and the McCoy Wash as "undevelopable," without any justification. However, the wash on the Desert Harvest project site has already been stemmed by a berm constructed along the southern boundary of the approved Desert Sunlight project and no longer flows through the Desert Harvest project site. The designation therefore should be removed.

Categorically prohibiting development over the McCoy wash is overly restrictive. The McCoy Wash is subject to the jurisdiction of the California Department of Game and the U.S. Army Corps of Engineers, agencies that have well-developed regulatory programs for the comprehensive management of jurisdictional streams. Whether development should be allowed to occur across a portion of the McCoy Wash and how it should be mitigated should instead depend on the specific resources associated with the stream as they relate to a given project's site

[6] Page C-344, lines 6-10.

plan, as determined by that project's NEPA review and by the CDFG and the U.S. Army Corps of Engineers.

iii. Wilderness Characteristics

Figure C.2.2-3 of the SDPEIS depicts approximately 11,925 acres of the eastern side of the Riverside East SEZ as having wilderness characteristics based on a 2011 wilderness inventory that is not included in the SDPEIS. enXco questions this designation in light of its apparent departure from the 2010 VRI Class III designation of the same lands and the DPEIS' corresponding proposal not to manage the lands under VRM Class II or III. We also question whether the lands really can be deemed to embody the "naturalness[] and outstanding opportunities for either solitude or primitive and unconfined recreation"[7] required of wilderness when the lands lie in such close proximity to the approved Blythe Solar project, the Blythe Airport and the Town of Blythe.

If the designation remains, however, we recommend that the wilderness characteristics lands identified within the Riverside East SEZ be managed to allow solar development without further restrictions beyond those already identified in the Draft PEIS. A wilderness characteristics designation is an inventory decision, not a management decision. As BLM's own guidance recognizes, a land use plan may "emphasiz[e] other multiple uses as a priority over protecting wilderness characteristics."[8]

Page C-76 the SDPEIS states that, as a result of the new wilderness characteristics designation, "additional analysis of the visual values of these areas may be needed to determine if adjustments to the SEZ-specific mitigation identified in the Draft Solar PEIS are warranted." If the additional visual analysis results in a conclusion that the areas should be designated as "VRM Class II or III consistent," stringent and prohibitively costly visual resource mitigation requirements would apply to this area. Solar energy resource values and uses would be forgone or adversely affected as a consequence, which speaks directly to one of four important factors to consider when deciding whether to prioritize other uses as a priority over wilderness characteristics.[9]

The solar energy resource value of the SEZ lands in question is clear. The Riverside SEZ identifies BLM-administered lands best suited for solar development, based on both energy and

[7] IM No. 2011-154, (25 July 2011); Attachment 1, pp. 4-8.
[8] IM No. 2011-154, (25 July 2011); Attachment 2, p. 1.
[9] IM No. 2011-153 (25 July 2011); Attachment 2, p. 2.

environmental considerations, and refined through public comment after publication in the Federal Register.[10] As such, it is a concrete manifestation of the national energy priorities expressed in the Energy Policy Act of 2005, Executive Order 13212, and Secretarial Order 3285A1. Since its identification, the Riverside East SEZ has already been reduced by 23 percent, with a substantial portion of the remainder subject to exceedingly stringent visual VRM Class II and Class III resource management design standards, even though there is a general consensus among both industry and conservationist groups that it is an appropriate area for solar development. Further reductions or restrictions within arguably the most important of all the SEZs (and perhaps the only remaining SEZ large enough to accommodate multiple projects) run the real risk of undermining the national energy priorities the SEZ embodies. We therefore recommend against further restricting development in the Riverside East SEZ on the basis of the 2011 wilderness characteristics inventory. This approach is consistent with BLM's wilderness characteristics guidance. Moreover, BLM could offset the management decision by prohibiting development in the adjacent wilderness characteristics lands lying outside the SEZ, as identified by the same inventory.

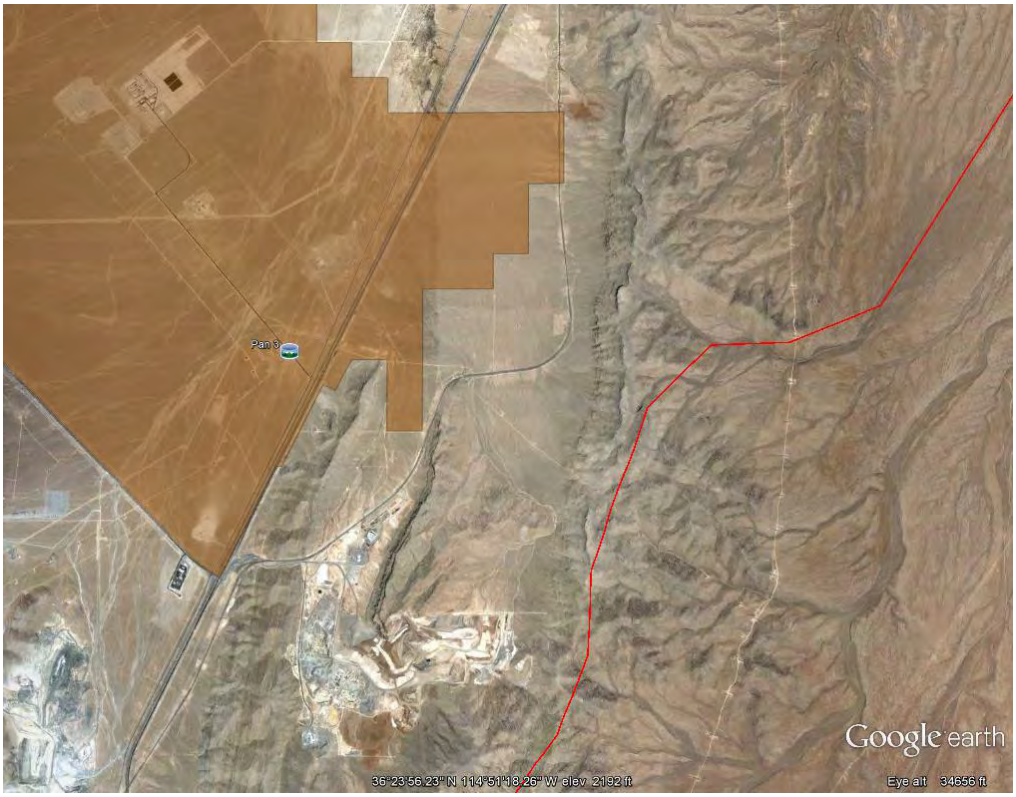
b. Dry Lake SEZ Boundary Change

The SDPEIS proposes removing the portion of the Dry Lake SEZ lying southeast of I-15 due to concerns regarding potential impacts to the Old Spanish National Historical Trail.[11] However, as the KMZ files for the Draft PEIS attest, this portion of the originally proposed Dry Lake SEZ is almost entirely screened from the Old Spanish National Historical Trail by an intervening ridge of the Dry Lake Range (See Figure 1, below). In addition, the trail turns east and away from the SEZ at approximately the same point it reaches the portion of the original SEZ lying southeast of I-15. Moreover, if a viewer follows the trail at ground level on Google Earth, the few mountain-top locations along the trail where the SEZ can be viewed reveal the SEZ lands *west* of the I-15; lands to the east of the I-15 for the most part remain obscured from view due to their close proximity to the base of the intervening ridge. Figures 2 and 3 below illustrate this effect by showing where the trail is visible (in red) from the I-15 (Figure 2) and from the eastern edge of the original SEZ (Figure 3). Because the lands east of I-15 for the most part cannot be seen from the Old Spanish National Historical Trail (and in fact appear to be less visible than the rest of the SEZ), enXco requests their reincorporation into the Dry Lake SEZ.

[10] 74 FR 31307.
[11] C-169, lines 24-27.

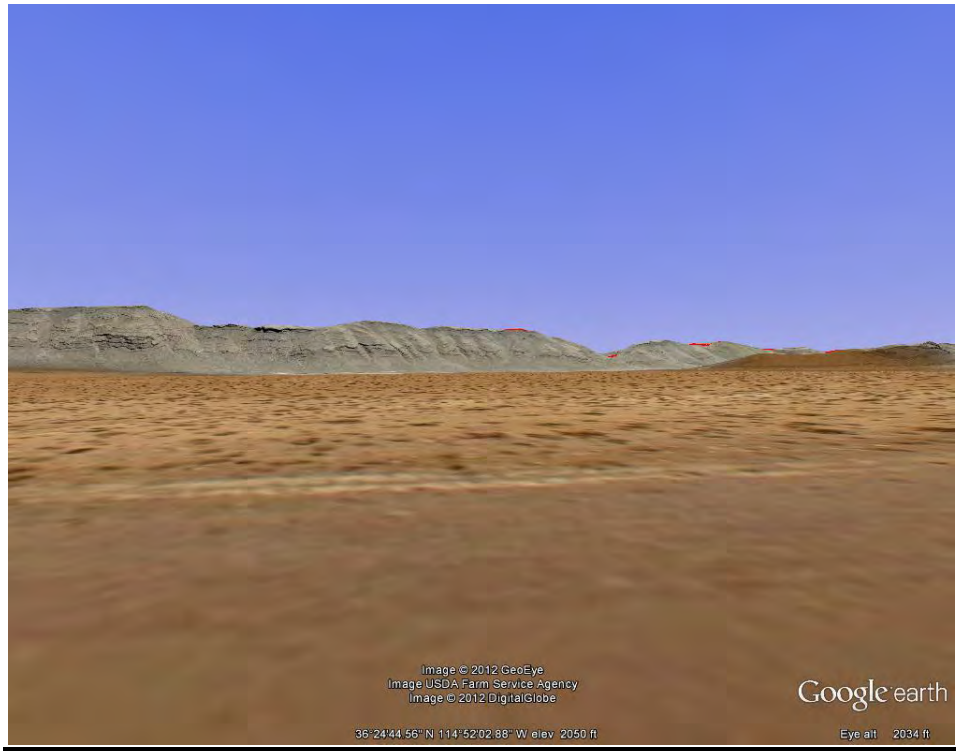
Figure 1

Originally Proposed Dry Lake SEZ and Old Spanish National Trail



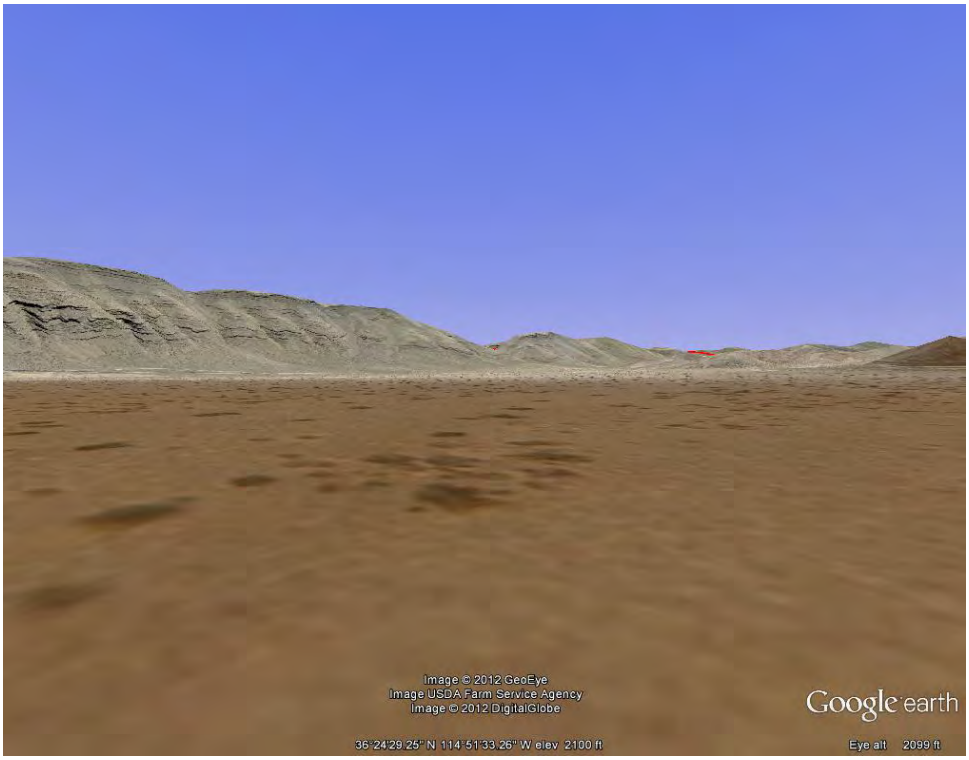
Source: Draft PEIS KMZ Files.

Figure 2
Example of Old Spanish National Trail Segments Visible from I-15



Source: Draft PEIS KMZ Files.

Figure 3
Example of Old Spanish National Trail Segments Visible from
Eastern Edge of Original Dry Lake SEZ



Source: Draft PEIS KMZ Files.

4. Conclusion

enXco sincerely appreciates the efforts of BLM and DOE to promote environmentally responsible solar energy development of BLM-administered lands through the PEIS process. The important modifications we have discussed above will ensure that the PEIS meets the mandates of the Energy Policy Act of 2005, Executive Order 13212, and Secretarial Order 3285A1 by expediting and prioritizing solar development without compromising environmental values, a balance which the multiple use mandate of FLPMA is ideally suited to strike.

Thank you for your time and consideration.

Sincerely,

Ian Black // acb

Ian Black
Solar Development
enXco - an EDF Energies Nouvelles Company

Enclosures

Exhibit A: Feasibility of Undergrounding Transmission Lines

Exhibit A

Feasibility of Undergrounding Transmission Lines

33 percent RPS deadline in 2020. There would have to be a significant acceleration of installation of both distributed and non-distributed generation to meet the goals defined in California's RPS. Large-scale projects play an important role in meeting these goals.

Conclusion. A distributed solar alternative was eliminated from detailed discussion because it does not respond to the BLM's purpose and need for the Proposed Action, which is to respond to Desert Sunlight's application for a ROW grant to construct, operate, and decommission a sPV facility on public lands in compliance with FLPMA, BLM ROW regulations, and other federal applicable laws. Additionally, the Energy Policy Act of 2005 established a goal for the Secretary of the Interior to approve 10,000 MW of non-hydropower renewable energy projects located on public lands. The Act reflects Congress's conclusion that installation of renewable energy technologies on public lands capable of producing at least 10,000 MW is appropriate. Given the current state of the technology, only utility-scale renewable energy generation projects are reasonable alternatives to achieve this level of renewable energy generation on public lands. Furthermore, the BLM has no authority or influence over the installation of distributed generation systems, other than on its own lands.

4.2.9 Underground Installation of Gen-Tie Lines

Underground transmission lines at 230 kV have been installed or are planned to be installed in California by Pacific Gas & Electric Company (its Northeast San Jose, Tri-Valley, and Jefferson-Martin Projects) and by San Diego Gas & Electric Company (its approved Otay Mesa and Sunrise Powerlink Projects). These lines, or portions of them, have been installed underground either due to congested urban areas where there is inadequate space for overhead high voltage lines, or (in the case of Tri-Valley and Jefferson-Martin) to reduce visual impacts in scenic areas.

While underground lines would reduce the visual effects of the transmission lines, they have several disadvantages with respect to their environmental impacts. The impacts are driven mostly by construction disturbance. The construction of underground transmission lines requires substantial ground disturbance to install the trench and cables. The least amount of disturbance would occur when installing the gen-tie line within a paved roadway. However, when adding the lengths of all three gen-tie line alternatives, there are only approximately 6 miles out of a total of approximately 30 miles that would fall within a paved roadway. The remaining 24 miles would be within a dirt road or undisturbed desert.

The trench for a 230-kV line could vary from about 3 feet to 6 feet wide depending on the configuration of the cables within the trench. A construction work area from 25 to 50 feet wide is required parallel to the trench for construction equipment, resulting in temporary disturbance to habitat. In unpaved areas, the area above the trench (generally a 20 or 25-foot-wide road) would have to remain clear and accessible for the life of the project, a permanent loss of habitat.

In addition, First Solar provided a report entitled "Gen-Tie Undergrounding Report; Desert Sunlight Solar Farm Project" (First Solar, 2011), which summarized underground installations in the U.S. and presented potential design for the underground gen-tie. The report also listed additional concerns, including the potential for third-party construction damage to the buried facilities, concerns about additional time required to repair the line in the event of an outage, and

limitations on expansion for future additional lines. Cost is also a major concern to the developer, since construction of underground transmission lines costs up to 8.5 times more than overhead lines. These increased costs negatively affect the Project's financial viability, especially when coupled with the considerable technical and environmental risks involved with underground transmission line design.

The First Solar report presents a concern about underground lines: that expansion of the capacity of a transmission line, or addition of future circuits, would be more difficult. The report also explains that the addition of future circuits could be accommodated by increasing cable spacing or constructing a larger duct bank (leaving empty spaces for future cables), or by construction of a parallel duct bank separated by an adequate distance to allow heat dissipation. These approaches would also increase construction cost.

Underground transmission lines are less accessible than overhead lines, so line maintenance is more challenging. It is more difficult to know where an outage has occurred, so outages of an underground line can be more time-consuming both to find the problem and to repair it.

Conclusion. BLM and the CPUC have evaluated the information included in First Solar's report and have determined that, based on the Agencies' own experience, expertise and research, undergrounding DSSF's Gen-Tie Lines would be infeasible. Although the technology for underground transmission lines is available and has been used to reduce visual impacts and to avoid overhead construction through congested areas by major utilities in California, the increased environmental impacts that would result in other resource areas does not justify the use of undergrounding in this case. Specifically, the lack of adequate paved roadways for installation of the Gen-Tie Lines serving the DSSF would result in substantially greater impacts in biological resources, cultural resources, air quality, and noise than for the overhead gen-ties. The additional costs and technical risks associated with undergrounding also make it undesirable under these conditions. As a result, the underground gen-tie alternative has been eliminated from detailed consideration.

~~4.3 Environmentally Preferred Alternative~~

~~The environmentally preferred alternative would be the No Project Alternative with Plan Amendment to Identify the Area as Unsuitable for Solar Development (Alternative 5). This alternative would not allow development of the proposed project or other solar energy generating projects and would have no impacts on the ground within the Project Study Area. However, this alternative would not allow the development of renewable energy, which is a national priority. As such, this alternative was not chosen in full by the BLM, rather, a portion of the alternative was approved which made the remainder of the Project Study Area unavailable to solar development due to resource conflict.~~

~~4.4 Agency Preferred Alternative / Selected Alternative~~

~~The BLM's preferred alternative is the Proposed Action Alternative with Land Use Plan Amendment (Alternative 1) – SF-B, GT-A-1, and Substation A with Access Road 2; or~~

Thank you for your comment, Elizabeth Cross.

The comment tracking number that has been assigned to your comment is SEDDsupp20142.

Comment Date: January 27, 2012 16:56:11PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20142

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Last Name: Cross
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City:
State:
Zip:
Country:
Privacy Preference: Don't withhold name or address from public record
Attachment:

Comment Submitted:

Please PLEASE do NOT open up ANY public lands to PRIVATE for profit corporations for solar development. There are other ways to make the needed switch to sustainable energy resources.

Thank you!

Thank you for your comment, Steve Saway.

The comment tracking number that has been assigned to your comment is SEDDsupp20143.

Comment Date: January 27, 2012 17:12:56PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20143

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Attachment: Solar PEIS January 27 comment letter.docx

Comment Submitted:

January 27, 2012

533 Suffolk Drive
Sierra Vista, AZ 85635

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

Dear Sir:

I have reviewed the Supplement to the Draft Solar Programmatic Environmental Impact Statement (PEIS) and offer the following comments.

1. Since the Solar PEIS process began, I have participated in each opportunity for public comment. I wish to refer back to my previous comments submitted on July 14, 2008; July 8, 2009; September 14, 2009; and May 2, 2011. I stand by the concerns and suggestions included in those documents and believe they are still largely relevant to this stage of the process. In this letter, I will highlight some specific concerns and bring forward some new information for your consideration.

2. The Supplement identifies the preferred alternative as the Modified Solar Energy Development Program Alternative. This alternative provides flexibility to identify additional solar energy zones (SEZs) and allows for utility scale solar development in variance areas outside of SEZs. I concur with the proposed protocol for identifying new SEZs (section 2.2.2.2.5) and the intent to use the Arizona RDEP process for identifying new or expanded SEZs. It should be noted that the RDEP's emphasis on use of previously disturbed lands has been well received and should result in less controversy and conflict with other public land values. Regarding the selection of variance areas outside of SEZs, I believe this is best done at the state and field office level, not at the national Solar PEIS level. For example, in Figure 2.3-1, the Supplement identifies about 3.4 million acres of Arizona BLM lands available for solar application outside of SEZs for the Modified Solar Development Program. However, of these lands, a large portion (west and southwest of the Gillespie SEZ) has been identified in the Lower Sonoran Draft Resource Management Plan (RMP) as avoidance areas for utility scale renewable energy development, i.e., these are high and moderate sensitivity areas (please refer to Map 2-7e, Alternative E, Utility Scale Renewable Energy Conflict Areas, in the Draft RMP). See also Appendix N, Analysis for Renewable Energy Sensitivity, in the Draft RMP. Info on the Draft RMP is available at this link: http://www.blm.gov/az/st/en/fo/lower_sonoran_field.html. Thus, I recommend the BLM rely on the Arizona RDEP to identify appropriate variance areas outside of SEZs. The Arizona RDEP process not only looks at

previously disturbed lands, but also looks across multiple jurisdictions and could result in a broader range of suitable lands for solar energy development. Conceivably, it could facilitate joint agreements between the BLM and Arizona State Land Department for solar development on BLM and State Trust Lands that are adjacent to each other.

3. Regarding the Supplement, Table 2.2-1 (Revised Areas for Exclusion under the BLM's Modified Solar Energy Development Program), I believe additional exclusion areas should be identified as follows: (a) High Value Recreation Settings; (b) Transportation and Public Access Routes; (c) Areas of Known Mineral Deposits, and (d) High Value Conservation Lands. This is particularly important since BLM will use incentives to steer developers to use the SEZs, thus making it critical that exclusion areas are properly identified to avoid conflicts with other public land uses and values. Also, item 29 in Table 2.2-1 could be revised as follows to allow greater flexibility to identify exclusion areas: Individual additional areas identified by BLM State or field offices as requiring exclusion due to ecological, conservation, cultural, mineral, recreational, or public access concerns. In my view, a good example of Arizona BLM lands that should qualify for exclusion are those identified at this link: http://www.sonoranheritage.org/.

4. In my previous comments, I identified concerns with the location and impacts of the Gillespie SEZ. The recent release of the Lower Sonoran Draft RMP offers additional reasons to reconsider the Gillespie SEZ. They are: (1) the location of this SEZ is within lands identified as avoidance areas for utility scale renewable energy development (see Map 2-7e cited in para 2 above); (2) the SEZ is located within a proposed Special Recreation Management Area (see Map 2-12e, Alternative E, Recreation Management); and (3) the SEZ is located on and adjacent to the proposed Agua Caliente Back Country Byway, (see Map 2-16e, Alternative E, Special Designations). (Please see also Appendix N, Analysis for Renewable Energy Sensitivity, in the Draft RMP.) In the Supplement, Table 2.2-1 (Revised Areas for Exclusion under the BLM's Modified Solar Energy Development Program) indicates that SEZs would be excluded from Special Recreation Management Areas and National Back Country Byways. It should also be noted that Appendix C (section C.2.1 Gillespie) in the Supplement identifies a significant number of adverse impacts of the Gillespie SEZ, including the following: "Inventoried off-highway vehicle routes in the SEZ would be closed to recreational use; there could be a loss of recreational use in the nearby WAs and SRMA." The potential closure of Agua Caliente Road and other inventoried routes is a major concern of mine. I belong to a hiking club that enjoys hiking and camping in the BLM lands south and west of the Gillespie SEZ, including the Woolsey Peak and Signal Peak Wilderness Areas (which are components of the National Landscape Conservation System). It is critical that public access is retained along Agua Caliente Road and along these inventoried routes, as they are the primary access routes to these wilderness areas. These routes are also important for the grazing permittee to access lands within grazing allotments that lie south of Agua Caliente Road. The Appendix C does not specifically address mitigation measures for potential loss of these access routes,

but it should. Agua Caliente Road is an improved county road that provides critical access to BLM lands and private property along its 49 miles. Please see my comment letters of May 2, 2011 and September 14, 2009, which identified key access routes that must remain open for public access. Appendix C is silent on any mitigation measures to ensure continued public access along these routes, and frankly, this appears to trivialize the public's need for access and recreational use in this area.

5. In summary, I would like to offer the following suggestions regarding the Gillespie SEZ:

a. Delete the Gillespie SEZ from further consideration based on its inconsistency and incompatibility with the Lower Sonoran Draft RMP (including its inconsistency with stated exclusion areas identified by the Supplement) and based on the numerous concerns and adverse impacts identified by public comments. Development of infrastructure in this area will affect the integrity and scenic values of the landscape, degrade the view shed of nearby wilderness areas and the Sonoran Desert National Monument, fragment open space and wildlife corridors, create more risk of invasive weeds and PM-10 dust issues, and could close public access routes that are critical for public land users who visit and recreate along Agua Caliente Road. The fact that the Gillespie SEZ lies in the Phoenix Active Management Area (AMA) will constrain the permitting process for groundwater use and would seem to argue that suitable locations for SEZs should exclude AMAs.

b. Another option is to delete the Gillespie SEZ from the Solar PEIS and defer further study to the Arizona RDEP process. Possibly, the RDEP process could find a more suitable location north of the Agua Caliente Road using a combination of BLM and State Trust Lands.

c. If the ultimate decision is made to retain the Gillespie SEZ in the Solar PEIS, then please consider adjusting the boundaries of the Gillespie SEZ so that its footprint excludes Agua Caliente Road and inventoried routes that go south from it. It should be noted that moving the Gillespie SEZ further north of Agua Caliente Road would reduce the distance needed to connect the SEZ to its transmission line.

Thank you for the opportunity to submit these comments. Please keep my name on your mailing list for future updates and notices of public comment periods.

Sincerely,

//signed//

Steve Saway

Thank you for your comment, Ann McPherson.

The comment tracking number that has been assigned to your comment is SEDDsupp20144.

Comment Date: January 27, 2012 17:26:16PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20144

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Comment Submitted:

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

JAN 27 2012

Department of the Interior
Bureau of Land Management
Attn: Ms. Linda Resseguie
BLM Solar PEIS Project Manager
1849 C Street, N.W., Room 2134LM
Washington DC, 20240

Subject: Supplement to the Draft Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States [CEQ# 20110361]

Dear Ms. Resseguie:

The U.S. Environmental Protection Agency (EPA) has reviewed the Supplement to the Draft Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States, including Arizona, California, Colorado, Nevada, New Mexico, and Utah. Our review was conducted pursuant to Section 309 of the Clean Air Act, the National Environmental Policy Act, and the Council on Environmental Quality NEPA implementing regulations (40 CFR Parts 1500-1508).

EPA recognizes the challenges associated with the development of the new Solar Energy Program and we strongly support the Bureau of Land Management (BLM) and Department of Energy (DOE) in this endeavor. In light of this undertaking and the large number of solar and other renewable energy projects that have been proposed in the Pacific Southwest, we were very pleased to enter into a Memorandum of Understanding with BLM last month to coordinate and cooperate on the NEPA process for renewable energy projects on federal lands administered by BLM in California, Arizona, and Nevada. Accelerating the pace of solar energy development on public lands in America will help meet the nation's energy demand, while reducing the amount of greenhouse gas emissions necessary to do so. To minimize adverse consequences and streamline project deployment, such projects should be directed away from areas of high conflict and sensitive resources, and towards areas of low conflict, including previously disturbed, degraded, or contaminated lands, sites adjacent to such lands, and locations that minimize the need for construction of new roads and transmission lines. This is consistent with the goals of recent Presidential directives designed to expedite the processing of renewable energy and infrastructure development projects through more efficient and effective permitting and environmental reviews. BLM's programmatic approach provides an excellent venue for thoughtful planning to avoid and minimize unnecessary environmental trade-offs at the project level.

We are pleased to see that the Supplement addresses several of the issues raised in our previous comments. Most importantly, BLM has made substantial progress in characterizing critical components of the new Solar Energy Program and in better identifying those areas within the Solar Energy Zones (SEZs) that are best suited for utility-scale solar energy development. Of significance, BLM has modified its preferred alternative to ensure that SEZs are not located in high conflict areas, reducing the number of zones from 24 to 17 and the corresponding acreage from 677,384 to 285,417 acres. The Supplement also establishes a protocol for identifying new SEZs in the future and discusses incentives designed to make development inside SEZs more attractive to industry.

However, we do have some concerns, and look forward to working with you on these issues. These concerns are addressed further in the enclosed detailed comments. For example, EPA recommends that BLM focus on identifying and incorporating disturbed, degraded or contaminated lands into the new Solar Energy Program. According to the Supplement, the identification of disturbed or previously disturbed sites is listed as a factor that will be considered in both the proposed identification protocol for new SEZs, as well as the proposed variance application process (pg. 2-29; 2-35). We recommend that more emphasis be placed on identifying and on siting future projects on disturbed, degraded, and contaminated lands, and that BLM and DOE offer additional incentives for development on such sites. We also recommend that BLM and DOE work with the Bureau of Indian Affairs to engage tribal governments to determine if there is interest in developing future SEZs on tribal land in light of recent proposed regulations for surface leases of trust land for energy and other uses.

Based on our review, we have rated the document as *Environmental Concerns - Insufficient Information* (EC-2). We appreciate the opportunity to provide comments on the Supplement to the Draft PEIS, and look forward to working closely with BLM and DOE to address the issues that we have identified. If you have any questions, please contact me at 415-972-3843, or contact Ann McPherson, the lead reviewer for this project. Ann can be reached at 415-972-3545 or mcpherson.ann@epa.gov.

Sincerely,

Enrique Manzanilla, Director
Communities and Ecosystem Division

Enclosures: Summary of EPA Rating Definitions
Detailed Comments

Cc: Jim Kenna, State Director, Bureau of Land Management, California State Office
Amy Lueders, State Director, Bureau of Land Management, Nevada State Office
Ray Suazo, State Director, Bureau of Land Management, Arizona State Office
Jesse Juen, State Director, Bureau of Land Management, New Mexico State Office
Juan Palma, State Director, Bureau of Land Management, Utah State Office
Helen Hankins, State Director, Bureau of Land Management, Colorado State Office
Tracey A. LeBeau, Director, U.S. Department of Energy, Office of Indian Energy Policy and Programs
Steve Black, Counselor to Secretary of the Interior, U.S. Department of the Interior
Janea Scott, Special Assistant to the Counselor, U.S. Department of the Interior
Michael Picker, Senior Advisor on Renewable Energy Facilities, State of California Governor's Office
Karen J. Atkinson, Director, Indian Affairs, U.S. Department of the Interior

SUMMARY OF EPA RATING DEFINITIONS*

This rating system was developed as a means to summarize the U.S. Environmental Protection Agency's (EPA) level of concern with a proposed action. The ratings are a combination of alphabetical categories for evaluation of the environmental impacts of the proposal and numerical categories for evaluation of the adequacy of the Environmental Impact Statement (EIS).

ENVIRONMENTAL IMPACT OF THE ACTION

"LO" (Lack of Objections)

The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

"EC" (Environmental Concerns)

The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact. EPA would like to work with the lead agency to reduce these impacts.

"EO" (Environmental Objections)

The EPA review has identified significant environmental impacts that should be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

"EU" (Environmentally Unsatisfactory)

The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potentially unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the Council on Environmental Quality (CEQ).

ADEQUACY OF THE IMPACT STATEMENT

"Category 1" (Adequate)

EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

"Category 2" (Insufficient Information)

The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analysed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

"Category 3" (Inadequate)

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analysed in the draft EIS, which should be analysed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

*From EPA Manual 1640, Policy and Procedures for the Review of Federal Actions Impacting the Environment

U.S. EPA DETAILED COMMENTS ON THE SUPPLEMENT TO THE DRAFT PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT FOR SOLAR ENERGY DEVELOPMENT IN SIX SOUTHWESTERN STATES, JANUARY 27, 2012

Variance Process

EPA supports BLM's proposal to reevaluate the need for additional SEZs in the variance areas at least every five years. Focusing solar development within SEZs offers many benefits, including reducing environmental impacts and streamlining the environmental review and permitting process. The establishment of new SEZs should better enable BLM's field offices to guide projects to more suitable locations. According to the Supplement, the variance process for projects proposed to be sited outside of SEZs includes two pre-application meetings, submission of a ROW application, submission of a Plan of Development, and various BLM coordination activities (pgs. 2-33 to 34). We are unclear, however, how the variance process specifically differs from BLM's current procedures for processing ROW applications.

Recommendations:
Clarify in the Final PEIS how the variance process will differ from the methods that BLM currently uses to process ROW applications. For example, the Final PEIS should describe whether future applications for projects located in SEZs would receive priority attention over applications in variance lands. If a proposed project does not utilize disturbed, degraded or contaminated variance land, BLM should consider requiring the developer to evaluate project alternatives within an SEZ in the applicant's Plan of Development and, if appropriate, in the project level NEPA analysis.

Greater Focus on Disturbed, Degraded, and Contaminated Lands

In our previous comments on the Draft PEIS, EPA committed to provide a list of contaminated sites tracked in our databases that are located in or near BLM-administered lands considered in the Solar PEIS. We have identified 25 sites, including two sites within the boundaries of the Solar Energy Development Alternative, using the boundaries presented in the Draft PEIS. Ten of the 25 sites are located within two miles of the Solar Energy Development Alternative area and one site is located within one mile of the Dry Lake SEZ. These sites are included in a table at the end of these Detailed Comments. Other federal, state, tribal, and local agencies, as well as the public, may be able to identify additional sites that should be considered for solar development.

Recommendations:
Expand the search for disturbed, degraded, and contaminated lands to include public, private, and tribal lands.

Work with the Nevada Department of Environmental Protection and other state agencies to examine recently active, but currently closed, mine sites on BLM land suitable for solar energy development and publish these sites in the Final PEIS.

Consider creating an Internet-based portal to allow for continuous input from other federal, state, tribal, and local agencies and the public, aimed at identifying lands that are disturbed, degraded or contaminated. Use this portal to begin to create a comprehensive inventory of such sites so that developers can be directed to these sites in the future.

Extend the same incentives designed to steer development to SEZs to disturbed, degraded or contaminated sites.

Include the list of contaminated sites identified by EPA in the Final PEIS, along with additional information about the sites and a preliminary determination as to their suitability for solar development.

Consider whether the boundaries of the Dry Lake SEZ should be adjusted to incorporate the site on EPA's list of contaminated sites that is located 0.65 miles from that SEZ.

Add the following sentence as a footnote to the RE-Powering America's Land Initiative on page 2-35: "EPA and other parties have or will continue to characterize and cleanup these sites to ensure they are protective for people."

Processing of Existing Solar ROW Applications

As of August 15, 2011, there were 79 pending solar applications. According to the Supplement, BLM intends to continue to process all pending applications that meet due diligence and siting requirements under BLM's current policies, and that pending applications on lands proposed as exclusion areas are likely candidates for denial.

We believe that future efforts should be focused on the designation of new SEZs and the identification of disturbed, degraded, and contaminated lands. Not allowing projects in exclusion areas will allow state and federal agencies to be more selective about lands to be utilized for development and should provide BLM with a better opportunity to evaluate the effectiveness of the Solar Energy Program.

Recommendations:
Disclose in the Final PEIS the numbers of pending applications that are located within the SEZs, variance lands, and exclusion areas, and include maps to illustrate the locations of the active ROW applications.

Provide clear and strong preference to project applications in SEZs with few resource constraints and on disturbed, degraded, and contaminated lands.

Competitive Bidding

The Supplement states that BLM may, through rulemaking, establish a competitive process that results in the immediate issuance of a ROW lease authorization to the successful bidder (pg. 2-23).

Recommendation:
Describe the competitive process in the Final PEIS more fully and clarify when the appropriate environmental analysis would be completed.

SEZ-Specific Action Plans – Appendices C.1 to C.6

EPA appreciates the inclusion of action plans for each of the SEZs, describing the changes that have been made to the SEZs, as well as outlining the additional information that will be collected (Appendix C.1 to C.6). According to the Supplement, some of the items identified in the action plans will be completed by BLM and presented in the Final PEIS. Data collection efforts not completed by BLM, however, would likely be required of developers as part of site-specific tiered analysis for future projects.

Recommendation:
Clarify in the Final PEIS when data will be collected in conjunction with the SEZ-specific action plans and how that data will be integrated into the decision-making process and/or presented if it is collected subsequent to the publication of the Final PEIS. For example, explain how stakeholders will be informed of newly designated 'non-development' areas in the SEZs.

The first section of each SEZ-specific action plan includes a summary of potential impacts identified in the Draft PEIS, followed by recommendations for additional data collection. Some recommendations on additional data collection are applicable to most, if not all, of the SEZs. EPA recommends one addition to the Water Resources section of each SEZ-specific action plan, as noted below.

Recommendation:
Include a functional assessment of waters of the U.S. to evaluate and disclose the existing condition of such waters and any potential adverse effects from solar development.

We are pleased to see that 'non-development' areas have been specified in many SEZs to avoid surface water features. Due to the scale of the maps, however, it is difficult to tell the size of these areas relative to the water resources they are protecting, or whether a buffer has been included in the area specified as 'non-development.'

Recommendations:
Provide more detailed information in the Final PEIS on the avoidance of surface water features, particularly as it relates to 'non-development' areas within SEZs, including whether or not a buffer has been included in such areas.

Establish 100-foot buffer zones[1] to avoid adverse impacts to water quality or hydrology of streams, wetlands and riparian areas. Larger buffers may be necessary depending on resources, landscape position, and surrounding land use.

[1] A 100-foot buffer for waters was proposed in the West Chocolate Mountains Renewable Energy Evaluation Area DEIS (June 2011).

Revised Transmission Analysis – Appendix C.7.1

We are pleased to see that BLM proposes to complete additional analyses of transmission needs for the SEZs being carried forward in the Final PEIS. According to the Supplement, this analysis will address transmission access issues associated with the SEZs and the extent of new transmission development that might be needed to support solar energy generation within the SEZs (pg. C-321). While the Supplement contains a commitment that the Final PEIS will include a more detailed evaluation of the transmission needs and impacts for anticipated solar development within the SEZs (pg. 2-25), it does not commit to addressing impacts associated with anticipated transmission line development (Section C.7.1).

Recommendation:
Include in the Final PEIS a general description of the types of impacts associated with upgrading transmission infrastructure or building new lines, along with a commitment that future project-specific NEPA analyses will address such impacts during the review of the proposed solar energy facilities.

Water Resources Action Plan – Appendix C.7.2

We appreciate the inclusion of the Water Resources Action Plan (Appendix C.7.2), which outlines seven main action plan items relating to water resources that apply to all SEZs going forward. We are pleased to see that the WRAP states that a planning-level inventory of water resources will be presented in the Final PEIS, as we recommended previously. The WRAP lists products that will be developed and sources of information that will be utilized for this inventory, such as Google Earth links to specific datasets.

Recommendations:
EPA recommends that BLM also utilize Google Earth to assist in mapping waters by including aerial photo interpretation at an appropriate scale.

Specify in the Final PEIS when the Floodplain Determinations, Jurisdictional Waters Determinations, and Significant Ephemeral Waters Determinations will be completed and how this information will be integrated into the decision-making process for the SEZs, particularly if these items are completed after the publication of the Final PEIS.

The WRAP states that the following seven SEZs will benefit from a more quantitative analysis of groundwater impacts including: Afton, Amargosa Valley, Brenda, Dry Lake, Dry Lake Valley North, Imperial East, and Riverside East. We support BLM's commitment to perform quantitative analyses of the potential drawdown impacts in certain SEZs; however, it is not clear how the seven SEZs listed in Section C.7.2 were selected for analysis. Our Draft PEIS comments expressed concern regarding groundwater impacts in the Escalante Valley and Milford Flats South SEZs, where subsidence has already been observed in association with excessive groundwater withdrawal. Development of a numerical groundwater model is listed in the SEZ-specific WRAP for Escalante Valley and Milford

Flats South, and we suggest clarification as to whether this is a different level of modeling than that described in Section C.7.2, or whether the two SEZs were inadvertently left off the list.

Recommendations:
Clarify in the Final PEIS whether additional groundwater modeling will be conducted in the Escalante Valley and Milford Flats South SEZs and if this is part of the general WRAP, or SEZ-specific action plans.

Perform additional quantitative analyses for the Escalante Valley and Milford Flats South SEZs.

Identify in the Final PEIS the criteria used to determine when a quantitative analysis is appropriate for an SEZ, and consider including situations where water availability is already limited to the point that wet-cooling options would not be feasible as one criterion.

Groundwater Impacts

EPA believes that there is the potential for adverse impacts to the long-term availability of groundwater in many SEZs, considering the quantities needed for maximum build-out and the potential impacts associated with pumping groundwater in these basins.

Recommendations:
Clearly identify in the Final PEIS the quantity of groundwater withdrawal allowable in each SEZ, and describe impacts associated with lowering of the water table.

Consider further restrictions on solar technology within SEZs in exceptionally arid regions, such as Afton, by limiting development to low water-use technologies such as photovoltaic systems.

EPA is particularly interested in the groundwater withdrawal in the Amargosa Valley SEZ. Groundwater withdrawals for construction and operation at full build-out capacity far exceed the available groundwater supply in this SEZ. Moreover, the basin is currently over-allocated and groundwater withdrawals have been curtailed due to restrictions protecting water rights at Devils Hole. In addition, it is currently not possible to model the extent that continued groundwater pumping will impact water levels at Devils Hole and Ash Meadows National Wildlife Refuge.[2] Regional groundwater models indicate that groundwater levels at Devils Hole are steadily declining and may reach critical levels in the near future. Small declines in spring discharge or changes in water temperature or water chemistry resulting from groundwater withdrawals in the basin may affect threatened and endangered species at Ash Meadows NWR. Consequently, it is likely that full build-out would have significant impacts to groundwater resources and groundwater-dependent species.

[2] Draft Environmental Impact Statement for the Amargosa Farm Road Solar Energy Project. See internet address: http://www.blm.gov/pgdata/etc/medialib/blm/nv/field_offices/las_vegas_field_office/energy/amargosa_farm_road3.Par.28872.File.dat/Chapter%204%20-%20Environmental%20Effects.pdf

Recommendation:
Given the over-appropriation of groundwater resources and the presence of special-status species, particularly in Ash Meadows NWR, EPA recommends that BLM eliminate the Amaragosa Valley SEZ and exclude this land from further development.

Air Quality

Our comments on the Draft PEIS recommended that additional information on Dust Abatement Plans and soil stabilization techniques be included in the Final PEIS to address potential adverse air quality impacts predicted by air quality modeling. The action plans presented in Appendix C, however, do not address the data gaps that we have referenced. In fact, the Supplement states that no additional air quality information is needed for any of the SEZs. EPA is concerned about cumulative impacts of fugitive dust, and we reiterate our recommendation to document the potential for cumulative air quality impacts of solar energy development, particularly on Class I areas. Fugitive dust mitigation techniques may fall within the scope of the design features, which will be updated in the Final PEIS. If this is the case, we look forward to seeing this additional information at that time.

Recommendations:
Present further information in the Final PEIS on Dust Abatement plans and soil stabilization techniques.

Document in the Final PEIS the potential for cumulative air quality impacts related to solar energy development, particularly on Class I areas.

Wind erosion is a major issue in the planning area. Construction of large solar energy projects could result in an increase in wind-borne particulate matter, which can lead to dust storms. Dust particles in the air can lead to a number of respiratory problems, asthma especially. Children, in particular, have greater sensitivities to various environmental contaminants, including air pollutants. Construction emissions could exacerbate existing conditions, such as asthma, for children, the elderly, and those with existing respiratory or cardiac disease. EPA suggests that BLM consult with the U.S. Department of Agriculture to identify soils that may be vulnerable to wind erosion. Any areas or regions that are determined to be particularly susceptible to wind erosion should be excluded from development, and this exclusion criterion should be added to Table 2.2-1. We suggest utilizing the New Mexico Wind Erosion Prediction Guide[3] to gain an understanding of the wind erosion process and how to identify areas that are susceptible to wind erosion.

Recommendations:
Consult with the USDA to identify soils that may be vulnerable to wind erosion and exclude from development areas that are determined to be particularly susceptible from development.

Consider including 'lands with vulnerability to wind erosion' as an exclusion criterion in Table 2.2-1.

[3] See Internet address: http://www.nm.nrcs.usda.gov/technical/fotg/section-1/references/weq-prediction-guide.html

Environmental Justice

In our comments on the Draft PEIS, EPA raised concerns over the methodology used to identify potential low-income and minority communities located near proposed SEZs, and we made several recommendations to improve the analysis. We recommended that BLM remove the state-wide analysis and utilize a lower threshold for the SEZ-specific analysis to define low-income and minority populations that are meaningfully greater than the state average. The SEZ-specific action plans, however, state that no additional information is needed regarding environmental justice issues.

Recommendations:
Revise and update the EJ analysis to provide more accurate analysis of impacted areas and comparisons with state demographics, both for minority percentages and low-income rates.

Include additional design features that address EJ concerns in the Final PEIS.

Cumulative Impacts

The Supplement discusses cumulative impacts briefly in Section 2.3.5, incorporating by reference the cumulative impact analysis presented in the Draft PEIS. The Supplement states that the cumulative impacts analyses for individual SEZs will be updated in the Final PEIS. Overall, BLM expects direct and indirect impacts, and therefore cumulative impacts, to be of lesser magnitude than was contemplated in the Draft PEIS. The Supplement also states that cumulative impacts may be more concentrated and/or severe within individual SEZs than was described in the Draft PEIS. In most cases, little or no information was presented in the Draft PEIS in support of these conclusions, nor were thresholds identified to determine significance.

Recommendations:
Address EPA's comments on the Draft PEIS concerning the cumulative impacts analysis, as presented in our comments on the Draft PEIS.

Describe the condition of the resource(s) and the time required for the resource(s) to recover from the impact of the proposed action, in conjunction with other past, present, and reasonably foreseeable future actions, in the Final PEIS.

Provide data to support the Supplement's assumption that direct, indirect, and cumulative impacts would be small to minor based on mitigation, as well as the Supplement's conclusion that cumulative impacts are likely to be of lesser magnitude than was contemplated in the Draft PEIS.

DOE's Proposed Programmatic Environmental Guidance

DOE's Proposed Programmatic Environmental Guidance is also presented in the Supplement. Using the guidance, DOE will select where to make technology and resource investments to minimize the environmental impacts of solar technologies. A second element of the guidance allows DOE to establish

environmental mitigation recommendations for project proponents who are seeking financial assistance from DOE. EPA is pleased to have the opportunity to review DOE's Proposed Programmatic Environmental Guidance and offers the following recommendations regarding Section 3.2.4, Water Resources and Erosion Control, as detailed below. We suggest replacing the word 'consider' and revising the language as follows:

- Bullet #1: **Give precedence to** technologies that minimize water use.
- Bullet #2: **Promote** sustainable use of water resources through appropriate technology selection **and implementation of** conservation practices that **protect and preserve the function, acreage, and quality** of the existing natural water bodies (including streams, wetlands, ephemeral washes, **microyphyll woodlands,** and floodplains, as well as groundwater aquifers).
- Bullet #4: Avoid locations that would involve impacts on surface water bodies, ephemeral washes, playas, **microphyll woodlands,** and natural drainage areas (including groundwater recharge areas).
- Bullet #11: **Contact the U.S. Army Corps of Engineers to discuss the reach and extent of waters of the U.S. on the proposed project site. Present a reasonable range of onsite and offsite alternatives and an analysis that evaluates alternatives to avoid impacts to waters in compliance with Section 404 of the Clean Water Act.**
- Bullet #12 (new): **Avoid impacts to waters of the U.S., including indirect impacts to waters of the U.S. located off the project site.**

EPA Tracked Sites located in the No-Action Alternative, as defined by the Draft PEIS.

Program	EPA_ID/ BF ACRES Property ID	Site ID/ BF Grant IDs	Site Name	Latitude	Longitude
Federal Superfund	NMD980750020	600911	LEE ACRES LANDFILL (USDOI)	36.711100	-108.092100
Abandoned Mine Land	NMD986684231	604718	STEPHENSON - BENNETT MINE	32.403000	-105.402000
Abandoned Mine Land	NM0001408608	605033	HORIZON POTASH MINE	32.425000	-103.760000
Abandoned Mine Land	UTN000802138	802138	OPERATION MINE SHAFT	37.772000	-113.171000
Abandoned Mine Land	CO0008969974	801727	CORKSCREW AND GRAY COPPER GULCHES	37.921000	-106.343000
Abandoned Mine Land	UTN010161078	801847	PIONEER 3-STAMP MILL	37.134000	-113.222000
Landfill	1554	0	Garfield County/John's Valley LF	37.821390	-112.383612
Abandoned Mine Land	UTD980667208	800679	MONTICELLO RADIOACTIVELY CONTAMINATED PROPERTIES	37.863880	-109.333610
Abandoned Mine Land	COD983801069	801336	GREAT WEST GOLD AND SILVER	38.382000	-107.043000
Abandoned Mine Land	UT0012605880	801913	BULLION CANYON MILLS	38.427000	-112.286000
Abandoned Mine Land	CO0000286203	801536	LONDON MINE	39.273000	-105.862000
Landfill	1534	0	Millard County LF	39.308334	-112.472779
Abandoned Mine Land	CO0001411347	801566	UPPER ANIMAS MINING DISTRICT	37.844000	-107.571000
Abandoned Mine Land	UT0001910793	801607	TINTIC STANDARD REDUCTION MILL	39.958000	-110.146000
Abandoned Mine Land	UT0010221516	801869	OPHIR MILLS AND SMELTER	40.221000	-112.153000
Landfill	930	0	Apex Regional LF	36.401670	-114.865180
Abandoned Mine Land	CA4141190567	903786	BLACKROCK MINE	37.362000	-117.605000
Landfill	192	0	Landers Disposal Site	34.240480	-116.381520
Abandoned Mine Land	AZ0000307959	905040	AMERICAN LEGION MINE	35.192000	-113.938000

Landfill	187	0	Kern Valley LF	35.750000	-118.433334
Abandoned Mine Land	NVD981989627	903042	UNITED MINING CORP.	39.313000	-118.353000
Landfill	1794	0	Sunrise Landfill	36.141201	-114.999080
Abandoned Mine Land	NVD000626531	903992	BARRICK GOLD STRIKE MINE - BLM	39.513000	-114.038000
Abandoned Mine Land	CAD980496863	901736	ATLAS ASBESTOS MINE	36.321660	-120.586700
Abandoned Mine Land	CA0000878058	905138	SISKON MINE	41.581000	-122.359000

EPA Tracked Sites located in the Solar Energy Development Program Alternative, as defined by the Draft PEIS.

Program	EPA_ID/ BF ACRES Property ID	Site ID/ BF Grant IDs	Site Name	Latitude	Longitude
Landfill	930	0	Apex Regional LF	36.401670	-114.865180
Landfill	192	0	Landers Disposal Site	34.240480	-116.381520

EPA Tracked Sites located near (2 miles or less) Solar Energy Zones, as defined by the Draft PEIS.

Program	EPA_ID/ BF ACRES Property ID	Site ID/ BF Grant IDs	Site Name	Latitude	Longitude
Landfill	930	0	Apex Regional LF	36.401670	-114.865180

EPA Tracked Sites located near (15 miles or less) the Solar Energy Development Program Alternative, as defined by the Draft PEIS

Program	EPA_ID/ BF ACRES Property ID	Site ID/ BF Grant IDs	Site Name	Latitude	Longitude
Federal Superfund	NMD980750020	600911	LEE ACRES LANDFILL (USDOI)	36.711100	-108.092100
Abandoned Mine Land	NMD986684231	604718	STEPHENSON - BENNETT MINE	32.403000	-105.402000
Abandoned Mine Land	NM0001408608	605033	HORIZON POTASH MINE	32.425000	-103.760000
Abandoned Mine Land	UTN000802138	802138	OPERATION MINE SHAFT	37.772000	-113.171000
Abandoned Mine Land	CO0008969974	801727	CORKSCREW AND GRAY COPPER GULCHES	37.921000	-106.343000
Abandoned Mine Land	UTN010161078	801847	PIONEER 3-STAMP MILL	37.134000	-113.222000
Landfill	1554	0	Garfield County/John's Valley LF	37.821390	-112.383612
Abandoned Mine Land	UTD980667208	800679	MONTICELLO RADIOACTIVELY CONTAMINATED PROPERTIES	37.863880	-109.333610
Abandoned Mine Land	COD983801069	801336	GREAT WEST GOLD AND SILVER	38.382000	-107.043000
Abandoned Mine Land	UT0012605880	801913	BULLION CANYON MILLS	38.427000	-112.286000
Abandoned Mine Land	CO0000286203	801536	LONDON MINE	39.273000	-105.862000
Abandoned Mine Land	CA4141190567	903786	BLACKROCK MINE	37.362000	-117.605000
Abandoned Mine Land	AZ0000307959	905040	AMERICAN LEGION MINE	35.192000	-113.938000
Landfill	187	0	Kern Valley LF	35.750000	-118.433334
Abandoned Mine Land	NVD981989627	903042	UNITED MINING CORP.	39.313000	-118.353000
Abandoned Mine Land	NVD000626531	903992	BARRICK GOLD STRIKE MINE - BLM	39.513	-114.038
Landfill	1794	0	Sunrise Landfill	36.141201	-114.999080

Thank you for your comment, Nick Hont.

The comment tracking number that has been assigned to your comment is SEDDsupp20145.

Comment Date: January 27, 2012 17:28:29PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20145

First Name: Nick
Middle Initial:
Last Name: Hont
Organization: Mohave County, Arizona
Address: P.O. Box 7000
Address 2:
Address 3:
City: Kingman
State: AZ
Zip: 86401
Country: USA
Privacy Preference: Don't withhold name or address from public record
Attachment: Solar Energy Draft PEIS 1.27.12_1.pdf

Comment Submitted:

Please see attached.

MOHAVE COUNTY
DEVELOPMENT SERVICES

P. O. Box 7000 Kingman, Arizona 86402-7000 3250 E. Kino Ave, Kingman www.co.mohave.az.us Telephone (928) 757-0903 FAX (928) 757-3577

Nicholas S. Hont, P. E.
Department Director

Michael P. Hendrix, P. E.
Deputy County Manager

January 27, 2012

Solar Energy Draft PEIS
Argonne National Laboratory
9700 S. Cass Avenue – EVS/240
Argonne IL 60439

Dear Sir:

Mohave County appreciates the opportunity to comment on the Supplement to the Solar Programmatic Environmental Impact Statement. Our comments are below; please call me if you have any questions.

The Draft Solar PEIS as originally published proposed that 4,485,944 acres of BLM administered land would be available for application under the Solar Development Program. In the Supplement to the Draft Solar PEIS this number has been reduced to 3,397,007 acres, a reduction of 1,088,907 acres or approximately 24 percent. This is a significant reduction. Figure 2.3-1 demonstrates that a significant portion of the lands in the state of Arizona that are affected by the PEIS are located in Mohave County.

It appears that Mohave County may be affected by this reduction more significantly than any other county in the state. Private land in Mohave County accounts for only approximately 18 percent of its area, with BLM and Forest Service land accounting for approximately 61 per cent. This reduction in the lands that would be available for application may make it more difficult for Mohave County to attract renewable energy projects, and thereby conflict with the county's development plans and economic development policies.

Mohave County requests that the lands within its boundaries that were proposed in the original Draft Solar PEIS be retained and not reduced as proposed in the Supplement.

Thank you again for this opportunity

Sincerely,

Nicholas S. Hont

Nicholas S. Hont, P.E.
Director

bh

cc: Mike Hendrix, P.E., Deputy County Manager, Public Works & Development Services
Ron Walker, County Manager

Thank you for your comment, Donald Burnette.

The comment tracking number that has been assigned to your comment is SEDDsupp20146.

Comment Date: January 27, 2012 17:28:38PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20146

First Name: Donald
Middle Initial: G
Last Name: Burnette
Organization: Clark County
Address: Manager's Office
Address 2: 500 S. Grand Central Parkway, 6th floor
Address 3:
City: Las Vegas
State: NV
Zip: 89155
Country: USA
Privacy Preference: Don't withhold name or address from public record
Attachment: ClarkCounty-supplement to Draft Prog EIS-Solar Energy.pdf

Comment Submitted:

To whom it may concern:

Clark County would like to take this opportunity to provide comments on the Supplement to the Draft Programmatic Environmental Impact Statement (PEIS).

In April of 2011, Clark County commented on the initial draft of the PEIS. As was stated then, Clark County supports the goals of the PEIS to facilitate utility scale solar development on federal lands while minimizing environmental, social, and economic impacts. Being located in Southern Nevada, the County has one of the premier solar resources in the world, and solar development has the potential to provide clean renewable electricity to the region and much needed economic benefit to the County.

In reviewing the Supplement to the PEIS, Clark County would like to express appreciation for the efforts of the Bureau of Land Management and the Department of Energy in modifying this document to address Clark County's previous concerns. The County believes that the BLM Preferred Alternative (Modified Program Alternative) offers the most flexibility while still ensuring the protection of sensitive lands.

Consistent with the goals of the PEIS, the document should facilitate responsible development of solar energy. Clark County will continue to work with BLM to ensure that future solar development is not in conflict with the use of public lands for wildlife and resource protection, recreation, tourism, and community enjoyment as well as being consistent with the goals and principals of our land use plan.

Office of the County Manager

500 S Grand Central Pky 6th Fl • Box 551111 • Las Vegas NV 89155-1111
(702) 455-3530 • Fax (702) 455-3558

Donald G. Burnette, County Manager
Jeffrey M. Wells, Assistant County Manager • Randall J. Tarr, Assistant County Manager • Edward M. Finger, Assistant County Manager

January 27, 2012

Bureau of Land Management
Solar Energy PEIS
Argonne National Laboratory
9700 S. Cass Avenue, EVS/240
Argonne, IL 60439

Re: Supplement to the Draft Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States

To Whom It May Concern:

Clark County would like to take this opportunity to provide comments on the Supplement to the Draft Programmatic Environmental Impact Statement (PEIS).

In April of 2011, Clark County commented on the initial draft of the PEIS. As was stated then, Clark County supports the goals of the PEIS to facilitate utility scale solar development on federal lands while minimizing environmental, social, and economic impacts. Being located in Southern Nevada, the County has one of the premier solar resources in the world, and solar development has the potential to provide clean renewable electricity to the region and much needed economic benefit to the County.

In reviewing the Supplement to the PEIS, Clark County would like to express appreciation for the efforts of the Bureau of Land Management and the Department of Energy in modifying this document to address Clark County's previous concerns. The County believes that the BLM Preferred Alternative (Modified Program Alternative) offers the most flexibility while still ensuring the protection of sensitive lands.

Consistent with the goals of the PEIS, the document should facilitate responsible development of solar energy. Clark County will continue to work with BLM to ensure that future solar development is not in conflict with the use of public lands for wildlife and resource protection, recreation, tourism, and community enjoyment as well as being consistent with the goals and principals of our land use plan.

Sincerely,

Donald G. Burnette
Clark County Manager

/NAL:rmt

Thank you for your comment, Robert Weisenmiller.

The comment tracking number that has been assigned to your comment is SEDDsupp20147.

Comment Date: January 27, 2012 17:40:04PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20147

First Name: Robert
Middle Initial: B
Last Name: Weisenmiller
Organization: California Energy Commission
Address: 1516 9th St., MS 31
Address 2:
Address 3:
City: Sacramento
State: CA
Zip: 95814
Country: USA
Privacy Preference: Don't withhold name or address from public record
Attachment: CEC DFG Solar PEIS COMMENTS 01-27-12.doc

Comment Submitted:

CALIFORNIA ENERGY COMMISSION
1516 Ninth Street Sacramento, California 95814
Main website: www.energy.ca.gov

DEPARTMENT OF FISH AND GAME
1416 Ninth Street Sacramento, California 95814
Main website: www.dfg.ca.gov

January 26, 2012

Shannon Stewart, Bureau of Land Management
Solar Energy Draft PEIS
Argonne National Laboratory
9700 S. Cass Avenue – EVS/240
Argonne, Illinois 60439

Dear Ms. Stewart:

The California Energy Commission (Energy Commission) and the California Department of Fish and Game (Fish and Game) (or collectively, "the Agencies") appreciate this opportunity to comment on the Supplement to the Draft DOE-BLM Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States (Solar DPEIS or DPEIS) released in October 2011. The Energy Commission and Fish and Game are cooperating agencies in the development of the PEIS and have provided ongoing input, most recently as comments on the DPEIS on April 29, 2011. Our joint comments here are once again limited to the areas in California addressed by the Solar DPEIS.

The Renewable Energy Action Team (REAT) Agencies, which include the United States Fish and Wildlife Service, the United States Bureau of Land Management (BLM), the Energy Commission, and Fish and Game, initiated development of the Desert Renewable Energy Conservation Plan (DRECP or Plan) to accelerate the permitting and development of new renewable energy projects, while conserving natural communities, and associated species and their habitats. The synergies of this effort were most recently reinforced through the Memorandum of Understanding (MOU) Between the Department of the Interior and the State of California on Renewable Energy, signed by Department of Interior Secretary Salazar and Governor Brown on January 13, 2012. MOU Objectives 4 through 10 explicitly address the DPEIS and DRECP, by requiring the REAT agencies to integrate and coordinate the development of both processes.

We offer these general observations in response to the Supplement in order to continue our role in the promotion and enhancement of the state and federal efforts in the arena of environmentally sensitive development of renewable energy.

Recent Revisions to Proposed Solar Energy Zones and Potential SEZ Expansions

The adjustments of the DPEIS and the Solar Energy Zones (SEZs) that have been made in the Supplement largely comport with what is under consideration for the DRECP. The REAT will integrate the final boundaries of the Imperial East (unchanged in the Supplement) and newly delineated Riverside East SEZ as we adjust the Renewable Energy Study Areas (RESAs) of the DRECP, which were presented to stakeholders in October 2011. These RESAs are currently being further refined, after which portions of them will become Development Focus Areas (DFAs) to be presented in the Development Alternatives of the joint DEIS/EIR scheduled for public environmental review by the third quarter of 2012. The analysis and recommendations by BLM for further studies of resources on BLM lands, identified on the basis of response comments to the DPEIS and listed in Appendix C of the Supplement, will be incorporated in our reviews. We look forward to the continued use of emergent PEIS information to augment the DRECP process.

The DRECP Preliminary Conservation Strategy identified five RESAs. These RESAs include polygons nearly identical to the Imperial East and Riverside East SEZs, and also include a RESA near Owens Lake in Inyo County and two RESAs (West Mojave and Barstow) in the Western Mojave Desert. These latter RESAs have been delineated in concordance with both representatives of renewable energy industry and other stakeholders to focus development in suitable portions of the Western Mojave. In general terms, the identification of this level of acreage within DFAs (current RESAs exceed 3,500,000 acres) is expected to accommodate anticipated demand for some time. The REAT recognizes the need to build in mechanisms to allow further expansions if needed and likely will be addressing this during the further development of the DRECP. Consideration of additional SEZs beyond those in the Supplement should occur as part of the DRECP process. Consequently, the Agencies believe the Solar PEIS should not facilitate development outside of DRECP DFAs through any type of a variance process that has not been adopted by the DRECP.

Proposed PEIS Variance Process

The Supplement reduces the acreages available for development in the Modified Program Alternative in California from more than 1,700,000 acres to less than 1,400,000 acres, and provides an initial outline of a process through which

applicants may still apply for variances that would allow development in these areas that are outside of the two current SEZ boundaries.

The DRECP is an integrative process that places due consideration of the long-term conservation of species, their habitats and the natural communities of which they are part. The Plan will have a reserve design component within which areas most suited for mitigation and enhancement will be identified. In addition, the Plan will designate the DFAs as primarily responsive to energy development needs. This integrative design by necessity evaluates the relative ecological values of lands outside of DFAs that nevertheless may be eligible for energy development, and creates scaled mitigation "costs" to offset impacts to environmental resources. The success of ecologically sound conservation planning for the 22,587,000-acre Plan Area, which will include the entirety of the PEIS lands, other federal lands that are outside of BLM's jurisdiction, and non-federal lands, is dependent on a consistent method for evaluating and mitigating impacts on all Plan Area lands, including those outside of SEZs and DFAs. Consequently, integrated planning will best be served if the methods for siting outside of SEZs or DFAs in California continue to be developed through the DRECP. The concepts in the draft variance process proposed in Section 2.2.2.3 of the Supplement will be useful in the establishment of review protocols for these areas.

Integration of the Solar PEIS and the DRECP in California

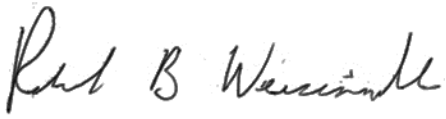
The DRECP Planning effort is scheduled to be complete in 2013 and continues to move forward with the hard work and collaboration among the State, BLM and USFWS.

The BLM California Office (BLM-CA) has committed to and has initiated scoping for a California Desert Conservation Area (CDCA) amendment that would allow BLM to consider plan amendments for recommending additional conservation and development that align with the DRECP and the DRECP Conservation Strategy. This plan amendment is being incorporated into the joint EIS/EIR process that will advance in the second quarter of this year.

The Supplement acknowledges the DRECP as the foundation for possible amendments to the CDCA Plan and three Resource Management Plans, and for identification of additional SEZs by BLM-CA. This formal acknowledgment of the DRECP's role in the implementation of the PEIS is important, but further formalization of this linkage in the form of a standardized protocol will be necessary in order to ensure that the PEIS and DRECP are truly integrated. For the proposed BLM variance process, the Supplement acknowledges the DRECP only in a context for general coordination, in a statement that "….[C]onsideration should be given to … coordination with California REAT agencies" (pg. 2-39). At a minimum, a more definitive protocol should be established that would prevent any possible disconnect between applicant initiation of any BLM PEIS variance

application and draft DRECP designations for conservation of specific areas. In any period of time between start of the Solar Energy Development in Six Southwestern States project and the DRECP, any significant siting actions or processes should be closely coordinated with the REAT. We also continue to recommend that when the final iteration of the PEIS is adopted, its implementation is closely coordinated with DRECP development and implementation, through the direct participation of the BLM California Office in the REAT.

In closing, the Agencies thank you for the opportunity to comment on the Supplement to the DPEIS. The State of California values the evolving partnership with the federal agencies and individuals who participate with the REAT, and with the Department of the Interior. The Agencies remain committed to work with BLM and the BLM California Office, to coordinate our joint planning processes and efforts to responsibly and efficiently site and permit renewable energy facilities in California.



ROBERT B. WEISENMILLER
Chair
California Energy Commission

KEVIN W. HUNTING
Chief Deputy Director
California Department of Fish and Game

Thank you for your comment, Sean Gallagher.

The comment tracking number that has been assigned to your comment is SEDDsupp20148.

Comment Date: January 27, 2012 17:41:00PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20148

First Name: Sean
Middle Initial:
Last Name: Gallagher
Organization: K Road Power
Address: 1 Embarcadero Center
Address 2: Suite 360
Address 3:
City: San Francisco
State: CA
Zip: 94111
Country: USA
Privacy Preference: Don't withhold name or address from public record
Attachment: K Road comments on Supp Draft SPEIS.doc.docx

Comment Submitted:

kRoad Calico

January 27, 2012 **VIA INTERNET**

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

Re: Comments of K Road Power on the Supplemental Draft Solar PEIS

K Road Calico Solar (K Road) is pleased to submit these comments on the Supplemental Draft Solar PEIS.

K Road supports the comments filed jointly today by the Solar Energy Industries Association ("SEIA"), the Large-scale Solar Association ("LSA"), and the Center for Energy Efficiency and Renewable Technologies ("CEERT")(collectively, the "Solar Industry Comments").

K Road also supports the comments filed jointly today by a group of conservation, utility and solar developer stakeholders ("Joint Comments"). However, K Road provides additional comment, in the nature of clarification, on one point. To the extent that there is any ambiguity in the Joint Comments, K Road clarifies that the existing and any future amendments to the Calico Solar Project's approved Right of Way Grant should be treated in the same manner as pending applications, i.e. under existing processes, rather than subject to those applicable to "new" applications under the SPEIS. For instance, the proposed prohibition on "new" applications in the Pisgah area after the SPEIS Record of Decision is issued does not apply to existing or future amendments to Calico's previously approved Right of Way Grant. See fn. 6 in the Joint Comments and fn. 7 in the Solar Industry Comments. Nothing in the Joint Comments should be read to the contrary. This is certainly the way that BLM has treated amendments to previously approved Right of Way Grants to date,[1] and should continue to be the case for such amendments. BLM should provide clarity on this point in the Final SPEIS.

Best Regards,

Sean Gallagher
K Road Calico Solar

[1] BLM issued a Notice of Intent to Prepare a Supplemental Draft EIS for the Calico project in October 2011, and has placed the amendments to the Calico ROW Grant on its 2012 Renewable Energy Priority List, http://www.blm.gov/wo/st/en/prog/energy/renewable_energy/2012_priority_projects.html.

Thank you for your comment

The comment tracking number that has been assigned to your comment is SEDDsupp20149.

Comment Date: January 27, 2012 17:41:16PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20149

First Name: [Withheld by requestor]
Middle Initial:
Last Name: [Withheld by requestor]
Organization:
Address: [Withheld by requestor]
Address 2:
Address 3: [Withheld by requestor]
City: [Withheld by requestor]
State: [Withheld by requestor]
Zip: [Withheld by requestor]
Country: [Withheld by requestor]
Privacy Preference: Withhold name and address from public record
Attachment:

Comment Submitted:

As a citizen, taxpayer and one very much involved in my state's (Maryland) and my country's public lands, I would like to comment on your agency's solar plan for the next 20 years.

Last year, I was aware that BLM drafted a Solar Energy Development Programmatic Environmental Impact Study. It is my understanding that your agency did make some important changes last fall (October). However, the areas identified were few.
My understanding was that projects located in solar energy zones will be prioritized for development.

Basically, your agency has left open the possibility that solar development might still occur on more than 20 million acres of BLM lands through the "variance process".
Variances should be the exception, not the rule, for future solar development. Development should not occur in an area unless conflicts with wildlife and other important natural resources can be avoided or offset by purchasing other conservation lands and restoring other important habitat.

Your website states one of its missions is to "protect the health, diversity, productivity of our public lands for future generations."
If we are going to allow solar and other new forms of green energy to be developed let us do it right.
We have so messed up with our fossil fuels and destroyed so much of our environment. Let's do this right……

Solar projects in appropriate zones will require less environmental analysis reduce the cost to developers for offsetting unavoidable impacts and will encourage development of transmission lines to get solar power to our businesses and homes. Basically, development in proper solar zones will be more efficient, less costly, provide more certainty for developers and conservationists, and the power produced will be wildlife friendly.

Why not make better use of this country's degraded lands such as brownfields and old mining sites. By recycling degraded areas rather than using more sensitive and ecologically rich can preserve important wildlife habitats and protect valuable natural resources.

So, We should minimize wildlife and other important natural resources. Limit variances for projects outside the zones (make them an exception; not norm.)
And, we should require developers to avoid, minimize and mitigate any unavoidable effects on wildlife by promoting wildlife friendly solar development.

Thanks you for reading my views and I would appreciate be apprised of future developments in this matter.

Sincerely,

Thank you for your comment

The comment tracking number that has been assigned to your comment is SEDDsupp20150.

Comment Date: January 27, 2012 17:41:40PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20150

First Name: [Withheld by requestor]
Middle Initial:
Last Name: [Withheld by requestor]
Organization:
Address: [Withheld by requestor]
Address 2:
Address 3:
City: [Withheld by requestor]
State: [Withheld by requestor]
Zip: [Withheld by requestor]
Country: [Withheld by requestor]
Privacy Preference: Withhold name and address from public record
Attachment:

Comment Submitted:

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We have so messed up with our fossil fuels and destroyed so much of our environment. Let's do this right……

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So, We should minimize wildlife and other important natural resources. Limit variances for projects outside the zones (make them an exception; not norm.)
And, we should require developers to avoid, minimize and mitigate any unavoidable effects on wildlife by promoting wildlife friendly solar development.

Thanks you for reading my views and I would appreciate be apprised of future developments in this matter.

Sincerely,

Thank you for your comment, Michael Powelson.

The comment tracking number that has been assigned to your comment is SEDDsupp20151.

Comment Date: January 27, 2012 17:43:08PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20151

First Name: Michael
Middle Initial:
Last Name: Powelson
Organization: The Nature Conservancy
Address: 821se 14th Avenue
Address 2:
Address 3:
City: Portland
State: OR
Zip: 97214
Country: USA
Privacy Preference: Don't withhold name or address from public record
Attachment: SOLAR PEIS MITIGATION LETTER 120127.pdf

Comment Submitted:

See attachment

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). Our organizations greatly appreciate the tremendous effort BLM has undertaken in the development of the draft PEIS and the subsequent Supplement, to create a solar development program. However, a critical aspect of a comprehensive solar development program is essentially absent, that of mitigation.

Mitigation, and specifically compensatory mitigation, provides an essential opportunity to protect the health of the nation's land, waters, and wildlife, while facilitating cost-effective, efficient and timely development of our nation's energy resources. To best meet the nation's conservation and energy development goals requires creating a mitigation program that is transparent, systematic, based on sound science, and addresses clear conservation priorities. Many (if not all) of the elements of a comprehensive mitigation program BLM is already using, developing or exist. The BLM/DOE Solar PEIS provides an opportunity to mesh these elements together under a consistent policy framework. The goal is clear policies establishing how compensatory mitigation is integrated into project NEPA documents and BLM decisions for all projects, leading to increased effectiveness and accountability of offsite mitigation while providing project developers, agency staff, and stakeholders with greater certainty regarding mitigation objectives and methods for implementing offsite mitigation. BLM appears to rely on the project proponent to design and develop mitigation proposals with little advance guidance, leading project developers to spend significant time and money developing a plan with very little idea of what will ultimately be required. And for a variety of reasons, project developers are not appropriate entities to design and implement compensatory mitigation.

The PEIS should define a mitigation *framework* that captures the mitigation hierarchy and drives siting and mitigation. The undersigned recommend that the mitigation hierarchy, i.e. avoid, minimize and offset, should be the guiding principle in establishing a mitigation framework and a subsequent compensatory mitigation program. These recommendations are principally focused on "offsets," i.e. compensatory offsite mitigation, however it is important that the entire mitigation hierarchy by addressed in the PEIS.

The primary and most important basis of a mitigation framework, and the basis for a compensatory mitigation program, is an understanding of the ecological attributes of the lands under consideration. We r**ecommend** the PEIS commit to using landscape-scale and finer scale ecological assessments that articulate the ecological health, status and/or condition of the species, habitats, migration corridors, and related values, e.g. recreation, across the landscape of potential development and any subsequent mitigation, i.e. the geographic scope of the PEIS. The PEIS should specifically commit, at a minimum, to incorporating and using existing and ongoing ecological analysis, especially those of its own creation and those of the affected States. Much of this information is currently available or under development by the BLM (and sister DOI agencies and contractors), States, and organizations like The Nature Conservancy and Natureserve. This includes BLM's Rapid Ecological Assessments (REAs), products created for the PEIS by Argonne and others, products produced by BLM's Assessment, Monitoring and Inventory (AIM) efforts, the California Desert Renewable Energy Conservation Plan (DRECP), BLM's Restoration Design Energy Project in Arizona, State Wildlife Plans, State Decision Support Systems (DSS), The Nature Conservancy's Mojave eco-regional assessment and West Mojave least conflict analysis.

A mitigation framework within the PEIS should seek to avoid ecological impacts to the greatest extent possible, especially to resources that cannot be mitigated or are declining – avoiding impacts by proper siting based on ecological analyses is the surest, easiest and best way to avoid subsequent mitigation demands. Significant impacts to habitat that supports special functions and values may simply not be replaceable through mitigation and therefore the best course may be to avoid those areas altogether. We recommend the PEIS identify specific lands where development should not occur. This list should be expanded to exclude development where there are ecological or other resources that are not mitigatable, declining, limited or rare, and should take into account the cumulative effects of development in determining these attributes.

After avoidance, a mitigation framework within the PEIS should seek to minimize ecological impacts through project design, and require Best Management Practices (BMPs) that specifically seek to minimize impacts during construction, operation, maintenance, and decommissioning, including implementing appropriate conservation measures related to timing and conduct of project activities. While the PEIS has extensive discussion of project siting, construction and operational BMPs, it provides little ecological and subsequent monitoring criteria to ensure that impacts are minimized to the greatest extent possible, especially to groundwater. The PEIS should establish clear ecological benchmarks that developers are to address in project development and operation.

The last facet of a mitigation framework is compensation for residual impacts (direct and indirect effects that are not avoided or minimized on-site) by providing replacement habitats, restoration of habitats, or other benefits, e.g. management actions that provide conservation benefits. The mitigation hierarchy recognizes that offsite mitigation is an inherently uncertain undertaking, which means that compensatory mitigation is sought only after efforts to avoid and minimize the impacts have been addressed. Inclusion of a compensatory mitigation program in the PEIS is the most efficient, cost-effective way to ensure the mitigation hierarchy is fully addressed within the mitigation framework.

A robust compensatory mitigation program consists of six elements:

1. An ecological baseline upon which unavoidable impacts are assessed.
2. A transparent mechanism or methodology to assess & quantify unavoidable impacts over the life of the impacts.
3. A consistent methodology to translate the impacts into dollars, i.e. mitigation investments.
4. A structure to hold, prioritize and apply mitigation investments. At a minimum the structure should include BLM, the USFWS, and State Fish and Game agencies – we recommend that key stakeholders be represented as well, including counties and conservation, sportsmen and recreation organizations.
5. A prioritization, e.g. conservation plan, as to where and how mitigation investments should be made to address impacts while seeking the highest return on investment.
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.

We recommend the PEIS, at a minimum, include the establishment of a compensatory mitigation program that encompasses the six elements listed above, including at a minimum, attributes for each element that inform how they would be structured and implemented.

Thank you for your consideration of our comments. We look forward to working with BLM on creating a mitigation framework and specifically regional mitigation plans that ensure protection of our countries critical natural resources while allowing the robust development of solar energy.

Sincerely,

Robert Bendick
Director, U.S. Government Relations
The Nature Conservancy

Gary Taylor
Legislative Director
Association of Fish and Wildlife Agencies

Steve Williams
President
Wildlife Management Institute

Boone & Crockett Club

Miles Moretti
President/CEO
Mule Deer Foundation

Pamela Pride Eaton
Deputy Vice President for Public Lands
The Wilderness Society

Thank you for your comment, Virgil Moose.

The comment tracking number that has been assigned to your comment is SEDDsupp20152.

Comment Date: January 27, 2012 17:57:09PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20152

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Attachment: Big Pine Paiute Tribe comments on Supplement Solar PEIS----1-27-12.pdf

Comment Submitted:

BIG PINE PAIUTE TRIBE OF THE OWENS VALLEY
Big Pine Paiute Indian Reservation

January 27, 2012

Shannon Stewart
Bureau of Land Management
Washington Office
Washington, D.C.

RE: Comments on the *Supplement to the Draft Programmatic Environmental Impact Statement (EIS) for Solar Energy Development in Six Southwestern States (Supplement) (BLM/DES 11–49, DOE/EIS–0403D–S),* and related draft *Programmatic Agreement (PA)*

Dear Ms. Stewart:

Please accept the following comments from the Big Pine Paiute Tribe of the Owens Valley (Tribe). By letter dated June 9, 2011, the Tribe also submitted comments on the *Draft Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States, December 2010 (PEIS)*, and related draft Programmatic Agreement (PA). The Tribe received a PA for this project in February 2011, but no subsequent versions of the PA for Tribal comment were ever received.

Unfortunately, the Supplement did not address most of the Tribe's comments. Most importantly, the Supplement did not add a "distributed generation" alternative to the PEIS, even though this was requested by the Tribe and many other commenters, including the EPA. Without this viable alternative for solar energy development, only a narrow field of false choices is presented by the BLM. The Supplement was an opportunity to address this major failing of the draft PEIS, but this NEPA document remains inadequate in its range of alternatives. The Tribe's draft PEIS comments on this issue (on page 2 of the Tribe's June 9, 2011 letter) still stand for the Supplement:

> "BLM's Solar Energy Development Program Alternative (the Preferred Alternative), Solar Energy Zone Program Alternative, and the No Action Alternative do not provide a true range of alternatives for solar energy development in the United States. The PEIS rejects distributed generation and widespread development of rooftop solar as an alternative even though this would be a true alternative to utility-scale solar development on BLM lands. The justification was the non-mandate from the Energy Policy Act of 2005 and DOI Secretarial Order 3285A1. However, the DOI Secretarial Order requires the study of the best locations of utility-scale renewable energy projects; it doesn't mandate that these projects must be built on BLM lands. Distributed generation and widespread rooftop solar development needs to be an alternative in this PEIS."

Big Pine Tribal Office
P.O. Box 700 • 825 South Main Street • Big Pine, CA 93513
Phone: 760-938-2003 • Fax: 760-938-2942

General Comments:
Large-scale solar projects should not be built on desert lands that are not disturbed, degraded, or contaminated, i.e., brownfields

The deserts of southwestern United States are places where life has successfully evolved despite harsh conditions and where Native Americans learned to adapt and live in harmony. For a variety of reasons, many people value these open and generally intact landscapes. There is much to be learned from these unique places, which could be forever destroyed by short-sighted human disruption.

California's minimally disturbed desert landscapes are inappropriate for solar development because, in part, of the biological resources they contain and the ease with which the resources may be destroyed. The scientific literature is replete with articles discussing the fragility of desert landscapes, including in California. Many habitats in California's deserts evolved slowly, responding to gradual climate changes occurring since the end of the last ice age. Ancient biological resources such as the desert tortoise, pupfishes, creosote bush clones, and relatively undisturbed cryptogamic surfaces persist in places. It is well documented in the scientific literature that recovery from disturbances is slow (see for examples: Webb, R. H. and H. G. Wilshire (eds.) 1983. Environmental effects of off-road vehicles: Impacts and management in arid regions. Springer-Verlag. New York., and Belnap, J., S. L. Phillips, J. E. Herrick, and J. R. Johansen. 2007. Wind erodibility of soils at Fort Irwin, California (Mojave Desert), USA, before and after trampling disturbance: Implications for land management. Earth Surface Processes and Landforms 32(1):75-84). Furthermore, following major disturbances, full recovery to prior conditions is unlikely: what's lost is lost forever, at least from the human timeframe.

There is still a lot to learn about life and ecosystems on earth, and California deserts harbor organisms and undergo processes as yet unknown to science. A principal tenet of conservation biology is keeping all the parts. For example, botanists who study California's desert flora acknowledge "that the Mojave Desert remains a floristic frontier and that we still have an incomplete understanding of its flora in general" (Elvin, M., A. Sanders, and J. Andre. 2012. *Monardella* in the Mojave – A status update on our knowledge of the genus. Abstract, California Native Plant Society Conservation conference, January 2012, http://www.cnps.org/cnps/conservation/conference/2012/pdf/cnps2012-presentation_abstracts.pdf). In addition to botanical resources, the desert contains animals, including arthropods (a group likely to have innumerable taxa as yet undescribed) and cryptogams, which are known to be vitally important to ecosystem health, water dynamics, and nutrient cycling.

Modified Solar Energy Development Program Alternative (BLM Preferred Alternative)

This alternative is inadequate because it leaves over 20 million acres of non-disturbed, non-brownfield desert lands open to industrial-scale solar development. The **Revised Areas for Exclusion** under this Alternative should also include all areas which *are not* brownfields. However, this is was not included in the Areas for Exclusion, thus threatening millions of acres of land better preserved for its cultural and environmental resources.

As the Tribe stated in its June 9, 2011 letter for the draft PEIS:

> "Recommendations of Independent Science Advisors for The California Desert Renewable Energy Conservation Plan (DRECP):
>
> **Principles for Siting and Designing Renewable Energy Developments**
>
> **Maximize Use of Already Disturbed Lands**—To the greatest degree possible, site all renewable energy developments on previously disturbed land (areas where grading, grubbing, agriculture, or other actions have substantially altered vegetation or broken the soil surface), and site all linear facilities within or alongside existing linear rights-of-way, paved roads, canals, or other existing linear disturbances, so long as this does not create complete barriers to wildlife movements or ecological flows. Habitat fragmentation and impediments to wildlife movements are among the greatest threats to desert communities and species, and maximizing habitat connectivity is essential to climate change adaptation. The combined effects of both new and existing linear features on wildlife movement should be mitigated with appropriate crossing structures or corridors to facilitate wildlife movement (p.vi)."

The variance areas near the Big Pine Indian Reservation, located east of the Reservation, near the base of the Inyo Mountains, and in the lava flow blackrock country south of the Reservation, are exactly the same as the designations for solar development presented in the draft PEIS (see Attachment 1). These lands are regarded as traditional Tribal territory. The Owens Valley Paiute cultural landscape would be permanently harmed if large-scale solar development were to occur in the designated variance areas. The Modified Solar Energy Development Program Alternative (BLM Preferred Alternative) should be rejected, and the Tribe is opposed to all variance areas in all six southwestern states of the project.

Modified SEZ Program Alternative

The Tribe also does not recommend the Modified SEZ Program Alternative because these areas are not brownfields and will severely impact environmental and cultural resources. In California, the Pisgah and Iron Mountain SEZs were removed from consideration, but the Imperial East and Riverside SEZs were retained with slight modifications. The modifications did not negate the Tribe's opposition to these two SEZs for environmental and cultural reasons as stated in the Tribe's letter of June 9, 2011, on the draft PEIS.

The Amargosa Valley, Dalmar, Dry Lake, East Mormon Mountain, Escalante Valley, Gold Point, Milford Flats, Millers, and Wah Wah Valley SEZs should also be eliminated because of Native American concerns as expressed in the ethnographic analyses posted on the Solar Energy Development PEIS webpage: http://solareis.anl.gov/documents/ethnographic/index.cfm .

In order to comply with NEPA regulations (40 CFR 1502.14: (a) "Rigorously explore and objectively evaluate all reasonable alternatives)," the BLM needs to include a Distributed Generation Alternative, which would be a reasonable and least environmentally destructive alternative.

Conclusion

The Supplement did not correct the problems of the draft PEIS, and did not address the Tribe's comments on including the reasonable alternative of Distributed Generation in its analysis. The Supplement also did not exclude all areas which are not brownfields according to the Environmental Protection Agency's *RE-Powering America's Land: Siting Renewable Energy on Potentially Contaminated Land and Mine Sites*.

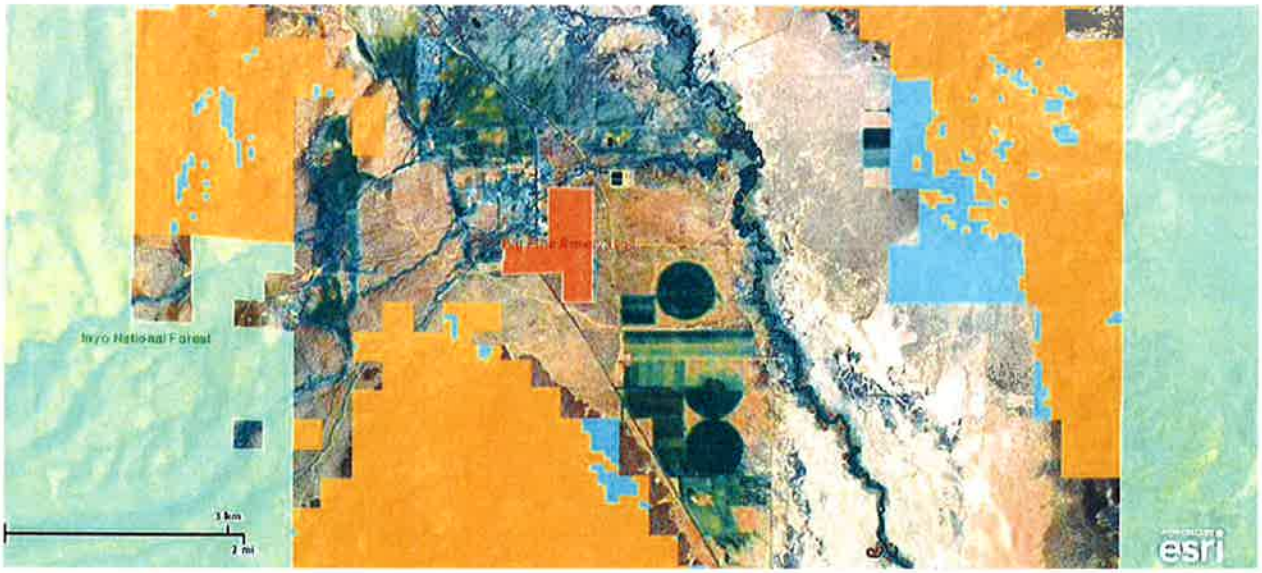
As stated in the Tribe's June 9, 2011, letter on the draft PEIS:

> "The Big Pine Paiute Tribe strongly favors well-planned solar energy development over the continued reliance on fossil fuels and nuclear power. The Tribe believes distributed generation and a massive effort to build and subsidize rooftop solar installations should be at the forefront of United States energy policy in cooperation with tribes."

Sincerely,

Virgil Moose
Tribal Chairperson

ATTACHMENT 1



Variance Areas (in blue) near the Big Pine Paiute Reservation proposed for large scale solar development under the *Modified Solar Energy Development Program Alternative (BLM Preferred Alternative)*.

Thank you for your comment, Harvey Sherback.

The comment tracking number that has been assigned to your comment is SEDDsupp20153.

Comment Date: January 27, 2012 18:03:23PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20153

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Attachment:

Comment Submitted:

January 27, 2012

California's Solar Powered Aqueduct System Featuring The Central Valley's Delta-Mendota Canal

America's coal fired, oil fired, natural gas and nuclear power plants use more than 185 billion gallons of fresh water daily in the generation of greenhouse gas producing electricity. Only agriculture uses more water.

As you know, photovoltaics consumes no water and produces no greenhouse gasses over their 20-t0-40 year life-cycle. This is very important as we reluctantly face the unsettling prospect of worldwide climate destabilization.

In 2010 the Department of Water Resources partnered with the University of California to explore the feasibility of putting solar panels "along or over" California's Aqueduct System.

Solar panels can cover, run alongside or be floated along the canals on flat pontunes. Why ruin pristine desert lands, especially in the Mojave Desert, when there are hundreds of miles of these canals are already in place.

For example, there is California's Delta-Mendota Canal. Its purpose is to replenish the San Joaquin River with Delta water.

Construction period: 1946-1951
Length: 117 miles

Typical section:
Bottom width: 100 feet
Side slope: 3:01
Water depth: 14.3 feet

The Delta-Mendota Canal is mostly concrete-lined and is operated by the United States Bureau of Reclamation and the Delta-Mendota Water Authority.

Aerial Photo: Delta-Mendota Canal

http://www.flickr.com/photos/amenfoto/3285100067/

Aerial Photo: Delta Mendota Canal with windmills in the Diablo Foothills.

http://www.flickr.com/photos/amenfoto/3285469699/

The 117 mile Delta-Mendota Canal is ideally situated in a sunny desert-like environment.

Because of its proximity to the existing power grid, little or no new land would be required to connect the Canal's photovoltaic canopy to the Path 15 transmission line corridor. Close proximity to the grid means that less electricity is lost during transmission.

Water is life!

The Delta-Mendota photovoltaic canopy project can be seen as a pilot concept for other out of state applications. It would also act as a "stimulus" to California's scientific and engineering community, providing an opportunity to develop new, cost-effective green technologies.

This project is unique among alternative energy projects because it is designed to protect California's water resources, while delivering clean, renewable electricity.

Harvey Sherback
Berkeley, California

Thank you for your comment, Joni Bosh.

The comment tracking number that has been assigned to your comment is SEDDsupp20154.

Comment Date: January 27, 2012 18:09:23PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20154

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Comment Submitted:

The revised PEIS is an improvement over the original. Removing some lands from approved zones, such as the Pisgah in California and Bullard Wash in Arizona, makes great sense. I would have removed even more areas. So, too, does establishing a clear process for identifying lands outside of the zones

However, degraded lands such as mining sites, brownfield sites and abandoned/exhausted farming lands should be available for development BEFORE pristine wildlands.ANY solar development, inside or outside of a zone, must be consistent with BLM wildlife policy with tough and protective mitigation measures that get enforced.

There is more than enough land included in the current list of zones to satisfy years of solar energy development. There is really no reason to look at other lands, less suitable, through a variance process.

The agency should focus on those sites with the best chance of widespread support, develope a clear plan for mitigation and have no or little impact on our nation's waters, wildlife and unique scenic treasures.

Thank you for your comment, Laurie Hietter.

The comment tracking number that has been assigned to your comment is SEDDsupp20155.

Comment Date: January 27, 2012 18:12:46PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20155

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Attachment: Soda Mountain PEIS Comment Letter 27January 2012.pdf

Comment Submitted:

Please see attached comment letter. The letter will also be sent by certified mail.
Laurie Hietter

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27 January 2012

U.S. MAIL & INTERNET FORM
Solar Energy Draft PEIS
Argonne National Laboratory
9700 S. Cass Avenue, EVS/240
Argonne, IL 60439

Re: Comments on the Supplement to the Solar Energy Development Draft Programmatic Environmental Impact Statement

To whom it may concern:

Thank you for the opportunity to comment on the Supplement (SDPEIS) to the Solar Energy Development Draft Programmatic Environmental Impact Statement (PEIS) prepared by the U.S. Department of Energy, Energy Efficiency and Renewable Energy Program (DOE) and the U.S. Department of the Interior, Bureau of Land Management (BLM) pursuant to the National Environmental Policy Act (NEPA).

Panorama Environmental, Inc. submits this comment letter on behalf of the applicant for the proposed 350 MW Soda Mountain Solar Project located approximately 5 miles southwest of Baker, California on both sides of Interstate Highway 15 (I-15) in San Bernardino County, California (CACA-049584).

While the programmatic comments of the solar trade organizations will address most concerns regarding the PEIS as it relates to the Soda Mountain Solar Project, there are two matters of particular importance to the project that we would like to address in detail, namely, the pending projects exemption and the desert tortoise connectivity areas map.

Pending Applications

The SDPEIS states that pending applications filed prior to 30 June 2009 will be subject to "continued processing under existing policies," including the February 2011 Instruction Memoranda (Nos. 2011-059 to 2011-061) (SDPEIS Table 1.7-1, page 1-9). We support the exclusion of pending applications from the terms of the PEIS and its Record of Decision (ROD). However, the SDPEIS does not clearly state the pending projects exemption, and some provisions actually contradict it. We therefore respectfully request the following clarifications.

Clarify Ambiguous Language

The SDPEIS states that pending projects will continue to be processed under "existing regulations and policies". However, the PEIS will itself become "existing policy" upon issuance of its ROD. We therefore recommend:

- clearly defining "existing regulations and policy" to mean regulations and policies in effect prior to adoption of the PEIS ROD; and

- adding language to the PEIS and its ROD expressly stating that pending projects are not subject to the PEIS before or after issuance of its ROD, and will instead be processed as though the "no action" alternative had been adopted.

Delete Express Contradictions and Modify Implicit Contradictions

Some language in the SDPEIS contradicts the pending projects exemption and should be deleted. For example, the following provision assumes the PEIS ROD would apply to pending projects:

> Pending applications on lands proposed as exclusion areas for utility-scale solar energy development in the Final Solar PEIS are likely candidates for denial. Upon issuance of the Solar PEIS ROD, the BLM may deny pending applications to the extent such applications overlap with exclusion areas identified in the ROD for the protection of ecological, cultural, visual, or other specified resource values (SDPEIS Page 1-11, lines 14-18).

We recommend deletion of this language because it undermines the pending projects exemption. The Federal Land Policy and Management Act of 1976, the 43 C.F.R. Part 2800 regulations, and BLM's February 2011 Instruction Memoranda already provide BLM with the tools it needs to reject pending applications.

Other provisions of the SDPEIS contradict the pending projects exemption by implication. For example, by stating that the BLM may deny pending applications before adoption of the PEIS, the following statement creates a presumption that the PEIS will apply to pending projects after its adoption: "The BLM may decide to deny pending solar applications before completion of the Solar PEIS ROD if the BLM has a supportable, rational basis" (SDPEIS Page 1-10, lines 24-25). We therefore request replacing this sentence with the following: "Although BLM will not apply the Solar PEIS to pending solar applications, the BLM still may decide to deny pending solar applications if the BLM has a supportable, rational basis on other grounds."

To avoid similar confusion, we also recommend qualifying the following provision, "The ROD for the Solar PEIS will recognize all previously approved solar projects" by adding the following clause: "and will expressly exclude pending projects from its terms." (SDPEIS Page 1-12, line 18).

Specify How to Implement the Pending Projects Exemption

Although the pending projects exemption is a clear concept, its application is less clear, particularly with regard to substantive resource issues. Because the PEIS is a prospective document intended to regulate and facilitate solar development applications submitted after 30 June 2009, we recommend the following additions to the SDPEIS to ensure proper implementation:

- an express statement that PEIS maps do not apply to approved or pending project sites unless the approved project is cancelled or the pending project application is withdrawn or rejected. We recommend overlaying approved and pending project boundaries on each of the PEIS maps with a legend item summarizing this concept.

- an express statement that neither the maps nor the resource determinations of the PEIS are to inform pending project NEPA analyses, which shall instead independently assess project-specific resource issues on a case-by-case basis.

Desert Tortoise Conservation Areas and Proposed Connectivity Areas

The SDPEIS includes a map depicting "Desert Tortoise Conservation Areas and Proposed Connectivity Areas." (SDPEIS Figure 2.3-1, page 2-44). We request that the proposed connectivity area overlaying the Soda Mountain Solar Project in the valley between the Soda Mountains south of Baker, west of the Mojave National Preserve (MNP), be removed for the following reasons:

1. No tortoise were found in the proposed connectivity area after recent protocol surveys;
2. The proposed connectivity area is surrounded by regional barriers to tortoise movement;
3. There is little, if any, opportunity for migration through the proposed connectivity area; and
4. The Soda Mountain Solar Project would not preclude migration through the valley.

No Tortoises

No tortoises were found on the site after conducting protocol-level surveys (RMT and URS 2010) (see discussion of field surveys below). Separate from the surveys, the closest historical tortoise

observations documented in database queries, input from local resource specialists (including BLM biologists), are approximately 16 miles to the north, 14 miles to the east, and 28 miles to the southwest of the study area (RMT and URS 2010). The results of the surveys and database queries are on file with the California Desert District Office under CACA-049584.

Recent Field Surveys

The lands in and around the proposed connectivity area west of the Mojave National Preserve (MNP) were extensively inventoried for the presence of sensitive vegetation and wildlife species for the Soda Mountain Solar Project. A protocol-level desert tortoise field survey consisted of 100% coverage belt transects spaced at 33 ft within a 6,770-acre study area. In addition to 100% coverage of the study area, Zones of Influence (ZOI) transects were also performed, which are defined as the areas where tortoise on adjacent lands may be indirectly affected by the Project. ZOI transect locations were developed and approved in consultation with biologists from the Barstow BLM Field Office and were in areas containing suitable tortoise habitat based on Geographic Information System (GIS) aerial mapping, Digital Elevation Model (DEM) mapping, and field observations of suitable habitat within the study area. The ZOI were surveyed with transects spaced at 100 ft, 300 ft, 600 ft, 1,200 ft, and 2,400 ft intervals, where applicable.

To validate the accuracy of the protocol surveys, biologists conducted an additional intensive Quality Assurance/Quality Control (QA/QC) survey on 5% of the study area. This intensive survey effort was composed of 100% coverage using belt transects with spacing reduced to 10 ft width and was conducted in randomly-chosen, representative habitats within the study area. QA/QC transects were conducted perpendicular to the initial transect survey direction in order to maximize tortoise detection. A comparison was then made between data recorded from transects during the 100% survey effort (33 ft belt transects) with data obtained during the intensive QA/QC survey effort (10 ft belt transects)(RMT and URS 2010).

Regional Barriers to Tortoise Movement

The proposed connectivity area in the Soda Mountains area is surrounded by barriers to tortoise movement. Figure 1 shows the topography of and around the proposed connectivity area. The south and east portion of the connectivity area is bounded by I-15, which serves as an effective barrier to tortoise movement to the south and east, as does the Rasor Road Off Highway Vehicle Area (Figure 2). The Soda Mountains surround the proposed connectivity area and serve as a barrier to tortoise movement from the connectivity area to the north, east and west. Moreover, Baker Sink, part of a north-south low topography feature and desert wash complex located to the east of the connectivity area, and Soda Lake, the dry playa Baker Sink drains into, have also been identified as areas of low potential for tortoise occurrence (Hagerty et al. 2010). In

combination, I-15, the Soda Mountains, Baker Sink and Soda Lake all serve as formidable barriers to tortoises migrating into or out of the MNP, with the perimeter of the proposed connectivity area surrounded by one or another barrier to migration.

A recent National Park Service article (Hagerty and Tracy 2011) corroborates this conclusion with a genetic study determining that the Soda Mountains and Baker Sink serve as effective barriers to desert tortoise migration and indicating that the area around the Soda Mountain Solar Project site has a low probability of tortoise occurrence, with likely connectivity pathways located well north, east, south and west of the Soda Mountain Solar Project site (Figure 3).

No Connection

But for the barriers mentioned above, the proposed connectivity area might seem to be a logical corridor to the MNP because of its proximity, and it is on this basis that the proposed connectivity area appears to be drawn: to provide connectivity northwards from the Cronese Basin Area of Critical Environmental Concern, through the portion of the Soda Mountain Solar Project site lying to the northwest of I-15, and then eastwards under I-15 and into the MNP (Figure 2).

Given the barriers mentioned above, however, it is highly unlikely that desert tortoises would traverse the narrow bottlenecks at the southern and northern extremes of the proposed connectivity area to make use of it as a migration corridor. The southern extreme is approximately 200 feet wide at its narrowest point, bounded by the I-15 to the southeast and mountainous terrain to the northwest. The northern extreme is even more limited, apparently relying on a 100-foot wide culvert under I-15 to allow movement eastwards into the MNP, as stated above. And even if such narrow entrance/exits to the proposed connectivity area were feasible migration routes, they lead directly into the Baker Sink and its substantial desert wash complex, which act as a barrier to migration (Hagerty et al. 2010; Hagerty and Tracy 2011).

Project Not a Barrier to Migration

Finally, even if the proposed connectivity area were viable, the proposed Soda Mountain Project would only occupy a small portion, leaving substantial habitat for migration, if it occurs.

Conclusion

We sincerely appreciate the efforts of BLM and DOE to promote environmentally responsible solar energy development of BLM-administered lands through the PEIS process. Our comments above seek to further those efforts by clarifying the pending projects exemption and requesting

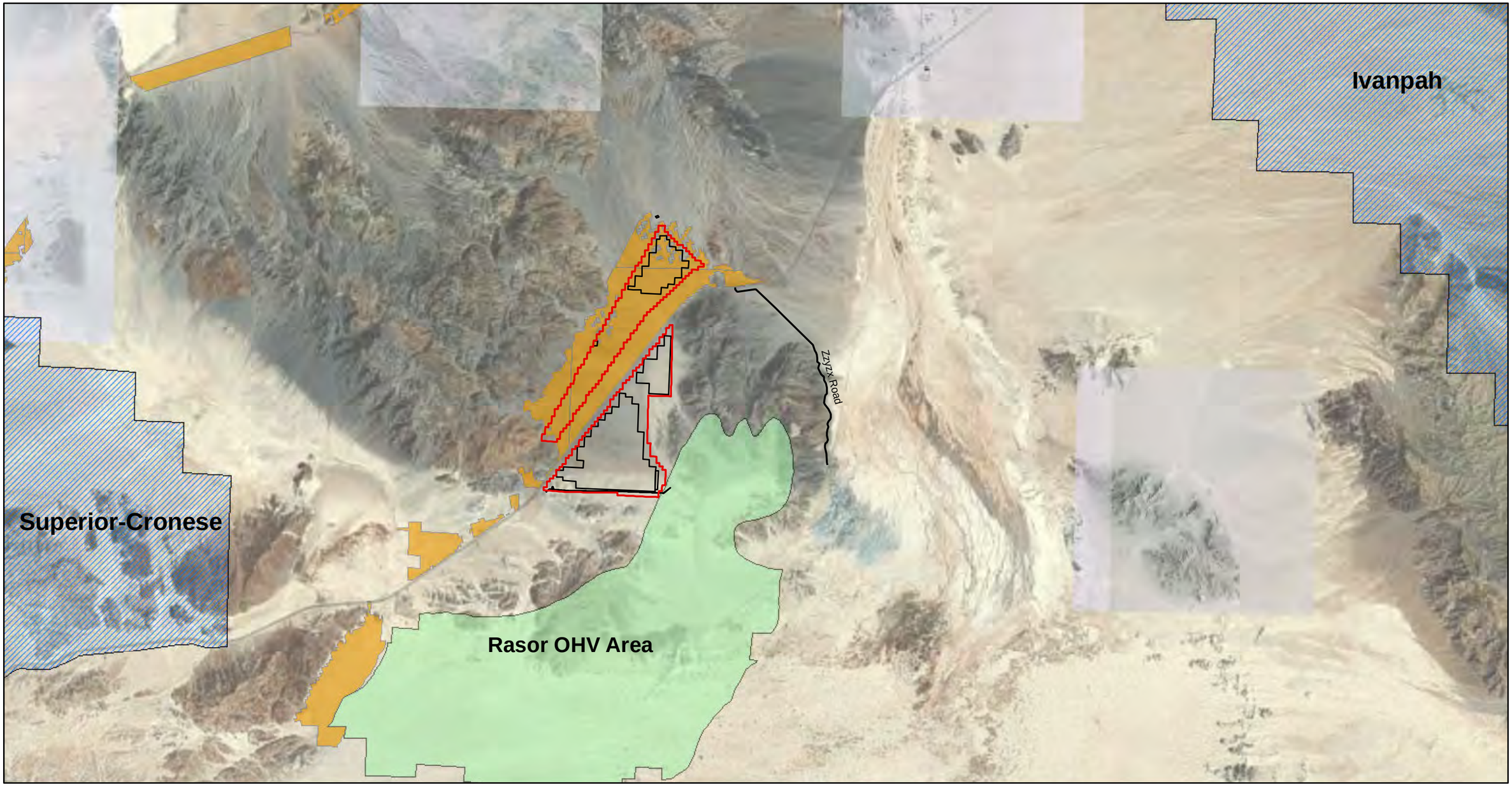
removal of a desert tortoise connectivity designation that lacks factual support. Thank you for your time and consideration.

Sincerely,

Laurie Hietter
Principal
Panorama Environmental, Inc.

Enclosures

Figure 1: Relief Map
Figure 2: Desert Tortoise Connectivity and Land Use
Figure 3: Desert Tortoise Occurrence
Exhibit A: References



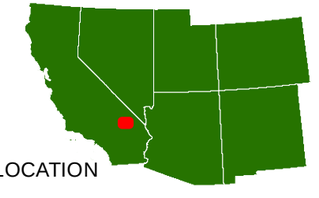
LEGEND

- PROPOSED PROJECT AREA BOUNDARY
- PROJECT FACILITY FOOTPRINTS
- DESERT TORTOISE CONNECTIVITY AREA
- DESERT TORTOISE CRITICAL HABITAT
- RASOR OHV AREA

0 0.5 1 2 3 4 Miles

N

SHEET LOCATION



PROJECT: SODA MOUNTAIN SOLAR PROJECT

SHEET TITLE: DESERT TORTOISE CONNECTIVITY AND LAND USE

DRAWN BY: fongc

DATE PRINTED: 1/27/2012

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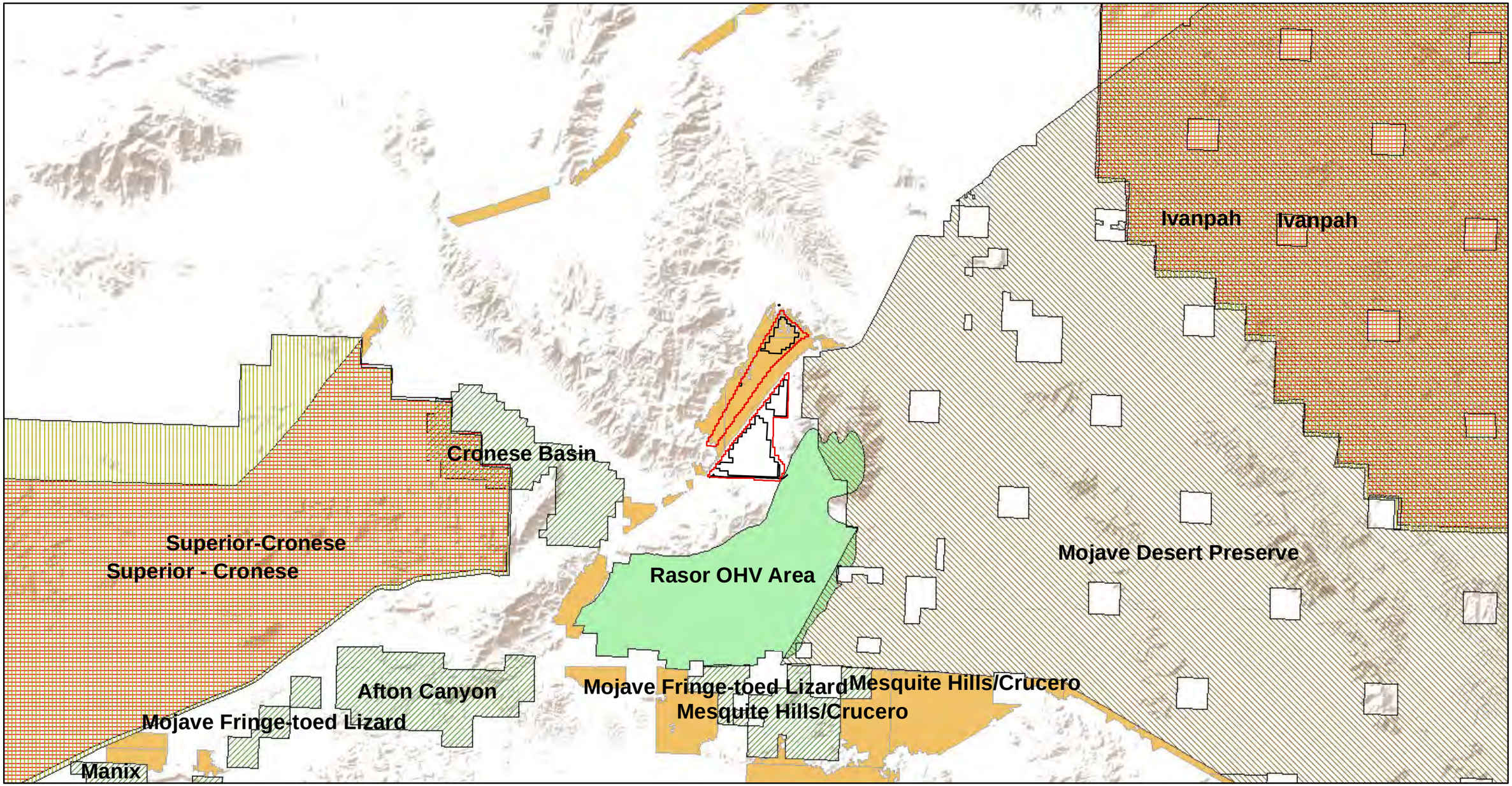
Figure 2: Land Use



LEGEND

- PROPOSED PROJECT AREA BOUNDARY
- PROJECT FACILITY FOOTPRINTS
- DESERT TORTOISE CONNECTIVITY AREA
- ACEC
- CHU
- DWMA
- National Park
- RASOR OHV AREA

0 1.25 2.5 5 7.5 10 Miles

N

SHEET LOCATION

PROJECT:	SODA MOUNTAIN SOLAR
SHEET TITLE:	DESERT TORTOISE CONNECTIVITY AND LAND USE
DRAWN BY: fongc	DATE PRINTED: 1/20/2012

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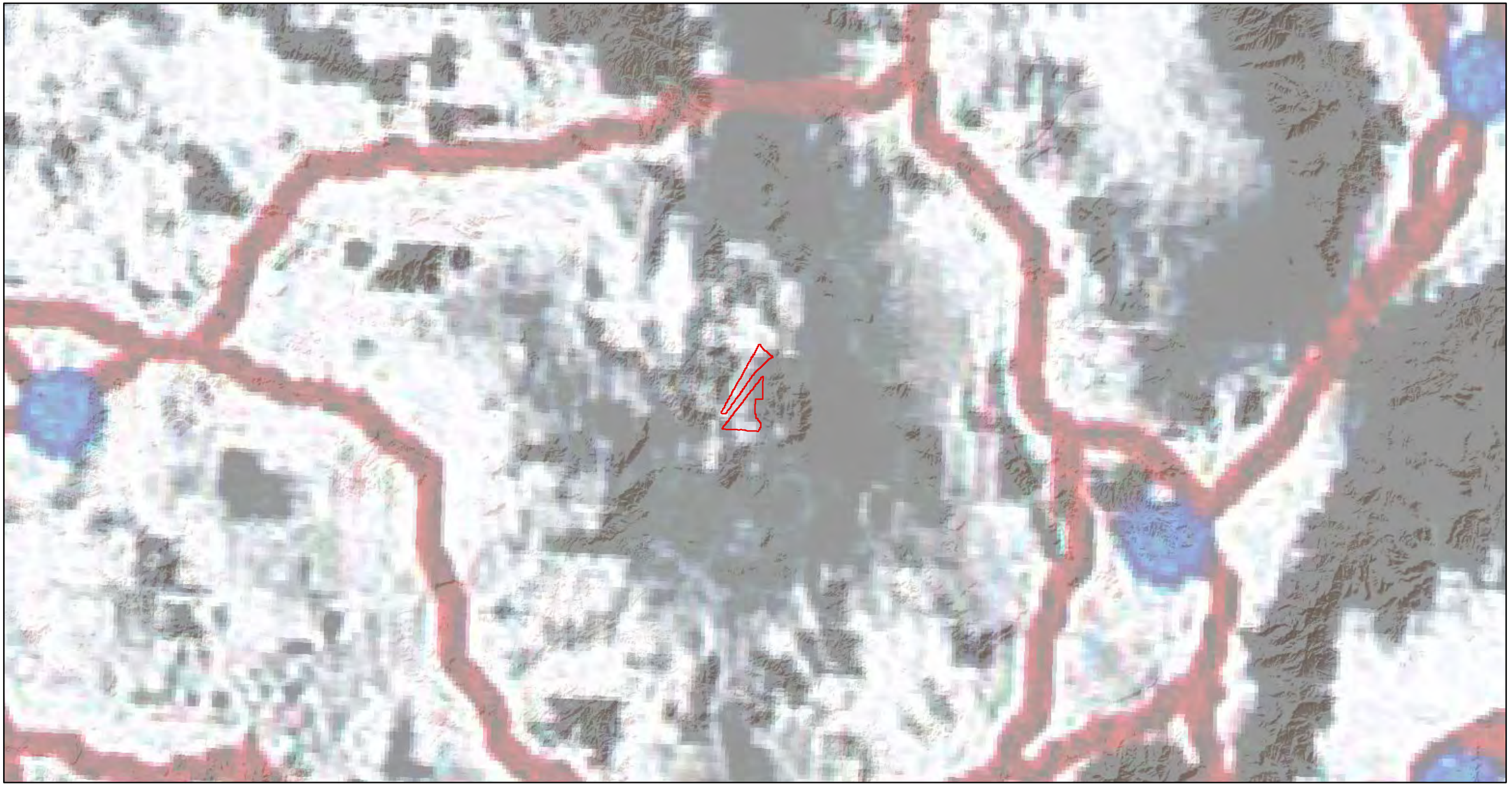
Figure 3: Probability of Tortoise Occurrence near Soda Mountain Solar Project Area



LEGEND

Source: Hagerty et al. 2010

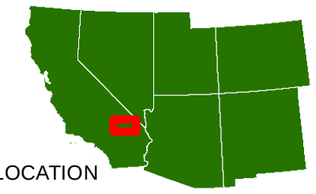
Project_Area5

Gradient of grey (floating values) indicate probability of desert tortoise occurrence. Black indicates lowest probability (0) while white indicates highest probability (1). Red lines indicate least cost paths between pairs of sampling locations. Blue dots represent the 25 population centroids

0 2 4 8 12 16 Miles

N

SHEET LOCATION



PROJECT:	SODA MOUNTAIN SOLAR
SHEET TITLE:	DESERT TORTOISE CORRIDORS
DRAWN BY: fongc	DATE PRINTED: 1/20/2012

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Exhibit A

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Thank you for your comment, Bryan Faehner.

The comment tracking number that has been assigned to your comment is SEDDsupp20156.

Comment Date: January 27, 2012 18:35:44PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20156

First Name: Bryan
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Privacy Preference: Don't withhold name or address from public record
Attachment: Final NPCA et al. Supplemental Draft Solar PEIS Comments 1.27.12.pdf

Comment Submitted:

National Parks Conservation Association • Mojave Desert Land Trust • Morongo Basin Conservation Association

January 27, 2012

Secretary Ken Salazar
Department of the Interior
1849 C Street, NW
Washington DC 20240

Secretary Stephen Chu
U.S. Department of Energy
1000 Independence Ave., SW
Washington, DC 20585

Re: Supplement to the Solar Energy Development Draft Programmatic Environmental Impact Statement

Dear Secretaries Salazar and Chu:

The National Parks Conservation Association (NPCA), Mojave Desert Land Trust (MDLT) and Morongo Basin Conservation Association (MBCA) appreciate the opportunity to submit comments on the Supplement to the Solar Energy Development Draft Programmatic Environmental Impact Statement (PEIS).

NPCA, the leading private voice for the parks, is a national non-profit well-represented in the Southwest with offices in Arizona, Colorado, California, Nevada and Utah. We represent 600,000 supporters who care deeply about America's shared natural and cultural heritage preserved by the National Park System. Tens of thousands of our supporters have already contacted you requesting that agencies be "smart from the start" by working to ensure that new solar energy infrastructure is appropriately located away from National Park Service (NPS) units and critical conservation lands.

The Mojave Desert Land Trust conserves land with important biological, cultural and scenic values. MDLT's work helps to secure the biodiversity, beauty and integrity of healthy desert ecosystems for future generations to enjoy. MDLT has over 1300 members and has protected over 32,000 acres of desert land through acquisition, land stewardship and strategic partnerships.

The Morongo Basin Conservation Association is a 501(c) 4, community-based, California Nonprofit Corporation, incorporated in 1969 and dedicated to preserving the economic and environmental welfare of the Morongo Basin. MBCA has a vision that many residents of California's Morongo Basin share: healthy environment, rural character, prosperous communities and cultural wealth. MBCA has over 1000 members throughout California's High Desert Region.

Our three organizations continue to support the Modified Solar Energy Zone (SEZ) Alternative that would focus development within discrete low-conflict lands. We believe that it best balances the need to make lands available for new solar energy infrastructure, while ensuring that national park units, other protected lands and sensitive desert landscapes are conserved. If the agencies select the Modified Preferred Alternative, which would allow for new development on approximately 20 million acres of Bureau of Land Management (BLM) lands outside SEZs and around parklands, then strong protective measures must be put in place.

Accordingly, we believe the "precautionary principle" should be applied to help ensure that park resources and lands surrounding landscapes that may impact them are conserved. NPCA believes that this do no harm until you know more approach, which is reflected in the Administration's goal of being "smart from the start" should mean that inherently high-conflict public lands within 15-miles of units of the National Park System should be excluded from consideration unless the NPS determines they are in fact appropriate for consideration under the proposed "variance" process.

This policy would help deter controversial projects in the future, so that mistakes made in the past relating to the permitting of poorly sited solar facilities near parks, do not occur again. We strongly believe that this is an entirely reasonable and sensible precaution to help ensure that America's national parks and their sensitive resources are preserved unimpaired for future generations to enjoy.

To be clear, our groups strongly applaud the Department of Interior (DOI) and Department of Energy (DOE) for their efforts to bolster solar energy generation in the United States and improve planning and evaluation of utility-scale solar energy development facilities on BLM lands. Solar energy is one of our countries most promising renewable energy sources in transitioning away from America's current reliance on coal-fired power plants that contribute to unhealthy air quality in many of our nation's national parks. Establishing smart environmental policies and mitigation strategies for solar energy projects will contribute to bringing clean, renewable solar energy to market more quickly.

We believe that bringing more solar energy on-line and protecting park resources and critical desert landscapes is not mutually exclusive. However, it's critical that close coordination between the NPS, stakeholders and local gateway communities, takes place. Our groups have worked with community leaders, local elected officials and stakeholders to educate and inform affected parties about this process and implications, and we have encouraged their participation. Still, some residents and stakeholders, especially from the California Desert, may not have the financial means to participate in this important national level discussion, have felt disassociated from this process and are concerned about impacts to national park units and resources their communities depend on. We thank DOI and DOE for their recent effort to better engage and listen to the concerns of local stakeholders who live in park gateway communities, so that conflict is reduced and concerns are addressed.

We appreciate the hard work the departments and agencies have put into preparing the Solar Energy PEIS and hope that our concerns and suggestions, which are more broadly presented below, are carefully considered.

I. Improvements Have Been Made to Proposed SEZs, But More SEZs Are Needed

The Modified Solar Energy Zone (SEZ) Alternative poses the least potential harm to parks because it would focus solar development within identified SEZs (or "zones") that would help avoid needless conflicts with the 37 park units located in proximity to BLM lands identified in the PEIS. It would also bring solar energy facilities on-line faster, while better preserving broader ecological landscapes anchored by our national parks. Furthermore, it would also allow for the creation of new SEZs as necessary after an additional environmental review and public comment.

We thank DOI and DOE for removing and reconfiguring earlier proposed SEZ's away from national park units, wildlife corridors and pristine desert lands. The removal and/or reconfiguration of the Iron Mountain SEZ, the Pisgah SEZ, the Riverside East SEZ, the Amargosa Valley SEZ and the Red Sands SEZ are major improvements that we greatly appreciate.

Our groups recognize that the 285,000 acres identified within the currently proposed zones may not be sufficient and that the creation of new zones in well-studied, appropriate locations is needed. At this time, we recommend that the BLM prioritize work to identify appropriate lands within known locations such as the Chocolate Mountains, West Mojave and the Daggett Triangle in California. Additionally, we believe that California's Desert Renewable Energy Conservation Plan (DRECP) process should be used to identify future California SEZs and modify current SEZs because this process has had extensive stakeholder input, is habitat focused and has a great deal of information about rare and sensitive species.

We also recommend that DOI and DOE partner with the Department of Defense (DOD) to identify military lands that may be suitable for solar development and for becoming new SEZs. The DOD recently announced that it had examined lands in southern California and found that approximately 50,000 acres are suitable for solar development, but other military lands in southwestern states should also be considered. We believe that the creation of DOD/DOI zones and the addition of other appropriate zones should help reduce the need for public lands outside of zones by providing known, incentivized lands with high insolation and minimum conflict. DOI and DOE should work in partnership with other federal departments and agencies to inventory lands in order to identify disturbed properties that may be more appropriate for new zones. Finally, consideration should be given for consolidating state lands and exchanging them for disturbed lands closer to load centers.

II. The Preferred Alternative and Variance Process Need Major Improvement to Ensure the Preservation of Units of the National Park System

Our three organizations oppose the Modified Solar Energy Development Program Alternative, which is the preferred alternative, because it would allow for 20 million acres of BLM lands

outside of SEZs to be made available (via the "variance" process) for applicants to pursue construction of solar energy facilities. We continue to believe that making lands available outside of the SEZs is unnecessary and, more importantly, contrary to the Administration's underlying goal of instituting a proactive planning framework to expedite solar energy development. Moreover, due to the increased potential for resource conflicts, there would likely be additional (and avoidable) administrative costs for DOI, as well as extra costs, time, and uncertainty for companies attempting to acquire permits. In sum, we believe allowing for solar development within the 20 million acres of BLM lands identified for variance is quite simply a distraction and would shift focus and resources away from instituting an effective and common-sense process laid out under the Modified Solar Energy Zone (SEZ) Alternative that holds so much potential.

If the preferred alternative were to be selected in the final Record of Decision (ROD), we insist that a number safeguards are put in place to help ensure that park resources, including park scenery, wildlife and wildlife corridors, night skies and water, are protected for future park visitors to enjoy. Because the development of solar infrastructure near national park units is inherently high-conflict, we believe that public lands within 15-miles of units of the National Park System should be excluded from consideration unless the NPS determines they are appropriate for consideration under the proposed "variance" process. Our groups recognize that the proposed variance process was developed to allow for greater flexibility to identify and develop low-conflict locations for solar development, but lands near NPS units will likely rarely meet these criteria.

As currently proposed, hundreds of thousands of acres of variance lands lay directly adjacent or near national park units, and could be available for application. The development of these variance lands could present multiple negative impacts including, but not limited to, disrupting wildlife corridors, negatively impacting tourism, degrading the visitor experience, harming ecologically core lands, impacting park water sources, impairing scenic vistas, and inducing inappropriate development on private in-holdings within park boundaries.

In its current form, variance would allow project applications adjacent to National Parks, on pristine desert habitat, and would re-introduce many of the conflicts associated with the no action alternative. Those include a scattered approach to developing renewable energy which could fragment landscapes, encourage de-facto zones along right-of-way corridors, and negatively impact communities and wildlife. We believe that developing a robust system of incentivized zones represents the best alternative to reduce conflict by providing consensus-based locations to direct industry towards.

Importantly, we think that DOI and DOE insufficiently stress that variance is a lesser priority for siting new solar development and that applicants should be directed towards utilizing low-conflict, consensus-based SEZs. Variance should be the rare exception to SEZs and strong incentives and disincentives should be in place to focus utilities away from the proposed 20 million acres of variance lands.

We also believe that variance should be strengthened to include all stakeholders, including the public at large, at pre-application meetings to assess proposals. If an applicant seeks to build a

solar project, it makes sense to introduce the proposal to neighboring communities whose livelihoods could be impacted, before the BLM accepts a full application.

III. Proposed Variance Lands Put Numerous NPS Units at Risk

Our three organizations have identified locations currently proposed for variance that present high resource conflict to National Parks, park gateway communities, and/or natural or cultural resources and should be made exclusion areas and off-limits to new solar development. This list indicates foreseeable conflicts that would likely occur within proposed variance lands if solar projects were proposed. Threatened parks include:

Mojave National Preserve in CA

- Variance lands proposed in Ivanpah Valley on both sides of the California/Nevada state line provide significant conflict due to the potential taking of desert tortoise for Ivanpah Solar and the multiple development projects proposed including solar projects, an international airport, a gas pipeline, an agricultural inspection station, and a recently approved high speed rail. The cumulative impacts of these foreseeable projects, the dense population of tortoises, and the significant take of desert tortoises associated with Ivanpah Solar should preclude this area from variance applications.
- Lands north, east, and west of Clark Mountain should be excluded. This exclave of Mojave National Preserve protects Joshua Tree woodland, Pinyon-Juniper woodland, and diverse barrel cactus-Yucca transition zone. The lands directly north of this unit are proposed for variance and for a designated energy corridor connected to the Ivanpah Valley to the east. The Joshua tree, yucca covered lands proposed for variance are surrounded on three sides by wilderness, and adjoin the boundary of Mojave National Preserve. These lands provide habitat for desert tortoise and may be a significant refuge for the California population of the Gila monster. We oppose variance lands in this area and the proposed energy corridor directly adjacent to the Preserve's boundary. We recommend energy transmission lines be routed along the nearby energy corridor to the south along the Interstate 15 right-of-way.
- Nearly 9,000 acres of variance is proposed directly adjoining Mojave National Preserve south and west of Baker. The Preserve forms the Southern boundary of the variance while the northern boundary is close to the proposed Soda Mountain Wilderness Area. This area is home to desert tortoise and kit fox and is an important habitat for dune dwelling species such as the Mojave fringe-toed lizard. This area is unique for its spring wildflower blooms of purple verbena and its hanging dune systems, which are sand dunes that form on mountain sides creating unique micro-habitats. Desert tortoise is present in this area.
- Variance lands located east of Nipton in Nevada along the SR 164 corridor cover dense, old growth Joshua tree, yucca, and black brush forest. Scientists believe expansive black brush cover may take 15,000 years to develop. This area is one of the most significant black brush stands in the Mojave. This site provides uninterrupted views of Mojave National Preserve's New York Mountains to the south and west.

Joshua Tree National Park in CA

- Lands surrounding Joshua Tree National Park to the east of the city of Twenty-nine Palms and to the south and east of the Marine Corps Air/Ground Combat Center have been identified as variance lands for future solar development under the Solar PEIS Supplement's

preferred alternative. Solar development on these lands would interrupt some of Joshua Tree National Park's critical wildlife corridors as identified by the SC Wildlands report, "A Linkage Design for the Joshua Tree/Twenty-nine Palms Connection." This development could also ultimately undermine local and regional tourism by denigrating the park's natural resources which are closely linked to gateway communities' tourist economies. In fact, in 2010, the 1.4 million visits to Joshua Tree National Park contributed almost 60 million dollars into local gateway communities. In a 2010 University of Idaho Visitor Use Study, visitor groups stated that protecting Joshua Tree National Park's views without development (90%) and wildlife (81%) were either important or extremely important to them. Solar development on these variance lands could disrupt wildlife corridors and mar scenic vistas that, in turn, would interfere with the key reasons tourists visit the Joshua Tree National Park and the High Desert Region of California. A map showing these wildlife linkages is attached to these comments and further illustrates how solar development in this area could harm regional planning efforts to protect critical connectivity corridors, as well as visitor experience at Joshua Tree National Park.

Another concern related to the designation of variance lands is the considerable financial investment that has been undertaken by local, regional and national land trust organizations. In the California desert, the Mojave Desert Land Trust is a landscape scale conservation partner to the NPS, BLM, DOD and the California Department of Fish & Game. To date, MDLT has invested more than $18.6 million to acquire 36,400 acres of land within desert national parks and designated wilderness areas managed by the BLM. MDLT has conveyed to the United States approximately 13,800 acres of public land valued at $6.2 million. Approximately $14 million of these acquisitions were completed with private donations. The consideration of variance lands may well impact MDLT's conservation investments to date and the wildlife linkages that keep them connected. This will have a significant and negative impact on both their existing investments and their ability to secure future funding.

<u>Death Valley National Park in CA and NV</u>

- Variance proposed on Death Valley National Park's eastern boundary, surrounding Devil's Hole and Ash Meadows National Wildlife Refuge, and along the Amargosa River corridor should be excluded. This region includes hundreds of thousands of acres along Death Valley's boundary and encircling Ash Meadows. The Amargosa Valley SEZ was reduced by 80% due to resource conflicts, and is recommended for complete removal. It is home to an overdrawn aquifer, the largest wetland in the Mojave, and the second highest concentration of endemic species in North America.

<u>Grand Canyon National Park in AZ</u>

- The remote lands north of the park all the way to the southern Utah border are a diverse and spectacular landscape, and seem unlikely to be a great place to locate a solar energy facility. The people who visit these lands for recreation enjoy the vast, primitive and undeveloped open space that has become rare, even in the West. The lands that the Secretary of Interior recently withdrew from new uranium claims, especially, are not where we would like to see industrial development of any kind. The Grand Canyon watershed is fragile, and not completely understood, and we ask that the uranium mining withdrawal areas, at least, have any variance lands removed. The setback from the National Park, as well as from Grand Canyon-Parashont National Monument, should be a good long distance.

- There is one variance area parcel south and very near to the Grand Canyon – this should be removed. It is just outside the south parcel of the uranium withdrawal, and within 10 miles of the park.

Wupatki National Monument in AZ

- There are variance land designations on BLM land adjacent to the east boundary of the monument, some south, and one north. Industrial development within the beautiful long-vista views of visitors to the monument would degrade the visitor experience at this monument.

Fort Bowie National Historic Site in AZ

- There are small parcels of variance lands immediately north of Ft. Bowie National Historic Site that could cause problems if solar plants were developed there. They are also pretty close to a BLM designated wilderness and are part of an important wildlife corridor between the Chiricahua and Dos Cabezas Mountains. Especially because of this wildlife corridor, we ask that all variance lands south of the Dos Cabezas Mountains Wilderness Area near the border of the Coronado National Forest be removed.

Saguaro National Park in AZ

- Variance lands adjacent to the northwest corner of the park's Rincon unit are in a horse-property residential area – a solar plant situated between a high-price neighborhood and a part of the park popular with horse riders and hikers would face insurmountable opposition. Between this park unit south to the BLM's Las Cienegas National Conservation Area is an important wildlife corridor that has been the focus of a multi-agency and private partner effort to protect; likewise an inappropriate place for variance lands.
- Southwest of the Tucson Mountain unit of the park are variance lands where solar plants would be clearly visible from both the park and from the Arizona-Sonoran Desert Museum – transmission line proposals in this area have faced stiff opposition from local residents, local governments and conservationists. Nearby variance lands, just south of these, are likewise ill-suited for development as they are adjacent or close to Tucson Mountain Park, a county-owned natural resource park.

Glen Canyon National Recreation Area in AZ and NV

- There are many variance lands around this vast recreation area – they should be removed, at least using a 15-mile from the border rule, and more properly farther than that because of the remote and beautiful landscape.

Lake Mead National Recreation Area in NV and AZ

- Likewise, there are way too many variance lands around this large recreation area, and because of its proximity to Las Vegas they will lure speculators into thinking they are appropriate for development. Most are not, and will be controversial, so it is best that they are eliminated from solar development consideration upfront and as a part of this process.

Great Basin National Park in NV

- The scattered variance parcels around the park, with a large amount near the town of Baker, are inappropriate for solar development. The ecologically important and scenic Spring

Valley, which is viewable just west of the 13,063-foot Wheeler Peak within the park, should be made off-limits to new solar.

Carlsbad Caverns National Park in NM

- The many scattered variance lands to the north of the park, at least to Highway 408 and perhaps father, should be removed.

White Sands National Monument in NM

- To the east of the monument, between highways 82/70 and 54, there should be no variance lands.

El Malpais National Monument in NM

- The variance lands to the monument's northwest, and immediate south, should be removed.

Chaco Canyon Culture National Historic Park in NM

- Variance lands to the park's north, and along the access road, Chaco Canyon Road (Highway 57), if developed, would seriously harm this special culturally important landscape, as well as the visitor's experience of this remote and magnificent remnant of an amazing ancient civilization.

Mesa Verde National Park in CO

- Solar development on variance lands to the north (on both sides of Highway 160) would impact everyone who visits this popular tourist attraction.

Great Sand Dunes National Park in CO

- Variance lands to the south of the park, across Highway 150, should be removed so as to avoid development that would impact the park and its visitors.

Hovenweep National Monument in CO and UT

- To the southeast and to the west, variance lands should be removed from the monument unit located in Utah.

Natural Bridges National Monument in UT

- Variance lands in all directions around this monument should be removed, especially those lands between the monument and Manti-La Sal National Forest.

Capitol Reef National Park in UT

- The many variance lands in the remote and rugged locations east of this park should not be promoted for industrial solar development and so should be removed.

National Historic Trails

- The routes of the Old Spanish National Historic Trail and the Juan Bautista de Anza National Historic Trail, both managed by programs of the National Park Service, should be protected from new solar development. Accordingly, we believe that variance lands of at least 5 miles on either side of the center line should be excluded from consideration. This is to both

protect viewsheds from the trails (and it could logically be a farther distance based on viewshed analysis) and because these trails have active constituencies that are concerned by industrial energy development along these routes.

- Other historic trails, stage roads, and stage routes, both those so designated by NPS or identified by state agencies or other competent authorities, could also cause conflict with proposed solar development. It seems prudent to remove a similar corridor protecting these trails from the variance lands. For instance, trails that have been mapped by Arizona State Parks include: El Camino del Diablo, Zuni-Hopi Trail, Mormon Honeymoon Trail, Palatkwapi Trail, Beale Wagon Road, Coronado's Route, General Crook Road, Chavez Trail, Overland Road, Hardyville Road, Ehrenberg Road, Phoenix Stage Roads, Black Canyon Stage Road, Kearny's Route, Butterfield Stage Route (which is currently under study for potential designation as a National Historic Trail), Cooke's Wagon Road (Mormon Battalion) and Santa Cruz Route.

IV. Proposed Variance Lands Put Threatened and Endangered Species and Other Sensitive Lands at Risk

Our three organizations share the concerns represented in the comment letter submitted by The Wilderness Society, NRDC, Sierra Club and other organizations that argue

> "the list of exclusion areas (Table 2.2-1) should be modified to include additional sensitive resources, especially citizen-proposed wilderness and all BLM-identified lands with wilderness characteristics, including those that the BLM is not currently managing to protect those characteristics."

We also agree with them that desert tortoise connectivity areas should be altogether excluded from variance. Additionally, we support their comments regarding permanent protections for non-development lands in Riverside East SEZ and the exclusion of variance lands in the former Pisgah Zone, on Catellus lands donated to BLM for conservation unless granted permission from The Wildlands Conservancy, and in areas identified as "Ecologically Core" by The Nature Conservancy.

We support and urge the further removal of roadless areas, areas without existing transmission, and those demonstrating wilderness characteristics in and outside of zones. Finally, our groups support BLM's no development areas within Riverside East and Amargosa Valley SEZ. These areas represent unique assemblages of desert forest known as microphyll woodlands, important desert tortoise populations and migration corridors, and regionally important water resources; consequently they each present high conflict for development.

V. More Effort Should Be Made to Engage Affected NPS Gateway Communities

National Parks are crucial economic drivers in rural gateway communities and present widely supported and well-branded locations to enact the Administration objectives such as America's Great Outdoors, Landscape Connectivity and Let's Move. Throughout the Southwest, small communities partner with and benefit from their association with National Parks. Parks bring tourists to these communities, creating job opportunities associated with serving visitors and with

supporting park operations. National Park employees live and reinvest in these communities, creating a positive economic and social feedback loop.

Our three groups have worked closely with many rural gateway communities, and many residents have publicly commented that projects proposed on these lands will create conflicts for water resources, diminish their quality of life, and impair scenic vistas that encourage destination tourism. Small communities throughout the Southwest have been beset with applications for renewable energy projects. While some may be supportive, relatively few applications for wind and solar occur in close proximity to larger desert communities. This places disproportionate responsibility and burden for small communities to shoulder the impacts of these projects. Examples of small communities surrounded by variance include Baker, Shoshone, Tecopa, Amargosa Valley, Wonder Valley, Landers and Twenty-nine Palms. We recommend that BLM exclude variance lands surrounding communities that consider variance to be economically harmful or in conflict with their vision for community well-being.

Shoshone and Tecopa have become the Southern Gateway to Death Valley and are supported by tourism to Death Valley National Park, the Amargosa River and Canyon and several adjacent wilderness areas. The Wild and Scenic Amargosa River flows through these communities and provides water for homes, recreation, and creates a riparian corridor home to resident and migrant bird species, rare, endangered, and endemic fish, frogs and mammals.

The Morongo Basin (Morongo Basin, Yucca Valley, Joshua Tree and Twenty-nine Palms) has a regional planning process called the Morongo Basin Open Spaces Group. This group has identified key wildlife connectivity corridors on proposed variance lands east of Twenty-nine Palms between Joshua Tree National Park and the Sheephole Wilderness Area (attached is the map). The Morongo Basin and the surrounding regional economy benefit greatly from the 1.4 million annual visits to Joshua Tree National Park. Recent data suggests that the park annually contributes 58.8 million dollars to the regional economy and creates 800 jobs.

Desert Center is surrounded by the Riverside East SEZ, and is home to residents who have consistently opposed industrial development in their backyards. Multiple projects have been approved in this area and other projects, including the country's largest landfill and a groundwater pump storage project, are pending.

In sum, we believe that the BLM should consider the impact that proposed projects will have on human and natural communities within an affected radius. Similarly, they should consider the cumulative impact multiple foreseeable projects in an identified area and time horizon have on resources and adjacent communities.

VI. Scientific Uncertainty Supports Need for Strong Mitigation and a Cautious Approach

To protect the long-term ecological integrity of national park units, DOI and DOE should closely consider both direct and cumulative impacts from potential new solar infrastructure. This is especially important due to the lack of information relating to desert species, vegetation, the cycling of nutrients and water and other areas of biological science where great uncertainty

exists. As such, we strongly urge the DOI and DOE to embrace the precautionary principle for those sensitive lands surrounding park units and potentially used as habitat by the Desert Tortoise, Amargosa Vole, Amargosa Toad, Mojave Ground Squirrel and other state and federally listed endangered species. We believe any mitigation plan included with the proposed construction of a solar project should address the full range of potential impacts, including light pollution and other impacts that could degrade the experience of park visitors, on desert resources and be made available for review and public comment early in the review process.

VII. Conclusion

We believe that the DOI and DOE should give further consideration to the Modified Solar Energy Zone (SEZ) Alternative that would focus development within discrete low-conflict lands. We believe that it best balances the need to make lands available for new solar energy infrastructure, while ensuring that national park units, other protected lands and sensitive desert landscapes are conserved. If the agencies select the Modified Preferred Alternative, we insist that public lands within 15-miles of units of the National Park System should be excluded from consideration unless the NPS determines they are appropriate for consideration under the proposed variance process. As we've already stated, this policy would help deter controversial projects in the future, so that mistakes made in the past relating to the permitting of poorly sited solar facilities near parks, do not occur again.

The Solar Energy Development PEIS will set the stage for guiding where new solar development takes place on public lands for decades to come. A thoughtful and long-term planning approach is essential to avoid needless conflict and harm to our priceless national park treasures. While some progress has been made, we continue to have serious concerns. It is essential that DOI and DOE not lose focus on being "smart from the start" as this process moves closer towards a ROD.

Units of America's National Park System were set aside for preservation so that future generations can enjoy what park visitors do today. Historian Wallace Stegner wrote that America's "National parks are the best idea we ever had. Absolutely American, absolutely democratic, they reflect us at our best rather than our worst." It is both DOI's and DOE's duty to ensure that America's greatest idea is not needlessly harmed by an important energy resource our nation desperately needs and that we so strongly support. It is not an either/or dilemma, and we remain committed to working with you to make this effort successful.

Thank you for considering our comments.

Respectfully,

David Lamfrom
California Desert Senior Program Manager

Kevin Dahl
Program Manager, Arizona Field Representative

Seth Shteir
California Desert Field Representative

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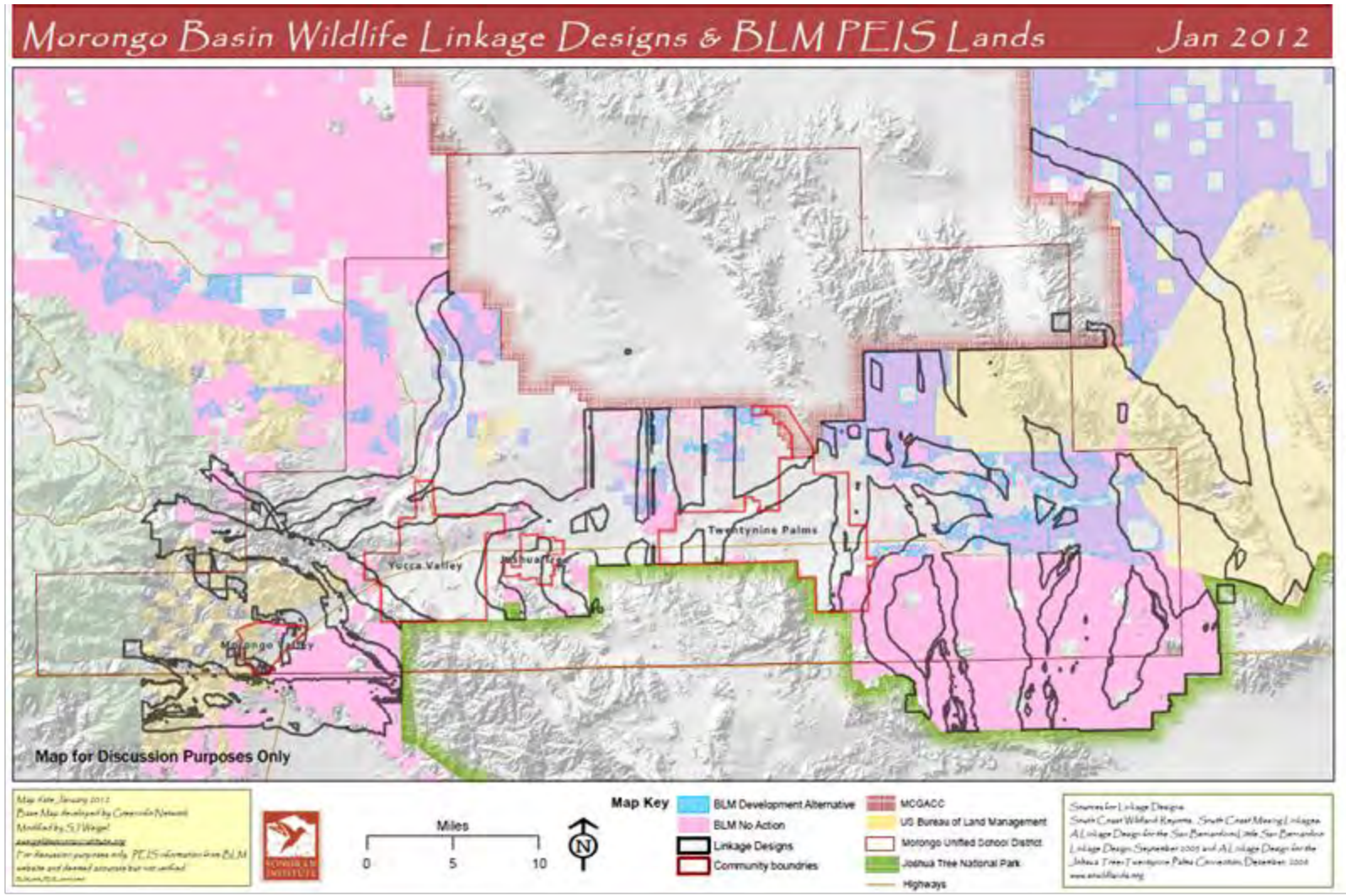
Morongo Basin Wildlife Linkage Designs & BLM PEIS Lands
Jan 2012
Yucca Valley
Twentynine Palms
Map for Discussion Purposes Only
Miles
0
5
10
Map Key
BLM Development Alternative
BLM No Action
Linkage Designs
Community boundries
MCGACC
US Bureau of Land Management
Morongo Unified School District
Joshua Tree National Park
Highways

Thank you for your comment, Erin Lieberman.

The comment tracking number that has been assigned to your comment is SEDDsupp20157.

Comment Date: January 27, 2012 18:40:46PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20157

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Attachment: Supplement to the Draft Programmatic Environmental Impact Statement for Solar Energy Development in Six Western States DoW Comment Letter 1 27 12 FINAL.pdf

Comment Submitted:

January 27, 2012

The Honorable Ken Salazar
Secretary of the Interior
U.S. Department of the Interior
1849 C Street, S.W.
Washington, D.C. 20240

RE: Comments on the Notice of Availability of the Supplement to the Draft Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States. 76 Fed. Reg. 66958 (Oct. 28, 2011)

Dear Secretary Salazar:

Thank you for the opportunity to comment on the Supplement to the Draft Programmatic Environmental Impact Statement for Solar Energy Development in Six Western States ("PEIS"). These comments supplement and amplify issues raised in a separate comment letter that Defenders of Wildlife ("Defenders") and the Sierra Club jointly submitted with NRDC, The Wilderness Society, and a number of other conservation organizations.

As we transition toward a clean energy future, it is imperative for our future and the future of our wild places and wildlife that we strike the proper balance between addressing the near-term impact of large scale solar development with the long-term impacts of climate change on our biological diversity, fish and wildlife habitat, and natural landscapes. To ensure that the correct balance is achieved, we need smart planning for renewable power that avoids and minimizes adverse impacts on wildlife and wild lands and effectively compensates for remaining, unavoidable impacts. We believe the Bureau of Land Management ("BLM") has taken an important, and impressive, step toward developing a framework for solar development on public lands that provides certainty for developers and necessary assurances for the conservation community. We are particularly pleased to see BLM's commitment to the concept of Solar Energy Zones; avoidance of high conflict areas; and incorporation of ongoing planning processes including the Desert Renewable Energy Conservation Plan and Restoration Design Energy Project.

Defenders and the Sierra Club highlighted our concerns on the Draft PEIS in comments submitted, along with 23 other conservation organizations, on May 2, 2011. In particular, we focused on the insufficient analysis of impacts on wildlife and made recommendations for improving upon that analysis and developing a comprehensive mitigation framework. Consistent with our recommendations, we are pleased to see BLM is addressing zone specific resource impacts and conducting additional analysis, including development of zone specific action plans for each of the zones that BLM carried forward. Given the scale and scope of development being contemplated under a solar program and the significant risk posed to wildlife, habitat and ecosystems by that development, however, BLM must incorporate

additional analysis and develop a successful mitigation structure and adaptive management framework to ensure the continued viability of wildlife on BLM lands.

Critical to the success of the Solar Energy Program is the need to gather data and conduct rigorous environmental reviews of wildlife impacts at the appropriate spatial and biological scales. Therefore, these comments focus on BLM's authority to manage public lands under the Solar Energy Program consistent with existing BLM wildlife policy. Baseline ecological information should be analyzed and landscape-level (e.g., ecoregional or watershed level) solar energy development and conservation strategies should be developed and integrated to achieve specific wildlife management objectives consistent with BLM policy. These objectives can be accomplished through proper siting of projects to avoid and minimize project impacts and through the development and implementation of effective compensatory mitigation plans for unavoidable impacts to species, their habitats, and important natural resources within that landscape. BLM must also adopt a robust and science based adaptive management and monitoring plan to ensure that implemented mitigation measures are effective.

Consistent with sound decision making is timely consultation with the U.S. Fish and Wildlife Service ("FWS") under Section 7 of the Endangered Species Act ("ESA"). Unfortunately, the Supplement provides limited information on the timing or mechanics of project-level Section 7(a)(2) consultations. We offer our comments and recommendations for how BLM should address this issue below.

Lastly, BLM must pay particular attention to the cumulative impacts solar development across 20 million acres will have on Desert Tortoise, a federally listed threatened species. We offer comments specifically tailored to the proposed Desert Tortoise Variance Requirements Option 1 and Option 2, and the proposed Desert tortoise connectivity habitats as shown on Figure 2.2-2. Following the comment period, Defenders intends to work with BLM and FWS on developing adequate protection requirements for projects developed outside of solar energy zones.

I. BLM Should Manage Special Status Species Consistent with Existing BLM Wildlife Policy

As noted in our comments on the Draft PEIS, the Solar Energy Program should be consistent with BLM wildlife policy, the purpose of which is to provide guidance to the agency in the conservation of the species, habitat and ecosystems found on BLM lands. In order to be consistent with agency policy, the Solar Energy Program should conserve habitat and wildlife and result in net conservation benefits to BLM Special Status Species.[1] Establishing measurable wildlife and habitat standards will increase public support for the program and enable the agency to evaluate the effectiveness of conservation and mitigation measures. BLM wildlife policies should be applied to this PEIS and the program it ultimately implements, which the agency has acknowledged is a land use planning process.

[1] These are species which are proposed for listing, officially listed as threatened or endangered, or are candidates for listing as threatened or endangered under the provisions of the Endangered Species Act (ESA); those listed by a State in a category such as threatened or endangered implying potential endangerment or extinction; and those designated by each State Director as sensitive. BLM Manual 6840.01

BLM Special Status Species policy, found in Manual 6480, has two broad objectives: to conserve and recover ESA-listed species and their ecosystems; and to proactively reduce or eliminate threats to Bureau sensitive species in order to minimize the likelihood and need of listing these species under the ESA. To achieve net benefits for Special Status Species, the agency should be able to demonstrate, through programmatic, zone and project analysis and monitoring, that the Solar Energy Program contributes to the recovery of listed species and improves the conservation status of Bureau sensitive species. Risks to Special Status Species must be evaluated and quantified at appropriate spatial, biological, and temporal scales.[2]

Manual 6500 establishes BLM wildlife policy "to manage habitat with emphasis on ecosystems to ensure self-sustaining populations and a natural abundance and diversity of wildlife, fish and plant resources on the public lands." Policy objectives call for the agency to "restore, maintain, and *improve* wildlife habitat conditions" on BLM lands, and to "*increase the amount and quality of habitat available.*" (emphasis added). Wildlife policy is also found within the BLM's Rangeland Health Standards. Agency regulations at 43 CFR, Subpart 4180 state that "[h]abitats are, or are making significant progress towards being, restored or maintained for Federal threatened and endangered species, Federal Proposed, Category 1 and 2 Federal candidate and other special status species."

In addition to BLM policy, under section 7(a)(1) of the ESA, BLM is explicitly obligated to utilize its existing authorities to affirmatively conserve ESA listed species. Section 7(a)(1) is designed to ensure that federal agencies "conserve" listed species, which means to improve the status of a species to the point where it no longer requires the ESA's protection. BLM policy requires developers to implement mitigation measures for impacted species.

We believe the aforementioned BLM wildlife policy and ESA obligations provide clear guidance for the BLM's solar program conservation objectives. Agency wildlife policy should be used to analyze and develop a solar program which will:

- Conserve and help recover ESA-proposed and listed species as well as candidate and other Special Status Species;
- Reduce or eliminate threats to BLM sensitive species and minimize the likelihood of listing these species under the ESA; and
- Ensure viable (i.e., self-sustaining) populations and a natural abundance and diversity of wildlife, fish, and plant resources on the public lands

These goals are achievable through smart planning and design without slowing the development of a growing solar industry or other energy development on BLM lands. In fact, careful planning that directs development away from the most important and sensitive places for wildlife and clarifies mitigation

[2] Analysis at the population level is consistent with BLM policy. For example, the 6840 manual calls for determining the "population condition" of sensitive species, and monitoring "populations and habitats" to determine whether conservation objectives are being met.

objectives will create greater certainty for developers and conservationists by providing clarity with regard to what wildlife management standards must be met and what mitigation measures must be implemented to achieve these outcomes. We believe that BLM should apply this standard to zone and project specific decision making. For example, where sensitive, threatened, and endangered species are present, BLM should demonstrate that development in zones, coupled with necessary mitigation measures, achieve a net conservation benefit.

With these specific goals in place for BLM Special Status Species, remaining impacts on individual species should be minimized and then offset through compensatory mitigation that creates benefits for wildlife in other appropriate locations.

II. BLM Must First Establish Clear and Consistent Conservation Goals for Landscapes Affected by Development or Proposed for New Solar Project Development

BLM and other federal and state agencies and non-profit organizations have conducted regional ecosystem and resource assessments that provide the foundation for evaluating resource conditions and establishing conservation strategies for protecting and restoring wildlife, habitat, and important natural resources. Using this baseline ecological information, landscape-level (e.g., ecoregional or watershed level) conservation strategies should be developed to achieve specific wildlife management objectives consistent with the standards described above – i.e., conservation of sensitive species and net conservation benefits for threatened, endangered, and Special Status Species through proper siting of projects to avoid and minimize project impacts and through the development and implementation of effective compensatory mitigation plans for unavoidable impacts to species, their habitats, and important natural resources within that landscape. It is important that BLM recognize that impacts on wildlife are not uniform. For some localized species, regional management is appropriate. For other wide-ranging species regional mitigation may not be appropriate. We expect BLM to address differing needs in the final EIS. We also ask that BLM provide greater detail on how ongoing conservation planning priorities and Recovery Plans will be incorporated. BLM has not made clear if, and how, design features and mitigation requirements under the Solar Energy Program will be consistent for species covered under those plans. Lastly, BLM should also clarify how the Solar PEIS interfaces with county-level zoning and open space policies.

While BLM is right to support large-scale conservation priorities through Regional Mitigation Plans, all Plans should be directly related to broader regional conservation plans. To achieve this over the long term, BLM should first consider existing State Wildlife Action Plans (SWAPS), current BLM wildlife management requirements and policies (discussed above), existing RMPs, and other relevant regional or local conservation plans. In addition, the BLM should work collaboratively with appropriate Landscape Conservation Cooperatives to obtain the benefit of local and regional knowledge regarding resource conditions and current wildlife management goals and strategies, as well as incorporating strategies for climate adaptation into specific regional mitigation plans. BLM and the FWS should work collaboratively to define a clear set of shared conservation priorities that guide decisions about where to develop and where to invest in conservation and/or restoration in the context of existing wildlife management strategies.

Ideally, the final PEIS would include maps associated with each SEZ that identify potential priority areas for habitat protection and restoration (i.e. Regional Mitigation Plans) consistent with established wildlife and natural resource management goals. This approach will help developers, conservationists, and state and federal wildlife agencies better understand how zone and project impacts will be mitigated and the associated costs of project development. It will also facilitate analysis of cumulative effects of solar energy development on landscapes and improve coordination among the varied interests who are affected.

The final PEIS should also identify species priorities for land and water acquisition for wildlife and plants that BLM already knows are likely to be affected by planned solar projects. Such an approach will create the certainty to allow more parties to develop mitigation options in advance before mitigation is needed. As discussed above, investments should be in priority conservation areas as determined by state wildlife action plans, regional conservation strategies, recovery plans, Nature Conservancy ecoregional assessments, or other credible analysis or plans that identify the areas of greatest ecological significance, and at a meaningful scale.

III. BLM Should Manage for Wildlife Consistent with Existing Policy Through Landscape Level Analysis that Addresses Conservation Objectives Through Proper Zone and Project Site Selection, Project Design, Effective Compensatory Mitigation, Consistent Monitoring, and Adaptive Management

A. BLM Should First Seek to Find Ways to Avoid Impacts Entirely and Minimize Additional Impacts through Project Design and Configuration

As is true with any project that could affect sensitive resources, agencies should seek first to find ways to avoid impacts entirely, minimize additional impacts through project design and configuration, and effectively mitigate those impacts that cannot be avoided. We believe that avoidance and effective mitigation can accomplish a net conservation benefit for BLM Special Status Species. It is important for BLM to acknowledge that where avoidance, minimization, and compensatory mitigation remain inadequate to achieve BLM wildlife policy objectives, development should not precede at either the project or zone level until this deficiency has been remedied.

In the draft PEIS, BLM failed to establish mitigation goals or requirements for resource impacts. Instead, the draft PEIS stated that mitigation will minimize impacts, but offered no supporting analysis. *See, e.g.*, DPEIS, p. ES-18 (Impacts to groundwater and surface water flow systems, water contamination, water quality degradation by runoff or excessive withdrawals "can be effectively mitigated"; DPEIS, pp. 5-24, 5-25, 5-26 (mitigation measures would reduce the level of impacts to soils from site characterization, construction, operations and decommissioning); DPEIS 5-41 (mitigation measures relating to site design, storm water, and avoidance of critical landscapes would reduce impacts relating to altered hydrology); DPEIS, pp. 11.1-61, 11.2-62,11.4-64 (land disturbance impacts to water resources "will be minimized"); DPEIS, Tables 5.10- 1, 5.10-2, 5.10-3, 5.10-4 (claiming an ability to mitigate impacts to ecological resources). In other cases, assertions that impacts can or will be

effectively mitigated are contradicted by statements elsewhere in the DPEIS. *See, e.g.*, DPEIS Tables 5.10-1, 5.10-2, 5.10-3, 5.10-4 (noting that overall it is relatively difficult to mitigate impacts to ecological resources).

While we understand that the specific mitigation requirements, and the actual ability to mitigate significant impacts to environmental resources, will not be known until BLM reviews specific projects, neither the draft nor the Supplement address which mitigation measures will be implemented, and if they prove to be ineffective, that other mitigation measures will be put in place. Effective mitigation should be based on landscape level analysis at a scale that is appropriate to the geographic area and resources of concern for a particular solar energy zone or project.

The final PEIS must contain analyses that estimate how or to what extent mitigation will reduce impacts – BLM must show whether and how mitigation will work, must provide a more accurate assessment of environmental effects and must temper its conclusions that impacts will be mitigated when it does not have supporting data. In addition, in describing an approach to mitigation BLM must address an adequate avoidance-minimization-mitigation hierarchy based, in part, on the risk to a species from ineffective or failed mitigation (e.g., low success with mitigating for desert tortoises). In particular, mitigation measures should be specific to the wildlife species and other resource impacts that will occur. BLM offices need a clear standard for review of mitigation projects that require a clear description and quantification of wildlife impacts and offsets.

B. BLM Must Develop Clear Guidelines and an Effective Strategy to Mitigate Those Impacts that Cannot be Avoided

Understanding that in certain circumstances impacts cannot be avoided, and that where BLM determines that unavoidable adverse impacts can be addressed through habitat restoration and/or acquisition and the project can proceed, BLM must adopt a consistent approach to compensatory mitigation.

A compensatory mitigation hierarchy should follow the approach below.

1. *Where compensatory mitigation is warranted, lands and resources should be acquired and/or restored on the same landscape and, more importantly, in the same ecosystem or watershed that will be impacted by the project or development.* The purpose of mitigation is to avoid, minimize, and compensate for project impacts on wildlife, wild lands, and important natural resources. To ensure the continued viability of affected species and/or provide a net conservation benefit toward achieving recovery of candidate, threatened, and endangered species, compensatory mitigation should be targeted toward actions that will improve habitat and/or resources, preserve connectivity, and produce other benefits for wildlife populations in the affected area. For most projects, this is likely to be in the same watershed or landscape as the project to be mitigated. For wide-ranging species, this may not necessarily be the case. However, all compensatory mitigation should be designed and developed consistent with existing wildlife management plans (e.g., SWAPs) and the wildlife management policies and objectives for BLM stipulated above.

2. *Where non-federal lands in private ownership are available, the loss of federal lands and resources that provide habitat for threatened and endangered species and sensitive species should be successfully mitigated by the acquisition and permanent protection of currently non-federal lands and resources that provide better than equivalent benefits to wildlife.* BLM should place the highest priority on acquisition, restoration, and long-term management of private lands to mitigate remaining wildlife impacts that cannot be minimized. If newly protected lands are to be held in non-federal ownership, conservation values must be given similar permanent protection through deed restrictions and easements, and funding must be secured for long-term management of these lands. We believe the final PEIS should establish *a preference* for acquisition, restoration and management of private lands versus allocation of mitigation dollars to federal lands, while recognizing that in many cases it will be necessary to pursue mitigation measures on federal lands as well. In some locations such as Nevada, there is inadequate private land available for acquisition so the only possible mitigation is restoration, enhancement and permanent protective management of public lands.

3. *On federal mitigation lands, permanently protect conservation values.* If lands acquired for mitigation purposes are to be transferred to federal ownership, they must be protected from future development. The Supplement states: "To the extent that public lands are used to mitigate for the impacts of solar development whether in or out of the SEZs, the BLM will develop strategies to ensure that any mitigation lands are protected to provide enduring conservation benefits." Supplement, Solar PEIS 2-24, 25. We strongly agree and recognize that certain mitigation options provide these protections. One option by which to do so is to withdraw these lands from use under federal mining and other land use laws and cover them by a plan amendment that ensures long-term protection of their conservation values. This option, however, cannot guarantee protection in perpetuity, upon which the mitigation is based, since new plan amendments can alter the land management. Our preferred option is to require that third parties secure easements or enforcement rights through deed restrictions before property is transferred to federal ownership.

   In either case, this additional protection is necessary because federal lands face extraordinary energy development and other pressures, and mitigation efforts will fail if an acre protected today, in compensation for a loss elsewhere, is developed and made unsuitable to wildlife through some future project or administratively authorized activity. Future mining, energy development, grazing and other non-compatible uses need to be prohibited using legally effective means (e.g. deed restrictions with enforcement rights held by third parties).

   To the extent that mitigation occurs on public lands, BLM must take measures to ensure it is not offering mitigation at below-market costs compared to mitigation options on private lands and that it is not simply using private funding to pay for activities which it (or other agencies) already has an obligation and duty to carry out.

   In particular for endangered species, federal agencies have special duties under the Endangered Species Act to affirmatively use their authorities to promote endangered species conservation. To

prevent the public from essentially subsidizing the costs of mitigation, BLM needs to ensure that private funding does not simply substitute for public funding for land management activities on a parcel now being used to mitigate solar impacts.

4. *On federal and non-federal mitigation lands, require endowments to ensure the perpetual management of mitigation lands.* The protection of land hosting affected wildlife populations or the restoration of such lands to better support wildlife will mitigate impacts only for as long as the wildlife populations endure. The final PEIS should be used to establish guidance on the establishment and transparent operation of regional or other large-scale endowments to maintain mitigation values over time. An established mitigation lands endowment program between the California Department of Fish and Game and the National Fish and Wildlife Foundation is a good model for what is needed under this PEIS. These funds should be set up to serve one or multiple solar development zones. This premise of establishing a perpetual management endowment is well established in federal conservation banking policy and in some state law and policies. It would be inappropriate for BLM to hold private land projects needing Section 10 incidental take permits under the ESA to a higher mitigation standard than for those projects occurring on public lands. We do not believe that such mitigation funds, whether maintained for the management of public or non-public lands, should be held by a federal entity.

5. *Land acquisition is inadequate to meet a net conservation goal and must be supplemented with species restoration and management activities and funding.* Land acquisition by itself may not satisfy a net conservation benefit standard for particular species because it may simply result in the protection of a wildlife resource that is already present or may fail to address current critical stressors affecting the wildlife resource. We believe most mitigation projects should include a significant commitment to restoration and long-term management, allocating mitigation dollars to actions that significantly enhance sensitive, threatened and endangered wildlife and plant populations. Such projects create a positive change in populations that can help offset direct and incidental losses of individuals and local populations on solar development sites. Establishing a priority on management and restoration through this PEIS also creates a clear signal which would incentivize the creation of private mitigation banks to secure and begin implementing such restoration in advance of actual mitigation plans being established for future projects. Permanent retirement of grazing permits should be included among activities that could result in restoration of habitat for affected wildlife.

6. *Improve certainty for developers and improve wildlife benefits by creating expansive service areas for mitigation, pooling mitigation funds and using a transparent and competitive process to allocate resources to affected species conservation efforts*

   Project-by-project development of mitigation formulas and identification of mitigation projects is a wasteful system whose flaws have already been documented in case studies of wetland mitigation and endangered species banking. This process also creates higher costs and lower certainty for companies. In our comments on the Draft, we recommended the final PEIS include explicit direction to ensure that mitigation efforts will be coordinated within a large “mitigation

service areas" (MSAs) – designed to be consistent with the ecological areas, watersheds, or species habitat needs for the wildlife, habitats, and natural resources to be protected or restored to compensate for project impacts.

We are encouraged to see BLM move forward with proposed Regional Mitigation Plans, a concept similar to the recommended MSAs. We believe these Plans will provide greater incentives for development in proposed and future zones. Consistent with our recommendation, BLM noted that these Plans can be used to "enhance the ability of state and federal agencies to invest in larger-scale conservation efforts that benefit sensitive species…[for] better long-term protection." Supplement Draft EIS, 2-24. To adequately develop effective mitigation plans, BLM will need to conduct landscape level analysis at a scale that is appropriate to the geographic area and resources of concern for a particular solar energy zone or project. Effective off-site mitigation would require sufficient analysis to ensure that proposed off-site mitigation is commensurate with the loss of habitat and ecosystem function in areas proposed for development.

C. Proper Management and Mitigation Require Robust Monitoring and Effective Adaptive Management

A recently published review paper by the United States Geological Survey (Lovich and Ennen 2011) reveals a concerning dearth of information in the body of scientific literature quantifying impacts of large scale solar energy development on wildlife populations. Its findings underscore the need for scientifically sound monitoring and research to be conducted in order to gain a reliable understanding of these impacts. Lovich and Ennen (2011) conclude:

> On the basis of our review of the existing peer-reviewed scientific literature, it appears that insufficient evidence is available to determine whether solar energy development, as it is envisioned for the desert Southwest, is compatible with wildlife conservation…The issue of wildlife impacts is much more complex than is widely appreciated, especially when the various scales of impact (e.g., local, regional, global) are considered. Our analysis shows that, on a local scale, so little is known about the effects USSEDO on wildlife that extrapolation to larger scales with any degree of confidence is currently limited by an inadequate amount of scientific data. Therefore, without additional research to fill the significant information void, accurate assessment of the potential impacts of solar energy development on wildlife is largely theoretical but needs to be empirical and well-founded on supporting science.

In order for management decisions to be adequately informed moving forward, it is crucial that the BLM's nascent Solar Energy Program implement well designed empirical studies that will quantify the impacts of solar development on wildlife populations and their habitats, as well as adequately assess the effectiveness of mitigation measures and strategies that are implemented in an effort to compensate for these impacts.

Effective monitoring, mitigation, and adaptive management are foundational to a successful BLM solar development program; without them, development will be needlessly inefficient, contentious, and

disruptive. Although the Special Status Species analysis performed for SEZs in the Draft PEIS and expanded to cover all alternatives in the Supplement provides a useful screen to highlight conflict areas and make ballpark comparisons of the various alternatives, the detail needed to evaluate the monitoring and adaptive management framework has been deferred until the final PEIS. Our detailed recommendations with respect to Monitoring and Adaptive Management of the Solar Energy Program can be found in Appendix 1.

Data to determine the current condition (i.e., ecological baseline) of wildlife, lands, and resources where solar project development and SEZs are proposed is essential to ensuring that wildlife management goals can be achieved. So, too, is the ability to monitor the effectiveness of mitigation measures in relation to wildlife and resource management goals, and to determine if past investments in mitigation have been effective, adequate, or if mitigation strategies need to change due to past failures or changing resource conditions (e.g., climate change). DOI agencies have too often failed to establish clear and measurable biological objectives in their own work and in requirements of third parties seeking agency approval. The absence of objectives feeds into problems with inadequate monitoring. The result is that too many projects fail to adequately compensate for impacts, and DOI agencies have a poor record of being able to track such performance. While the Draft PEIS lacked assurances that implementation and effectiveness of mitigation measures will be monitored, the BLM did provide additional detail in the Supplement. Monitoring resource conditions and the effectiveness of mitigation efforts is also an essential element in setting mitigation priorities, particularly if mitigation options are viewed across a large Regional Mitigation Plan.

Additionally, to evaluate the cumulative impacts on species and other resources, and to compare impacts of different solar projects, locations and technologies, monitoring protocols should be standardized within the appropriate biological scale for all projects, including transmission and related substations. Some protocols may need to be tailored (and thus different) for different ecosystems, watersheds or species. All monitoring data should be made publicly available in data sets with a common format (recommended by leading scientists who want to conduct studies) that may be easily downloaded and utilized by researchers and the public at large. This transparency will enable timely and robust evaluation of program impacts, efficacy of mitigation measures, and full engagement of the scientific community.

The BLM must use the final PEIS to define the types of outcomes (population size, viability, reproductive performance, age class distribution, etc.) that it will require from mitigation. Additional final PEIS analysis should describe the expected results of mitigation and how it will serve to guide any monitoring program that BLM and applicants implement. “Monitoring is fundamental for ensuring the implementation and effectiveness of mitigation commitments, meeting legal and permitting requirements, and identifying trends and possible means for improvement.” 76 Fed. Reg. at 3849. BLM must establish clear requirements for monitoring and reporting – to the public and the agency – on the success in achieving those goals. The monitoring program should also provide for public involvement. 76 Fed. Reg. at 3851.

It is critical that BLM consider the best available science, previous agency efforts, and a full range of public comments to devise the best system for integrating monitoring, adaptive management, and

mitigation. The recommendations included in Appendix 1 below build off of information and references provided on pages 2-13 and 2-14 of the Supplement, and are intended to flesh out the general elements and structure that would be needed for a scientifically rigorous and defensible strategy.

The Record of Decision for the Jack Morrow Hills Coordinated Activity Plan, prepared by the The Rock Springs WY BLM Field Office, contains an adaptive management approach we believe BLM should incorporate into any adaptive management plan for the Solar Energy Program. Appendix 2 (Implementation, Monitoring, and Evaluation Process) provides the specificity needed to evaluate the planned adaptive management program (and is available on line at http://www.blm.gov/style/medialib/blm/wy/jmhcap/rod.Par.37876.File.dat/02appendices.pdf).

We particularly note the following, as examples of the sort of detail that should be contained in any and all adaptive management plans created pursuant to the Solar PEIS:

- Table A2-1 Resource Management Indicators - p. A2-7 – contains a broad set of indicators
- Table A2-2 Indicator Detail - pp. A2-8 – A2-10 – contains multiple sources for data
- Table A2-3 Measurement Detail - pp. A2-11 – A2-13 – contains measures of change and triggers for management actions
- Figure A2-2 CAP Management Process - p. A2-15 – provides a useful illustration of the adaptive management process

In addition to setting out a comprehensive set of measurements, triggers for action, and a range of actions that will be taken to meet the standards set out below, a defensible monitoring and adaptive management program must be based on a thorough understanding of ecosystem processes based on detailed conceptual models, pilot studies to define sampling intensity and study design, an optimal set of indicators based on a set of accepted criteria, full involvement of a wide range of experts and stakeholders, and a defined framework to correct monitoring and adaptive management as needed. These issues are discussed further in Appendix 1.

Further, BLM must commit to monitoring and adaptive management and criteria for key resources, such as BLM Special Status Species, lands with wilderness characteristics, wild and scenic river segments and ACECs. Indicators can include the status of wilderness characteristics, outstanding river values, and the relevant and important values for which ACECs have been designated in the Final EIS.

D. BLM Must Consider the Impacts of Climate Change in Assessing Impacts from the Solar Energy Program on Wildlife

The warming of the climate due to greenhouse gas emissions underscores the need to rapidly advance deployment of renewable energy sources that do not emit carbon dioxide. At the same time, climate change poses such a threat to species and ecosystems that steps must be taken to ensure that development, even solar energy development, does not further threaten sensitive natural resources or hinder their ability to adapt to a changing climate.

Executive Order 13514 of October 5, 2009, directs all federal agencies to participate in the development of a national adaptation strategy in response to the impacts of climate change. Further, Department of the Interior Secretarial Order No. 3289, as amended, directs the Department to "tak[e] the lead in protecting our country's water, land, fish and wildlife, and cultural heritage and tribal lands and resources from the dramatic effects of climate change that are already occurring…." It further states that the Department "***must*** [emphasis added] … conserve and manage fish and wildlife resources, including over 800 native migratory bird species and nearly 2,000 federally listed threatened and endangered species…." A June 3, 2011 memorandum from the Deputy Secretary of the Interior to Assistant Secretaries and Heads of Bureaus and Offices further directs the completion of a Department-wide climate change adaptation plan by June 4, 2012, consistent with CEQ guidelines and states that:

> Climate change adaptation planning is needed to address the effects of climate change that Impact the Department's mission, programs, operations and assets, including our infrastructure and the land and water resources under our responsibility. Climate change adaptation is a critical complement to climate change mitigation. Climate change mitigation is an important undertaking that the Department is addressing in a number of ways including, in particular, through our support of renewable energy development on public lands.

In 2009, Congress called upon federal, state and tribal agencies to collaborate to develop a national strategy to safeguard fish, wildlife, plants, and their habitats in the face of a changing climate. BLM is a steering committee member on the National Strategy team, along with all the other major federal land, water, and wildlife agencies, and state and tribal natural resource managers. The Strategy, released in draft form on January 20th, provides a framework "to enable natural resource professionals and other decision makers to take action to conserve fish, wildlife, plants and ecosystem functions, as well as the human uses, values and benefits these natural systems provide, in a changing climate."

The Strategy outlines seven key Goals, three of which are relevant to BLM in the siting, development, and mitigation of solar energy generation facilities:

Goal 1: Conserve habitat to support healthy fish, wildlife and plant populations and ecosystem functions in a changing climate. Keys to this strategy include identifying and protecting an ecologically-connected network of lands and waters that will support a diverse array of habitats and wildlife, and allow species maximum opportunity to shift naturally with climatic changes. The Strategy also calls for restoring habitat and establishing new ecological connections where needed.

Goal 2: Manage species and habitats to protect ecosystem functions and provide sustainable cultural, subsistence, recreational, and commercial use in a changing climate. Climate considerations should be incorporated into land management plans at multiple scales, from the local to landscape and state level. Species and habitats vulnerable to climate change should be identified and managed accordingly.

Goal 7: Reduce non-climate stressors to help fish, wildlife, plants and ecosystems adapt to a changing climate. Existing stressors to species and habitats, including habitat loss, fragmentation and degradation, overuse, pollution, invasive species, pests and diseases, should be minimized to the maximum extent

possible. These stressors have been demonstrated to cause imperilment and extinction even in the absence of climate change. Even worse, many of these interact with and are worsened by warming climate conditions.

The BLM should address the issues associated with climate change and implications for water resources, wildlife and their habitats in the context of the final PEIS. Land and water management plans for solar facilities and associated infrastructure should incorporate climate change considerations. Specific adaptation strategies and management direction consistent with the national adaptation strategy and the forthcoming Department-wide climate adaptation plan should be incorporated into specific RMPs as amended by the final solar PEIS.

VI. Consultation with the U.S. Fish and Wildlife Service under Section 7 of the Endangered Species Act is a Prerequisite for Sound Decision Making

We are encouraged to see that BLM is working with the U.S. Fish and Wildlife Service and is moving forward with Section 7(a)(1) and 7(a)(2) consultation. The Supplemental PEIS, however, provides limited information on the timing or mechanics of project-level Section 7(a)(2) consultations. For example, it is unclear how guidance from these programmatic Section 7 consultations will be incorporated into project level Section 7(a)(2) consultations. It is also unclear whether, and if so, how BLM and FWS will seek to integrate programmatic and project-level consultations through tiered or appended consultations. FWS and BLM should provide stakeholders with greater clarity on how they plan to comply with section 7 requirements, so that stakeholders can better anticipate future ESA requirements and provide input as early as possible.

Because the Solar PEIS will affect many listed species, BLM should view it as an opportunity to proactively improve the agency's implementation of the ESA. For example, ESA consultations typically do not link recovery objectives for listed species to section 7(a)(2) effect determinations, conservation measures, and reasonable and prudent measures and alternatives. BLM's section 7 consultation could address this deficiency by ensuring that no solar project approved under the PEIS undermines the recovery goal of any listed species. BLM can also improve its implementation of the ESA by working with FWS to ensure that the agencies properly track the *cumulative* take of any listed species. Doing so will allow BLM to partially verify its ability to achieve a net conservation benefit standard for listed species.

VII. Recommendations for Increasing Desert Tortoise Protection Measures in the Solar PEIS

In its revised recovery plan for the Mojave population of the Desert tortoise,[3] the FWS found that the species continues to face a moderate degree of threat which has increased since it was listed in 1990 as a

[3] U.S. Fish and Wildlife Service. 2011. Revised recovery plan for the Mojave population of the desert tortoise (*Gopherus agassizii*). U.S. Fish and Wildlife Service, Pacific Southwest Region, Sacramento, California. 222 pp.

threatened species and since the first recovery plan was finalized in 1994. The FWS also found that the Desert tortoise has a low potential for recovery due to uncertainty surrounding management of threats to the species, and potential conflict with land uses and commercial development within its habitat. New and significant threats have emerged that the 2011 revised recovery plan does not address specifically. The primary of those threats is renewable energy development. Impacts of renewable energy development on Desert tortoises and their habitat could include "…habitat fragmentation, isolation of desert tortoise conservation areas, and the subsequent possibility of restricted gene flow between these areas." (Revised Recovery Plan, Preamble, p. iii). Implementation of a number of the recommended Recovery Actions, as articulated throughout the Plan, would make progress towards reducing threats associated with energy development (Revised Recovery Plan, Preamble, p. ii).

1. *Recovery Action 2.1, Conserve intact desert tortoise habitat* -Recommends that solar project facilities be sited outside Desert Wildlife Management Areas and Areas of Critical Environmental Concern, as well as the development of a cumulative impacts assessment to identify mitigation measures for this type of activity.

2. *Recovery Action 2.9, Secure lands/habitat for conservation* -Recommends conserving sensitive areas that would connect functional habitat or improve management capability of surrounding areas, such as inholdings within tortoise conservation areas that may be open to renewable energy development.

3. *Recovery Action 2.11, Connect functional habitat* - Recommends connecting blocks of desert tortoise habitat, such as tortoise conservation areas, in order to maintain gene flow between populations.

4. *Recovery Action 4.3, Track changes in the quantity and quality of desert tortoise habitat* - Recommends quantifying the loss or restoration of habitat as it relates to potential energy and other projects.

5. *Recovery Action 5.5, Determine the importance of corridors and physical barriers to desert tortoise distribution and gene flow* - This action, in part, would determine the effects of corridors and barriers like energy development, on desert tortoise movement and recovery.

However, the FWS cautions that additions to the Revised Recovery Plan will be necessary and included the following statement: "Still, the plan does not provide a single, comprehensive strategy for addressing renewable energy. To more comprehensively address this threat, the Service will soon add a renewable energy chapter to the living Plan that will act as a blueprint to allow the Service and our partners to comprehensively address renewable energy development and its relationship to desert tortoise recovery." (Revised Recovery Plan, Preamble, p. ii).

Recently a new species of Desert tortoise (*Gopherus morafkai*) has been identified[4] which reduces the distribution of the threatened *Gopherus agassizii* to about 30 percent of its former range. Because the reduction carries implications for species conservation, the authors argue that the Agassiz's desert tortoise may require a higher level of protection under the Endangered Species Act to ensure the level of management that would ensure its chances of survival and recovery.

Recommendations: Unfortunately, solar energy development authorizations and programmatic planning for future solar energy development is proceeding in the absence of a comprehensive strategy for addressing and resolving the issues associated with these activities, even in the Revised Recovery Plan. Thus, proceeding with precaution and erring on the side of conservation is prudent and essential for protection of what remains of the threatened Desert tortoise and its habitat and providing conditions under which it may eventually recover and no longer require the statutory protection afforded by the Endangered Species Act.

With the above in mind, we make the following recommendations for avoiding and minimizing impacts to the Desert tortoise and its habitat in California and adjacent portions of the Ivanpah Valley in NV:

1. Desert Tortoise Conservation Lands. We agree that in the California Desert Conservation Area, Desert Tortoise Conservation lands designated by BLM as Desert Tortoise ACECs (also known as "Desert Wildlife Management Areas" or "DWMAs") should be excluded from solar energy development. The exclusions should also include designated critical habitat and Wilderness Areas. It is equally important that all areas previously acquired by the BLM and other land managers for mitigation to offset impacts to tortoises should be excluded from consideration. Such compensation lands were acquired to offset significant impacts, some of which, like the Fort Irwin expansion, were regionally significant; to develop them now would serve to reverse their intended purposes.

Their development would necessarily require that U.S. Fish and Wildlife Service and associated federal lead agencies reconsider dozens of formal Biological Opinions, which would no longer function under integral assumptions at the time they were drafted. Catellus lands (colloquially known as "railroad lands") acquired by BLM is another category of lands that should be excluded from consideration for solar development, as they were intentionally acquired with conservation as their primary land management objective.

2. Proposed Variance Areas and Desert Tortoise Conservation. BLM seeks comments on two options for management of Variance Areas:

[4] Murphy, R.W., K.H. Berry, T. Edwards, A.E. Leviton, A. Lathrop A, and J.D. Riedle. 2011. The dazed and confused identity of Agassiz's land tortoise, *Gopherus agassizii* (Testudines, Testudinidae) with the description of a new species, and its consequences for conservation. ZooKeys 113: 39–71.

Option 1 – "No special variance application requirements for desert tortoise. The BLM will consider all variance applications within the range of desert tortoise on a case-by-case basis in coordination with the USFWS"; and

Option 2 – "For all applications in variance areas that are within the range of desert tortoise but located outside of proposed connectivity areas (see light blue areas in Figure 2.2-2), the applicant must provide documentation of the Project area has less than or equal to 5 tortoises (>160 mm Midline Carapace Length) per square mile. Based on the USFWS pre project tortoise survey, the point estimate for tortoises needing to be translocated would be less than or equal to 35 tortoises >160 mm Midline Carapace Length). The project is sited in a manner that maintains at least one 3 mile (5 km) wide, minimally disturbed connectivity corridor to ensure that the project does not isolate or fragment tortoise habitat and populations."

Comment on Option 1. This option will lead to continued loss of Desert tortoises and their habitats outside of proposed exclusion areas, described above, including landscape-level connectivity habitats that link conservation areas. Simply relying on USFWS coordination (i.e., Section 7(a)(2) consultation provisions of the ESA) will not provide adequate protection and conservation because the standard under such consultation will only be to avoid jeopardizing the continued existence of the species and avoid adverse modification or destruction of its designated critical habitat. Thus, this option will not contribute to the conservation (recovery) of the Desert tortoise.

This option is inconsistent with the Revised Recovery Plan for the Mojave Population of the Desert Tortoise, which calls for:
1) *Recovery Action 2.9, Secure lands/habitat for conservation* - conserving sensitive areas that would connect functional habitat or improve management capability of surrounding areas, such as in holdings within tortoise conservation areas that may be open to renewable energy development, and
2) *Recovery Action 2.11, Connect functional habitat* - connecting blocks of desert tortoise habitat, such as tortoise conservation areas, in order to maintain gene flow between populations.

The plight of the desert tortoise, more now than ever, requires certainty in coordinated conservation efforts. The 2011 determination that the Threatened population of the desert tortoise (*Gopherus agassizii*) now comprises a second species (*Gopherus morafkai*) suggests that protection of the Agassiz's desert tortoise, which is the species affected by the PEIS, is even more critical now than before the second species was described.

Option 1 is the same as the "No Action" alternative and should be identified as such. We do not support this option.

Comment on Option 2. This option is only partially consistent with the Revised Recovery Plan for the Mojave Population of the Desert Tortoise, which calls for:

1) *Recovery Action 2.9, Secure lands/habitat for conservation* - conserving sensitive areas that would connect functional habitat or improve management capability of surrounding areas, such as inholdings within tortoise conservation areas that may be open to renewable energy development; and
2) *Recovery Action 2.11, Connect functional habitat* - connecting blocks of desert tortoise habitat, such as tortoise conservation areas, in order to maintain gene flow between populations.

This proposed option fails to recognize that genetically important tortoises may occur in low density within otherwise high quality habitats. Desert tortoises may persist in these areas because they are uniquely (perhaps genetically) able to resist environmental factors that may have eliminated "less fit" tortoises, and they may persist because they have natural resistance to disease. To eliminate them because they occur in lower density would be a serious mistake in the context of tortoise recovery. Due to the effects of human activities on Desert tortoise populations and their habitats, and especially considering the documented dramatic decline in Desert tortoise densities throughout many areas within its range in California due to diseases, predation and other human related activities, the proposed criterion of limiting project consideration to areas containing up to five Desert tortoises per square mile may result in loss of otherwise high quality habitat and higher potential populations. Loss of these areas based on consideration of population density alone is insufficient. We do not support Option 2 as proposed, and offer a recommended Modified Option 2, below, that we believe will lead to minimizing loss and risk to Desert tortoises and less controversial outcomes.

Recommendation: Adopt a Modified Option 2.

We recommend that the USGS desert tortoise habitat suitability model and Desert tortoise density be used to provide interim criteria for areas where variance applications will be accepted but also recognize that development of a more detailed model is needed to guide conservation of the species at the appropriate scale required for solar project siting. The USGS desert tortoise habitat suitability model was intended to provide guidance for conservation planning at the range-wide scale, and represents the most comprehensive effort to define suitable habitat for the species to date. The one kilometer cell size used for this analysis and the emphasis on topographical, soil, and meteorological data as predictors make the model useful for predicting at the landscape-scale, but they do not provide the needed precision for analyses at the sub-regional scale or at the solar project sitting level.

Until additional refinement of a habitat model is completed by FWS, the following criteria should be met:

For applications in variance areas that are within the range of desert tortoise but outside of proposed connectivity areas, [as modified by our recommendations in these comments], the applicant must provide documentation of the following:

- Project area has less than or equal to 2 tortoises (>160 mm Midline Carapace Length) per square mile; and

- Where Habitat Potential Index Value is 0.7 or greater, verification that the habitat condition is "highly converted."[5] This verification should be provided through application of science-based models of land conditionor through field inspection.

Our recommended criterion of two adult Desert tortoises per square mile is based on current range-wide density estimates within recovery units that range from three to 36 per square mile.[6]

The predicted habitat suitability rating of 0.7 and above (on a scale of 0 to 1.0) is significant because 95% of the lands with a rating of greater than 0.7 in the USGS habitat suitability model also had confirmed presence of Desert tortoises based on field survey data. This habitat model, based on 10 environmental factors that included soils, vegetation, precipitation, elevation, and topography, is a sufficiently robust, science-based model, for interim land use planning and conservation planning for the Desert tortoise and its habitat, but further refinements are needed to make habitat suitability predictions more accurate and precise, both to protect important habitat as well as to ensure that areas not important for the species are not mis-identified.

Pursuing a model at finer scales would require the use of variables that directly or indirectly assess the resources used by tortoises when selecting habitat, such as presence of plants used for forage, vegetation diversity, density of annuals vs. perennials, and so on In addition, habitat connectivity analyses must be integrated with habitat suitability analyses in order to ensure that the focus is on preserving suitable and occupied habitat that is connected with other population areas as well as to ensure these connectivity areas themselves are preserved to provide meta-population persistence. The USGS desert tortoise habitat suitability model does not account for urban development, habitat destruction/fragmentation, or natural disturbances that have lowered habitat quality in recent years. Thus, we recommend using The Nature Conservancy's (TNC's) Mojave Desert Ecoregional Assessment[7] and the Conservation Biology Institute's Framework for Effective Conservation Management of the Sonoran Desert in California[8] to exclude these lands as having little or no habitat or conservation value. We recognize that it may be necessary to verify the habitat condition through field inspection and to accurately assess the adult Desert tortoise density. We also recognize that modeling of suitable Desert tortoise habitat needs to be refined through further field study and analysis, and that

[5] "Highly converted" refers to urban, suburban and agricultural lands that are heavily altered. While some can support conservation targets, their ecological context is highly compromised.

[6] U.S. Fish and Wildlife Service. 2010. DRAFT Range-wide Monitoring of the Mojave Population of the Desert Tortoise: 2010 Annual Report. Report by the Desert Tortoise Recovery Office, U.S. Fish and Wildlife Service, Reno, Nevada. 49 pp.

[7] Randall, J. M., S.S. Parker, J. Moore, B. Cohen, L. Crane, B. Christian, D. Cameron, J. MacKenzie, K. Klausmeyer and S. Morrison. 2010. Mojave Desert Ecoregional Assessment. Unpublished Report. The Nature Conservancy, San Francisco, California. 106 pages + appendices. Available at: http://conserveonline.org/workspaces/mojave/documents/mojave-desert-ecoregional-2010/@@view.html.

[8] Conservation Biology Institute. 2009. A Framework for Effective Conservation Management of the Sonoran Desert in California. Prepared for The Nature Conservancy. 78 pp. + appendices

updated models should be developed soon and applied to our recommended criteria in Variance Areas as they become available.

Successful recovery of the desert tortoise requires that existing populations and their higher rated habitats are protected from deleterious human impacts. If recovery actions are successful to the point of promoting population increases, lands included in our recommended Modified Option 2 where solar energy development would be inappropriate could be the very areas into which newly recruited tortoises would need to move in response to climate change or simply expand their population in response to successful recovery efforts.

3. Desert Tortoise Connectivity Habitats. Connectivity or linkage habitats for the Desert Tortoise are also addressed by BLM, as follows:

> For all applications in variance areas within the range of desert tortoise and within proposed connectivity areas (see red hatched areas in Figure 2.2-2), siting will be discouraged given anticipated high conflict.[9] However, if a variance application is submitted in this area, applicants will be subject to the translocation limitations and maintenance of minimally disturbed connectivity corridors as described above. In addition, applicants will work with the BLM and FWS to survey an area 3 to 4 times larger than the proposed project area in an attempt to find a suitable project location that meets all of the following criteria:
>
> - Projects will be sited in the lowest tortoise density area surveyed and will not exceed 2 tortoise per square mile.
> - Projects will be sited in locations where native vegetation communities are degraded or soils are compacted, such that habitat restoration potential is low.
> - Mitigation for projects within the tortoise connectivity areas should be prioritized to improve condition within the connectivity area and if these options do not exist, mitigation should be applied toward the nearest tortoise conservation area (e g., Desert Wildlife Management Area [DWMA] or critical habitat).

Comment on Connectivity or Linkage Habitats. The basis for BLM's proposed connectivity habitats was not provided. Thus, it is not possible at this time to provide a complete analysis of the adequacy of the impact minimization provisions. We strongly recommend that BLM's proposed connectivity habitats shown on Figure 2.2-2 be replaced with connectivity or linkage habitats recommended by the FWS in their comments on the Draft PEIS for Solar Energy Development, dated May 6, 2011, and that their recommendations be adopted in the final version of the habitat connectivity map in the Final EIS. Their recommendation is contained on Figure B-2 in the form of a map and narrative. We include it in our comments as Appendix 2. It is important to understand that their recommendations identified lands to be included in a "…minimum linkage design necessary for the conservation and recovery of the Mojave population of the desert tortoise…."

Recommendation: Exclude Desert Tortoise Connectivity Habitat from Development

We strongly recommend that solar energy development be excluded from all Desert tortoise connectivity or linkage habitats identified by the USFWS, except in limited situations where BLM and the USFWS determine that solar energy development may be acceptable on lands that have been developed or highly fragmented and have little or no conservation/recovery value for the Desert tortoise. To identify such lands, we recommend using The Nature Conservancy's Mojave Desert Ecoregional Assessment in combination with the USFWS map of recommended linkage habitats. For areas falling outside their Mojave Ecoregion and within proposed Variance Ares, we recommend that BLM undertake a similar approach in identifying disturbed and highly fragmented lands. We make this recommendation because the Desert Tortoise Habitat Model, considered by the USFWS in developing their recommendation, does not reflect habitat lost or highly degraded or fragmented due to land uses such as urban development, roads, agriculture, mining, etc. We recognize that it may be necessary to verify the habitat condition through field inspection and to accurately assess the adult Desert tortoise density.

We additionally recommend that solar energy development not be allowed in two specific and important Desert tortoise connectivity habitat regions – Pisgah Valley in California and Ivanpah Valley in both California and Nevada. Both these areas are included in the FWS's habitat connectivity or linkage habitat recommendations, and we strongly recommend the remaining habitat in these essential areas be excluded from development.

The Revised Recovery Plan includes the following statement on page 35:

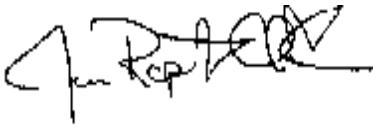
> It should also be recognized that activities occurring on lands beyond the boundaries of existing tortoise conservation areas can affect tortoise populations, important linkages between tortoise conservation areas, and the effectiveness of conservation actions occurring within the conservation area boundaries. Agencies should work within the context of their respective land use plans to determine how to effectively implement recovery actions contained within this plan.

Connecting Desert tortoise conservation areas by maintaining intact landscape-level habitat suitable for maintaining and enhancing Desert tortoise populations and promoting gene flow requires that these areas be conserved and protected. Many of these connecting habitats that link conservation areas are limited in size and functionality by habitat suitability and the effects of existing developments such as highways and canals.

We feel that the second bullet in BLM's proposal for management of connectivity habitats, which attempts to direct proposed projects to lands with degraded or disturbed habitats, has merit, provided that the criteria for what constitutes such land condition be clearly stated and accurately identified. Areas where natural vegetation cover has been significantly altered or removed and soils compacted to the degree that restoration to natural condition would be difficult, at best, should be identified so that project applicants can be directed to consider projects in these areas without compromising the conservation value of the connectivity or linkage habitats.

Thank you for your consideration of these comments. We look forward to seeing them addressed in the Final PEIS.

Sincerely Yours,



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Appendix 1: Monitoring and Adaptive Management

Key Concepts

The key concepts that would underpin such a program, outlined in BLM Technical Reference 1730-1 (Elzinga et al. 2001), are presented below in the context of the solar PEIS.

1. **Monitoring is driven by objectives** that describe the desired condition and define what is measured, how well it is measured, and how often it is measured. The purpose of adaptive management is to meet the objective, and the purpose of monitoring is to determine if the objective has been met. In this way, monitoring provides the crucial link between objectives and management.

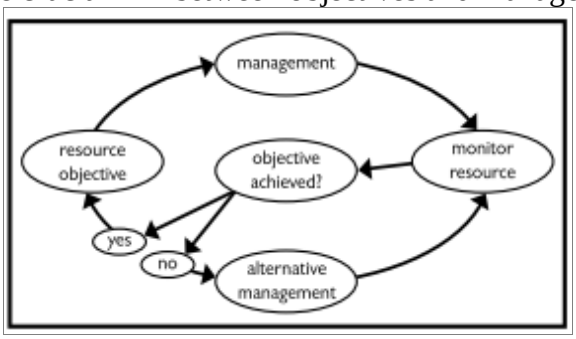

Figure 1: Effective adaptive management and monitoring are interdependent

When monitoring data are inconclusive, however, it becomes impossible to determine whether management is successful, and the adaptive management cycle breaks down.

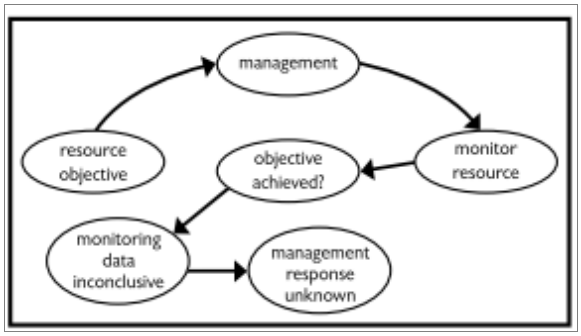

Figure 2: With inadequate monitoring, adaptive management isn't possible

As discussed by Noon (2002), monitoring programs that are intended to assess the effects of a certain type of development should perform three main functions. First, they must be able to discriminate between extrinsic and intrinsic drivers of change in order to be effective, acting as a filter to separate the effects of extrinsic change due to the development of interest from those of other human changes to the ecosystem while at the same time accounting for the three types of natural change: random variation, succession following natural disturbance events, and cyclic variation. Second, they must differentiate changes that can be accommodated from ones that degrade the ecosystem, and to determine the source of these changes. Third, they must identify the sources of negative change specific to the development of interest that cannot be incorporated within the natural dynamics of the system, exceed its resilience, and potentially drive it into a new state. These sources of negative change, or stressors (Suter 1993, Thornton et al. 1993, 1994), drive the formulation of monitoring objectives which in turn drive the selection of indicators.

One of the main goals of the BLM Solar Energy Program is to minimize the environmental, social, and economic impacts of development. Making this goal operational requires breaking it down into more specific objectives that directly relate to biological and abiotic resources. It is critical that these objectives be formulated using a process that incorporates broad scientific consensus and expert involvement from outside as well as within the agency; as noted by Nie and Schultz (2011), "built-in agency biases and political pressures influence what questions are asked in adaptive management, what controversies are avoided, and how information is collected, interpreted, and acted upon."

Villarreal et al. (2011) details the recent development of monitoring objectives for the Barry M. Goldwater Range West, an area located in southwest Arizona that is quite representative of areas that would be open to development under the BLM Solar PEIS. This monitoring plan was developed based on an evaluation of all monitoring plans in the Sonoran Desert region, and refined the monitoring objectives of these plans using a multi-agency process incorporating external stakeholder and scientific input. Comparison of a few of the initial monitoring objectives with those refined by the stakeholder group illustrates the value in developing consensus-based objectives that make management specific, targeted, tangible, and effective:

- "Manage to control invasive species" changed to "Identify (location, source and transmission), assess, eradicate, reduce, mitigate, and/or minimize problematic invasive species."
- "Minimize erosion (wind, water, and others)" changed to "Identify (natural events), avoid, and control problematic erosive and deleterious landscape impacts."
- "Rehabilitate where needed" changed to "Identify, restore and/or enhance degraded or impacted habitats."

We suggest the following **as examples** of additional objectives that relate to environmental impacts from solar development:

- Net conservation benefit or net benefit to recovery standard for all actions taken under the Solar Program that affect listed or candidate species, as measured by direct or indirect measures of population viability.
- Net conservation benefit or net benefit to recovery standard for all actions taken under the Solar Program that affect selected special status species, as measured by direct or indirect measures of population viability.
- No net loss of selected native vegetation cover types from solar projects (e.g. sagebrush, Joshua tree); vegetation loss would be offset by habitat enhancement projects for the same community in adjacent areas.
- No net soil loss or decline in PM-10 air quality standards.
- No net loss of areas that exceed some threshold of biological soil crust cover.
- No significant change in distribution or abundance of termite/harvester ant colonies.
- No significant change in the distribution or abundance of aquatic invertebrates.

2. **Monitoring is distinct from inventory or research;** it lies between the two on a continuum of study effort. The figure below details various study designs that could be associated with evaluation of a prescribed burn. In the figure a single inventory, defined as a point-in-time survey used to determine resource location or condition, is represented by one of the rectangles in the lower half of the figure. Clearly periodic inventories are the building blocks for a monitoring program, but without an overarching sampling design linked to a conceptual model of stressors and indicators, a series of inventories is just that.

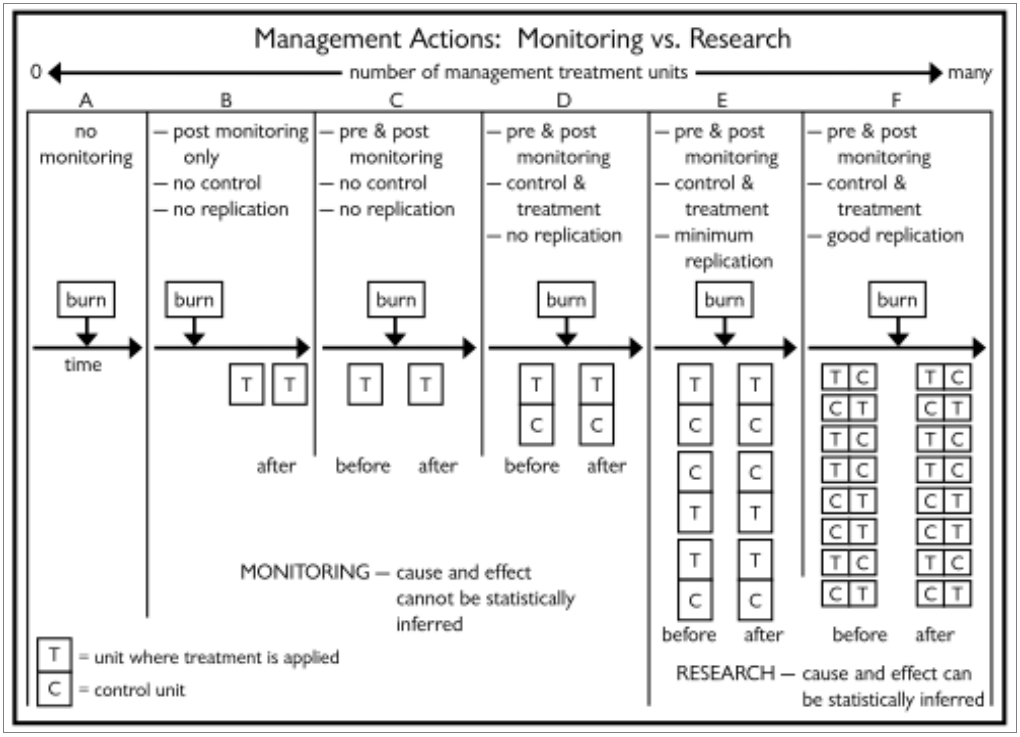

Figure 3: Monitoring is composed of inventories, with a structure informed by research

Monitoring designs are shown in columns B, C, and D of the diagram. The most rigorous is D; in this design, there are inventories before and after management, and these are performed in a treatment area where management occurs as well as in control/reference areas where management and disturbance does not occur. This design, using a set of treatment areas where solar development impacts occur and control areas where they do not, is the only one that would allow the effects of management to be fully explored. However, this level of inference also requires that cause and effect relationships be clearly understood through research studies, as represented by columns E and F. In these columns, treatments (burn areas) and controls (unburned areas) are replicated so the effects of management can be statistically verified. Without this verification there is no way to support that management is having the intended effect, or to rule out that some factor besides management is driving the observed change. So although monitoring programs are composed of repeated inventories, they also require research to validate indicator selection and underlying conceptual models to provide the structure to dictate how inventories occur in time and space. As noted by Noon (2002), by itself a monitoring plan cannot define the causes of change, decide how much change is acceptable, decide on threshold values that would trigger management actions, or avoid false conclusions that biologically meaningful change has occurred. Effective monitoring and adaptive

management requires both baseline data, as provided through sufficient pilot studies, as well as baseline research to inform how the monitoring framework will be defined; it is not possible without all of these components. As stated in the Department of Interior's Adaptive Management Technical Guide (Williams et al. 2009):

> It is thought by many that merely by monitoring activities and occasionally changing them, one is doing adaptive management…adaptive management is much more than simply tracking and changing management direction in the face of failed policies…an adaptive approach involves exploring alternative ways to meet management objectives, predicting the outcomes of alternatives based on the current state of knowledge, implementing one or more of these alternatives, monitoring to learn about the impacts of management actions, and then using the results to update knowledge and adjust management actions. Adaptive management focuses on learning and adapting, through partnerships of managers, scientists, and other stakeholders who learn together how to create and maintain sustainable resource systems.

Currently, most lands proposed for development under the BLM solar PEIS do not have sufficient inventory data to establish a baseline. However, BLM has recently introduced a set of Core Terrestrial Indicators to be used in their Adaptive Inventory and Management (AIM) strategy (MacKinnon et al. 2011); data acquisition for these indicators is ongoing or will start soon. These indicators were designed for general monitoring across all BLM lands, and will need to be supplemented with additional ones specific to the solar program. Similarly, despite the dramatic increase in the number of peer reviewed publications on renewable energy in the past two decades, environmental impacts and ecological implications of renewables have been much underrepresented, particularly with respect to utility-scale solar energy (Lovich and Ennen 2011). Research and consensus building to assess the basic impacts of solar power, develop indicators, and define protocols for their measurement should be highest priority, followed by completion of the first inventories for high priority development areas.

In this situation, guiding development to solar energy zones and potentially to focal areas within variance lands provides several advantages:

- By focusing baseline inventory work on selected areas it can be completed as quickly and efficiently as possible.
- By geographically concentrating the standardized, project-level data collection that follows, area-specific data libraries will accumulate that will allow research gaps to be filled, and this will streamline and facilitate future development through increased knowledge of impacts.

3. **Effective monitoring of biological resources must incorporate a mix of indicators** since stressors can be physical, biological, or chemical in nature (Noon 2002). In addition, some ecosystem properties or responses are relatively straightforward to monitor directly, others must be measured indirectly or inferred through surrogates (Leibowitz and Hyman 1999). Elzinga et al. (2001) define two main classes of indicators in reference to monitoring the status of species:

    - Resource monitoring directly quantifies some aspect of a species itself such as population size, average density, cover, or frequency, but has no direct link with the causes of population condition and trend; changes or current status could be the result of other factors besides management.
    - Habitat monitoring assesses how well habitat conditions meet objectives or management standards that are linked to documented relationships between habitat and species from the conceptual model.

    The key to a successful monitoring and adaptive management program is a diverse set of indicators that represent key components, processes, and stressors of ecological and management interest. Indicators should be selected based upon a conceptual model linking stressors and indicators to pathways that affect the structure and function of biological systems (NRC 1995, 2000).

Indicator Selection and Protocol Development

The adaptive management and monitoring section of the Supplement states that the AIM strategy will provide the monitoring foundation for the BLM Solar Energy Program. As stated above, however, additional indicators are needed to monitor impacts, define mitigation, and guide adaptive management for utility-scale solar projects.

The Core Terrestrial Indicators (MacKinnon et al 2011) in the BLM AIM strategy are:

1. Percent cover/proportion of bare ground per unit area.
2. Vegetation composition or percent cover/proportion by species or species group.
3. Percent cover/proportion of non-native invasive plant species.
4. Percent cover/proportion of plant species of management concern.
5. Height of dominant vegetation.
6. Proportion of soil surface in large, inter-canopy gaps.

AIM contingent indicators for specialized uses are:

1. Soil aggregate stability.
2. Significant accumulation of soil toxins.

These vegetation and habitat-based attributes, also known as “coarse filter” attributes, are at least two steps removed from the suite of species that use them; direct use of these to make inference to wildlife requires assumptions that are poorly studied and tenuous for most species (Noon et al. 2009). Creating a defensible monitoring system for the BLM Solar Energy Program would require additional indicators and associated data collection protocols, and these should be developed using a rigorous and inclusive collaborative process like that used for the National Park Service's Mojave Desert Network Vital Signs Monitoring Plan (Chung-MacCoubrey et al. 2008). This objective-driven monitoring system is based on a conceptual model developed with extensive scientific collaboration. The plan used an 8-step approach (not strictly sequential, and likely somewhat iterative) to identify, prioritize, and select indicators for the network of geographically disjunct parks included in the plan. This approach has been adapted below for the BLM Solar PEIS.

1. Identify ecosystem drivers, stressors, and important processes using a linked set of ecological conceptual models developed through multi-disciplinary collaboration between agency staff and research scientists.
2. Conduct a series of small workshops at the field office level to identify important resources, resource threats, management concerns, monitoring objectives and indicators for each.
3. Identify similarities and differences across field offices and summarize indicators, threats, management concerns, and monitoring objectives at the network-level.
4. BLM information review and synthesis at state and federal level.
5. Prioritization of indicators for each field office based on management significance, mandate, and their ability to meet monitoring objectives.
6. National-level scoping workshop, broadly attended by a wide range of stakeholders, to complete scientific review of system-wide indicators and associated information, prioritize indicators based on ecological significance, and define additional research and collaboration to needed to promote range wide conservation of high priority biological indicators (e.g. greater sage-grouse, desert tortoise).
7. Small workshops for field office staff to select an initial “short list” of high-priority indicators.
8. Final small workshop for field office staff to select a final, prioritized list of indicators that are standardized across field offices but also optimized to fit local monitoring needs.

NPS and partner groups completed this indicator selection process and initiated monitoring in the Mojave Desert Network within three years. Although the area monitored by this plan is over 28 times larger than the area associated with the BLM Solar PEIS Modified SEZ Alternative, it is only 40% as large as the area that would be covered by the BLM Solar PEIS Modified SEDP Alternative. Assuming a direct relationship between area covered and time required to initiate monitoring, the process above could be completed quickly for the small subset of lands in the SEZ alternative, the proposed Agua

Caliente and West Chocolate Mountains SEZs, and possibly other variance areas where there is high developer interest. Initiating monitoring on all lands in the Modified SEDP alternative, however, would take over seven years assuming a direct relationship between implementation time and area. This area comparison illustrates the logistical constraints that would come into play if designing a monitoring program for the entire Modified SEDP Alternative, which has 20 million acres distributed over six states, and further supports the need to focus monitoring and development on key areas.

As noted by Noon (2002), the ultimate success of a monitoring program hinges on the selection of appropriate indicators; if the wrong indicators are selected the program will fail, regardless of the level of funding or implementation. Initial criteria for selecting indicators are

- Sensitivity to changes in stressor levels and ecological processes
- Ability to provide information about the status of unmeasured resources
- Cost effectiveness

Additional desirable properties that are evaluated by data from pilot studies and simulations include

- Dynamics that parallel those of the larger environmental component or system of overall interest
- Short-term but persistent response to changes in environmental status
- Accuracy and precision (high signal to noise ratio)
- High likelihood of detecting changes in indicator magnitude with change in environmental status
- Low, or well understood, natural variability, with changes in values due to management or development readily distinguishable from changes due to background variation

BLM must take full advantage of the latest research, data, and analytical techniques in order to efficiently implement monitoring and indicator development for the Solar Program while maximizing cost-effectiveness as well as predictive power. The following recent research and data development projects are directly relevant to indicator development for the BLM Solar PEIS, and are representative of the type of information that must be fully considered in the indicator development process.

- **Frequently acquired, low resolution MODIS or AVHRR imagery to map plant phenology and structure,** using measures of plant growth and vitality in predictive wildlife habitat models for pronghorn (Wallace 2002) and yellow-billed cuckoo (Wallace et al. 2011) as well as to investigate perennial plant cover (Nussear et al. 2009) and plant

species distribution, particularly alien invasive grasses and forbs that exhibit different phenological growth patterns than native species (research ongoing, see page 14 of http://www.arizonanevadaacademyofscience.org/proceedings2008_vol43.pdf for details).

- **Use of AVHRR imagery to detect interannual vegetation change** over time (Li and Guo 2012) could be valuable to determine if plant communities near solar installations are changing relative to similar control areas located away from development.
- **MODIS imagery as a tool to classify grassland condition** by comparing signatures of intact native grassland to degraded grassland and monitoring change over time to locate deteriorating areas (Torregrosa 2011, Jiang et al. 2006).
- **"Fusing" imagery datasets** to achieve higher spatial resolution with frequently-acquired 250 meter and 1 kilometer resolution satellite data mentioned above (Walker et al. 2011) or to combine different types of data as done by Mundt et al. (2006) to map sagebrush using LIDAR and satellite imagery.
- **High-resolution IKONOS satellite imagery to predict habitat structure and seasonal habitat use** by Sonoran pronghorn antelope (Wallace and Marsh 2005).
- **High-resolution aerial and satellite imagery for mapping** invasive weeds, harvester ant mounds, and native vegetation (Yang and Everitt 2010, Fletcher et al. *In Press*, Fletcher et al. 2007).
- **Use of ground-based "phenocams"** along with satellite imagery to track phenological changes in sagebrush vegetation, water availability, plant productivity, then linking these factors to wildlife habitat use as USGS is doing on the Owhyee Plateau in Idaho, Oregon and Nevada (Torregrosa 2011).
- **Repeat Photography** as a monitoring tool to assess landscape and vegetation change over time at established photo points (http://www.nrmsc.usgs.gov/repeatphoto).
- **Airborne LIDAR** acquired from manned aircraft or UAVs (http://www.ars.usda.gov/is/pr/2011/110927.htm) to map vegetation height, bare ground, and biomass (Streutker and Glenn 2006, Mitchell et al. 2011), estimate erosion and dust emission potential after wildfire based on surface roughness (Sankey et al. 2010, Sankey et al. 2011), estimate tree cover (Sankey and Glenn 2011), and classify sagebrush communities (Sankey and Bond 2011).
- **Predictive habitat models** that model habitat suitability as a function readily available bioclimatic and physiographic variables have been used to define suitable habitat for a range of desert species (Boykin et al. 2008, Nussear et al. 2009) maintain habitat connectivity areas for species with limited vagility (Barrows et al. 2011), and predict changes in species distributions due to climate change (Barrows et al. 2011, also see http://www.mojavedesertlandtrust.org/research/2009%20JOTR%20final%20report_20091214.pdf).
- **Analytical methods that estimate wildlife density and abundance** from presence absence, count, or mark-recapture data for direct monitoring of wildlife populations directly or to feed into predictive habitat models (http://warnercnr.colostate.edu/~gwhite/software.html)
- **Predictive spatial models for soil crusts** to facilitate soil crust mapping and monitoring (Bowker et al. 2006).

- **Sediment and dust transport models** to model soil loss and air quality impacts from land disturbance (Sankey et al. 2008, Okin 2008), project the effects of dust deposition (Munson et al. 2010), as well as map sand dunes and model Aeolian sand transport (Hugenholtz et al. 2011).
- **Integration of land use and hydrological models** to simulate the impacts of land use change on channel discharge, evapotranspiration, percolation, surface runoff, transmission losses, water yield, sediment yield and precipitation (Norman et al 2010). This would be useful as a tool to predict impacts of development and to incorporate hydrological considerations into all stages of the solar development process.
- **GPS collar and landscape genetics research to define large mammal movement** patterns in order to site and manage projects to preserve landscape connectivity.
- **Recent efforts to integrate biological data across regions** such as the Western Governors' Association Critical Habitat Assessment Tools, data developed by the Scenario Planning Steering Group of the Western Electricity Coordinating Council, interagency efforts to share data through Landscape Conservation Cooperatives, efforts of NGO groups such as Freedom To Roam and The Wildlands Network should be assessed and relevant data should be incorporated.
- **Integration of previously gathered monitoring data,** such as BLM Ecological Site Descriptions, with newly gathered data using new statistical techniques that deal with data dissimilarities.
- **Use of genetic analyses** to determine population patterns, migration, and use of the landscape by wildlife species (Michels et al. 2001, Epps et al. 2007, Vandergast et al. 2007).

Sampling and Design Considerations

Once indicators are selected a sampling design is needed. This will require collection and analysis of pilot inventory data for all indicators in order to define data collection processes that provide sufficient replication across space and time and have the statistical power to detect biologically significant change. Sampling should be probabilistic so as to allow inference to the target population, and standardized, robust approaches like spatially balanced sampling (GRTS) should be used to maximize data utility. Particular emphasis should be placed on prioritizing sampling methods that are readily and efficiently implemented, but provide precise and unbiased estimates with associated estimates of statistical uncertainty.

Management and Mitigation Triggers

Triggers for management and mitigation sit at the bifurcation of the "healthy" adaptive management diagram at the beginning of the document. If well-defined triggers with appropriate thresholds are not in place for critical resources, management is not and cannot be adaptive. This required component of

adaptive management and monitoring in the BLM Solar Program will require extensive involvement and agreement among a diverse group of experts to develop.

Nie and Schultz (2011) see triggers as a means to bridge adaptive management science and theory with the need for political and legal accountability, providing greater certainty to land managers, politicians, and developers alike by bounding the adaptive management process. Their review of triggers in eight federal adaptive management natural resource plans concludes with five recommendations:

1. Adaptive management must include a clear feedback loop and result in learning that improves future mitigation and management. Methods for feeding information back into a structured decision-making process should be explicit and determined during the design of an adaptive management program.
2. Monitoring programs and triggered mitigation measures should include sufficient detail about desired conditions, what is to be monitored and when, where triggers are set, and what mitigation measures will be implemented over what time frame.
3. Triggers and resulting actions should be explicitly addressed in NEPA analysis, which can limit and/or narrowly define additional NEPA analysis that will be needed.
4. The responsibilities for designing, conducting, interpreting, and funding monitoring should be made explicit and up front, with uncertainties explored through a collaborative engagement process to ensure that monitoring is cost-effective, scientifically valid, and likely to yield useable information about resource effects
5. Decisions about trigger points and trigger mechanisms should be clearly explained and be made transparently; these decisions can be contentious because they hinge on values and priorities, but consensus is mandatory. Triggers can be structured as phased controls or as signals with various priority levels, and part of the consensus process is determining the optimum form of implementation.

Our lack of knowledge of the historic range of natural variation for most indicators makes the identification of triggers difficult. In addition, we lack knowledge of the potential existence of thresholds, or regions of change in the value of a stressor that generate disproportionate change in the value of an indicator or, more seriously, the larger ecological system (Noon 2002). Abrupt, nonlinear changes in ecosystems in response to perturbation have been documented (Connell and Sousa 1983, Knowlton 1992, Estes and Duggins 1995), and changes to new, alternative states have been reported for lake, ocean, reef, and desert ecosystems (Scheffer et al. 2001). In particular, anthropogenic disturbances not consistent with natural disturbance regimes may move ecological systems to unprecedented, alternative states (Holling 1986, Holling and Gunderson 2002). This makes the precautionary principle completely critical when values for triggers are being selected. For example, there is likely an extinction threshold for Mojave desert tortoise with continued habitat fragmentation and loss of habitat connectivity. Any indicator intended to track this must have an associated trigger set at a very conservative level to prevent this threshold from being reached; the more irreversible the potential

environmental loss, the more sensitive the trigger point should be (Noon 2002). These issues make it critical to involve the widest audience of experts and the broadest public process when defining triggers and associated management actions.

Cumulative Effects

Ecological thresholds are strongly related to the concepts of ecosystem resilience and resistance to change, as well as to cumulative effects. Noon (in prep) describes four types of cumulative effects with respect to two stressors A and B: additive, antagonistic, synergistic, and multiplicative.

Box 3.

Types of Cumulative Effects

Consider two stressors, A and B, and their possible interactions:

- Additive: effect = A + B
- Antagonistic: effect < A + B
- Synergistic: effect > A + B
- Multiplicative: effect >> A + B

The first two types work "normally" in that they either contribute together to an ecosystem effect or cancel one another out. Synergistic effects, on the other hand, work together to create an ecosystem effect that is greater than would be expected based on their magnitude, for example ecosystem effects from disturbance of soil and biological soil crusts in combination with invasive exotic plants. Multiplicative effects are even more intense, for example trophic cascades that result from the loss of a species at the base of a food chain.

Given the spatial and temporal extent of disturbance proposed under the BLM Solar PEIS as well as the potential for strong synergistic and multiplicative cumulative effects and the thresholds they introduce, a comprehensive cumulative effects analysis is mandatory for all SEZs and variance areas with strong development pressure. This will require monitoring and adaptive management like that depicted in the fourth scenario in Figure 3 (D), which requires extensive sampling of sufficient paired disturbed and undisturbed sites as implemented in Catlin et al. (2011), albeit on a much larger scale, as well as a

before-after-control-impact (BACI) study design that provides inference to the magnitude of change resulting from cumulative impacts while at the same time accounting for unrelated variation.

Conclusion

In the Supplement to the solar PEIS, BLM has made a commitment to develop an adaptive management and monitoring plan in coordination with potentially affected natural resource management agencies that identifies how impacts will be evaluated, the types of monitoring that will be performed, and science-based thresholds for management and policy modification. The plan will include a process by which changes will be incorporated into the Solar Energy Program, including revisions to policies and design features, and all changes resulting from adaptive management and monitoring will be subject to appropriate land use planning, environmental review, and/or policy development oversight. The plan will incorporate data from specific project evaluations as well as from regional long-term monitoring programs, and data and lessons learned about the impacts of solar energy project will feed back and be incorporated into the BLM's Solar Energy Program in the future.

These strong commitments have been made in the Supplement, but detail on all of the above has been deferred until the FEIS. Delivering on these promises will require an intensive collaborative effort that incorporates the latest science and integrates data over vast areas. These new developments tie in perfectly with ongoing efforts to create a defensible monitoring program across all BLM lands, however, and with proper planning and execution the monitoring and adaptive management program for the BLM Solar Energy Program can serve as both a model and a test bed for future efforts.

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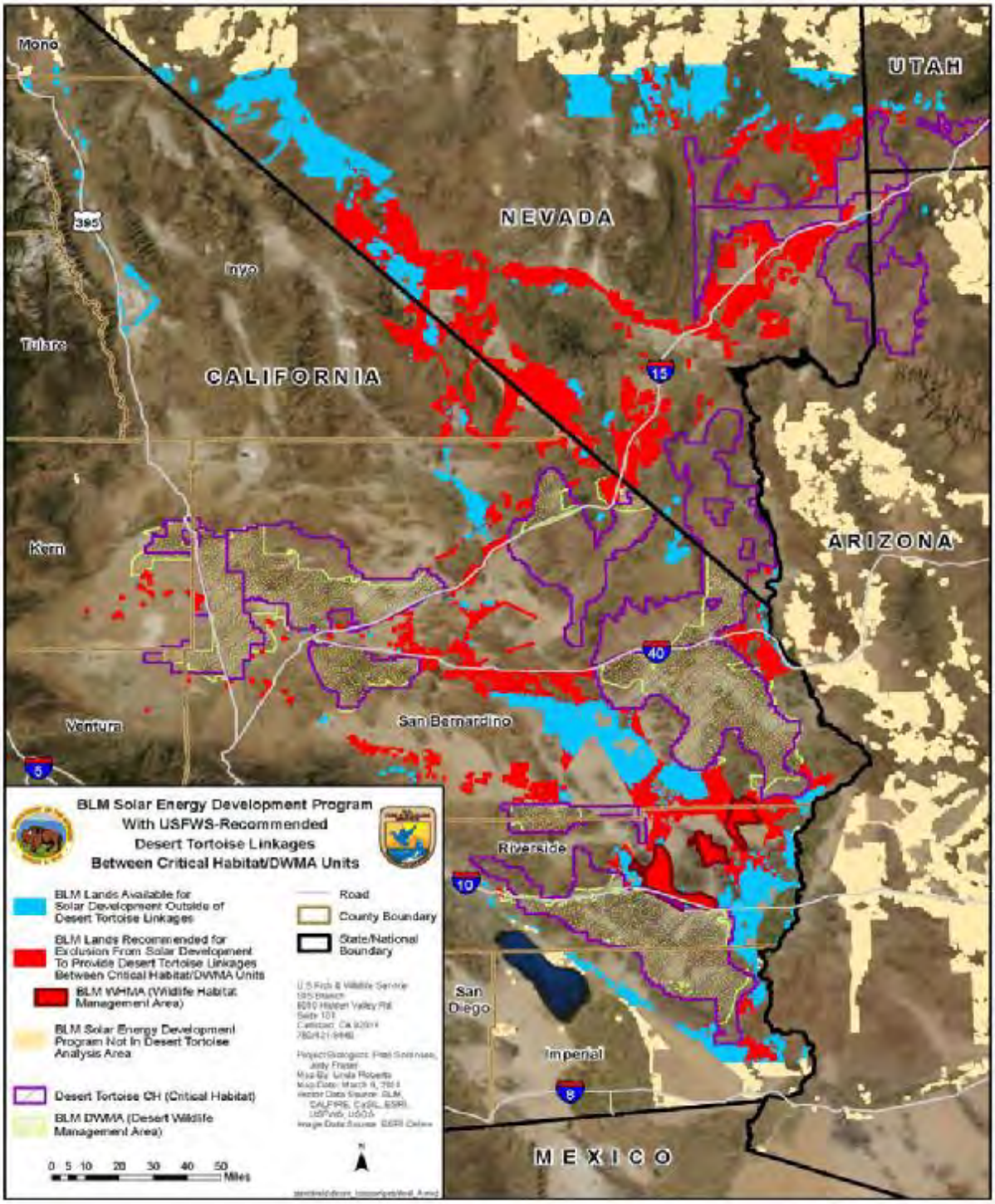
Appendix 2

Figure 1. This figure (FWS Attachment B-2) depicts the FWS proposal for the minimum linkage design (red) necessary for conservation and recovery of the Mojave population of the desert tortoise by connecting Desert Wildlife Management Areas (yellow mottled) and critical habitat units (purple hatched). It represents the intersection of lands proposed by the BLM as open for solar energy development under the preferred alternative (blue) with the linkage design (i.e., modeled predicted desert tortoise habitat, historic gene flow, and select Wildlife Habitat Management Areas) (red). The lands in red are proposed for exclusion from solar energy development by the FWS and are in addition to those the BLM has identified as excluded in the DPEIS.


Mono
UTAH
NEVADA
395
Inyo
Tulare
CALIFORNIA
15
Kern
ARIZONA
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Ventura
San Bernardino
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Riverside
10
San Diego
Imperial
8
MEXICO
BLM Solar Energy Development Program
With USFWS-Recommended
Desert Tortoise Linkages
Between Critical Habitat/DWMA Units
BLM Lands Available for Solar Development Outside of Desert Tortoise Linkages
BLM Lands Recommended for Exclusion From Solar Development To Provide Desert Tortoise Linkages Between Critical Habitat/DWMA Units
BLM WHMA (Wildlife Habitat Management Area)
BLM Solar Energy Development Program Not In Desert Tortoise Analysis Area
Desert Tortoise CH (Critical Habitat)
BLM DWMA (Desert Wildlife Management Area)
Road
County Boundary
State/National Boundary
0 5 10 20 30 40 50
Miles

Thank you for your comment, Adrian Field.

The comment tracking number that has been assigned to your comment is SEDDsupp20158.

Comment Date: January 27, 2012 18:46:16PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20158

First Name: Adrian
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Attachment: Solar Energy PEIS Letter.docx

Comment Submitted:

Comments attached as MS Word Doc.
Thanks you

Solar Energy PEIS Scoping Argonne National Laboratory 9700 S. Cass Ave. – EVS/900 Argonne IL 60439

Re: Scoping Comments on the Solar Energy Development Programmatic Environmental Impact Statement

To Whom It May Concern:

I appreciate the opportunity to comment on the Solar Energy Development Programmatic Environmental Impact Statement (PEIS). My sentiments and comments follow:

1. The PEIS must thoroughly analyze potential economic, material, and nonmaterial impacts to desert communities if the greater desert areas are industrialized with solar energy and transmission projects. Many desert communities depend economically on location- and resource-reliant industries such as tourism; location shooting for film, television, and advertising; recreation, both motorized and nonmotorized; and other cultural activities such as art, historical, and spiritual tours and retreats. Loss of greater-desert viewshed and open space means loss of livelihood for desert communities. Desert communities also increasingly rely on the aesthetic and environmental quality of their setting to attract today's increasingly mobile workforce that has become less geographically tethered and can choose where they live. Retirees are also a significant part of our communities that can choose where they live based on natural amenities and appeal. Therefore, our property values depend on those amenities and that appeal. A diminishment in the quality of desert life will mean income directly lost and future potential thrown away for

our communities. Desert towns will lose their meaning, their heart, and their health if the

surrounding desert is essentially "taken away" by industrialization.

2. The PEIS should include a thorough survey of impacts to

potentially culturally and historically significant lands, including areas developed as part of the historic 1938 Small-Tract Homestead Act that shaped many of the outlying, low-density communities in the Morongo Basin and elsewhere in the Southwest deserts. These unique communities in some cases lie largely intact, but their cultural and historical significance is only recently becoming recognized. Refer for example to the 2008 Wonder Valley Homestead Cabin Festival, which generated interest and participation from its cousin homestead-based communities such as Landers and Johnson Valley (http://homesteadcabin.wordpress.com/) and was featured in the 2008 Architectural Annual issue of Dune Magazine.

3. The PEIS should include consultation with Native American tribal governments to determine whether there are sites or specific areas of particular concern, including sites of traditional religious and cultural significance.

4. The PEIS should study the impacts of increased vehicular traffic and congestion on desert communities, environmental resources, road infrastructure, and public safety during both construction and operational phases of solar and transmission development.

5. The PEIS should study the impacts of worker populations on sensitive desert resources during both construction and operational phases of solar and transmission development.

6. The PEIS should study the impacts on resources that would follow from the introduction of new routes, in view of the known problems caused by off-road vehicle activity and the "invitation" effect of new routes.

7. The PEIS should study impacts on limited water resources

and the effects of competition with desert communities, as well as biological communities, for those resources.

8. The PEIS needs to include the proposed expansion of the Marine Corps Air-Ground Combat Center when considering cumulative and long-term impacts.

9. The PEIS needs to consider how the desert communities' own energy needs will or will not be served by these projects.

10. The PEIS must thoroughly analyze the socioeconomic, security, and environmental effects of remote installations versus locally distributed power and consider alternatives that focus renewable energy development close to the load centers. The impacts and benefits of a comprehensive program involving rooftop solar across the developed Southwest, as well as additional potential energy alternatives, must also be thoroughly analyzed and considered. To single out the desert to bear the brunt of providing energy for the urban areas is an ENVIRONMENTAL JUSTICE issue. To demand sacrifice only of the desert areas and not the load areas is not acceptable!

11. Areas that have already been degraded should be prioritized for consideration for solar and transmission development. No public lands that are basically still relatively undisturbed should be considered for solar energy or transmission use until all degraded lands have been utilized.

12. Removed from any consideration for solar and transmission development should be all protected lands, such as national and state parks, monuments, and preserves; environmentally significant areas such as Designated Wildlife Management Areas and Areas of Critical Environmental Concern; and lands with significant environmental

resource potential such as Wilderness Study Areas, other lands with wilderness

characteristics, and areas that are under consideration as potential wildlife corridors.

13. The PEIS must include a programmatic evaluation of cumulative impacts to Endangered and Listed species, especially the Desert Tortoise.

14. The PEIS must study the potential of construction and operational phases to introduce or encourage invasive vegetation, including *Brassica tournefortii* or Saharan Mustard, not just at project locations but throughout the desert areas, as vehicles are one of the biggest culprits for spreading invasives.

Thank you for your attention to these comments,

Sincerely,

Adrian Field

Thank you for your comment, Robyn Purchia.

The comment tracking number that has been assigned to your comment is SEDDsupp20159.

Comment Date: January 27, 2012 18:48:52PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20159

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Attachment: 2187-009 - Comments by CURE on Solar SDPEIS.pdf

Comment Submitted:

Attached please find comments from Adams Broadwell Joseph & Cardozo submitted on behalf of California Unions for Reliable Energy.

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January 27, 2012

SUBMITTED ELECTRONICALLY *via*
http://solareis.anl.gov/involve/comments/index.cfm

Solar Energy Draft PEIS
Argonne National Laboratory
9700 S. Cass Avenue
EVS/240
Argonne, IL 60439

Re: Comments on Supplemental Draft Programmatic Environmental Impact Statement for Solar Development in Six Southwestern States

To Whom It May Concern:

We are writing on behalf of California Unions for Reliable Energy ("CURE") to provide the Bureau of Land Management ("BLM") with comments on the BLM's proposed Solar Energy Program ("Program") to support utility-scale solar development on BLM administered land. We appreciate the work that BLM has invested in this process, and we enthusiastically support the efforts of the Obama administration to develop renewable energy. These efforts have helped dramatically expand renewable energy while creating thousands of good jobs. We want to see the Obama administration continuing to expand renewable energy and create jobs in a way that is environmentally sustainable over the long term.

Through the Program, the BLM proposes to identify and prioritize development in solar energy zones ("SEZ"). There are two SEZs proposed in California: Imperial East and Riverside East. We have reviewed the Supplement to the Draft Programmatic Environmental Impact Statement ("Supplemental PEIS") prepared pursuant to the National Environmental Policy Act ("NEPA") for the Program and submit the following comments for your consideration.

I. FUTURE ENVIRONMENTAL REVIEW

The Supplemental PEIS states that the BLM is conducting "a thorough environmental review of the proposed SEZs so that future reviews of applications within SEZs can tier to that NEPA analysis, thereby limiting the required scope and effort of additional project-specific NEPA analyses."[1] However, the Supplemental PEIS also states that the Draft Solar PEIS only relies on data that was available to analyze the Program's impacts.[2] To more effectively facilitate future development in SEZs, the BLM has committed itself to collecting additional information to fill in the recognizable "data gaps" in its analysis.[3] We are concerned that the Supplemental PEIS is unclear regarding when the data will be provided and when the public will be provided an opportunity to review and comment on the data and the BLM's analysis of such data. Therefore, the Supplemental PEIS must require these data gaps to be filled in all future, project-specific NEPA analyses that are circulated to the public for review.

Section 101 of NEPA declares it a matter of national policy to preserve important historic, cultural and natural aspects of our national heritage. To achieve this goal, NEPA requires that agencies take a "hard look" at the environmental consequences of a proposed action.[4] "General statements about 'possible' effects and 'some risk' do not constitute a 'hard look' absent a justification regarding why more definitive information could not be provided."[5] ***"[L]ack of knowledge does not excuse the preparation of an EIS; rather it requires the [agency] to do the necessary work to obtain it."***[6]

To comply with NEPA and effectuate its purpose of preserving the important historic, cultural and natural aspects of our heritage, the BLM must require future developers to provide all data identified in the "action plans" and make that data available for public review in future site-specific NEPA documents. This definitive

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[1] Supplement PEIS, p. 2-20.
[2] *Id.* at p. 2-18.
[3] *Ibid.*
[4] Robertson v. Methow Valley Citizens Council, 490 U.S. 332, 350 (1989); *Dubois*, 102 F.3d at 1284 (1st Cir. 1996); *see also* S. Fork Band Council of W. Shoshone of Nev. v. U.S. Dep't of the Interior, 588 F.3d 718, 727 (9th Cir. 2009).
[5] Neighbors of Cuddy Mountain v. U.S. Forest Serv., 137 F.3d 1372, 1380 (9th Cir. 1998).
[6] Nat'l Parks & Conservation Ass'n v. Babbitt, 241 F.3d 722, 733 (9th Cir. 2001), *abrogated on other grounds*, Monsanto Co. v. Geertson Seed Farms, 130 S.Ct. 2743 (2010) (emphasis added).

information is necessary for the BLM to take a "hard look" at project-specific impacts within the proposed SEZs and for the public to have an opportunity to review and comment on BLM's analysis. Specifically, additional data is necessary for the BLM to take a hard look at a specific project's impacts on -- at a minimum -- water resources, cultural resources, biological resources, transmission capacity and public health.

A. Additional project-specific and site-specific data is necessary for the BLM to take a "hard look" at any future project's impacts on water resources

The Supplemental PEIS states that use of groundwater for projects proposed within the Imperial East and Riverside East SEZs would deplete the aquifer.[7] Nevertheless, as the Draft PEIS recognizes, water is necessary for the construction, operation and decommissioning of every type of solar technology.[8] Because the use of groundwater within the California SEZs would deplete the aquifer, developers would need to acquire water from other sources or do a more specific assessment before using groundwater resources. The BLM recognizes a data gap in its water resources analysis in the Supplemental PEIS.[9] Therefore, at this time, the BLM has failed to take a "hard look" at project-specific impacts to water resources.

In the Supplemental PEIS, the BLM must require all future project applicants to provide site-specific and project-specific data on a project's proposed use of water resources. This information must be required at the time a project is proposed in order to enable the BLM to conduct a site-specific analysis of impacts on water resources. The BLM must then release its draft analysis of such data in an environmental review document that is circulated to the public for review.

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[7] Supplemental PEIS, pp. C-39, C-55.
[8] Draft PEIS, pp. 5-38 to 5-39, 5-43, 5-45 to 5-47.
[9] See Supplemental PEIS, p. C-339.

B. Additional project-specific and site-specific data is necessary for the BLM to take a hard look at any future project's impacts on cultural and paleontological resources

The Supplemental PEIS states that potential impacts on significant paleontological and cultural resources are unknown for both SEZs.[10] The Imperial East SEZ is in the midst of a sacred landscape traversed by a network of trails.[11] Indeed, the Quechan Tribe recommended elimination of the Imperial East SEZ altogether because of cultural resources concerns.[12] The Soboba Band of Luiseno Indians and the Quechan also expressed concern over highly sensitive areas within their Tribal Traditional Use Areas in the Riverside East SEZ.[13] The Supplemental PEIS, therefore, recommends additional data collection to reduce the uncertainty about the potential impacts on cultural resources.[14] Therefore, at this time, the BLM has failed to take a "hard look" at project-specific impacts on cultural and paleontological resources.

In the Supplemental PEIS, the BLM must require all future project applicants to provide site-specific and project-specific data on a project's impacts on cultural and paleontological resources. This information must be required at the time a project is proposed in order to enable the BLM to conduct a site-specific analysis of those impacts. The BLM must then release its draft analysis of such data in an environmental review document that is circulated to the public for review.

C. Additional project-specific and site-specific data is necessary for the BLM to take a hard look at any future project's impacts on biological resources

The Supplemental PEIS recognizes that development within both SEZs could adversely affect sensitive habitats both directly and indirectly through project development, habitat degradation and deposition of fugitive dust.[15] The Imperial

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[10] Supplemental PEIS, pp. C-39, C-56.
[11] *Id.* at pp. C-51.
[12] *Id.* at p. C-40.
[13] *Id.* at p. C-56.
[14] *Id.* at p. C-51, C-77 to C-78.
[15] *Id.* at pp. C-39, C-55.

East SEZ represents suitable habitat for 35 special-status species.[16] The Riverside East SEZ represents suitable habitat for 69 special-status species.[17] The Draft Solar PEIS presented a table of special-status species for which potential impacts must be evaluated prior to development in the proposed SEZs.[18] Because project development within the SEZs has the potential to impact biological resources significantly, the BLM must require project-specific information on species occurrences and use of specific project sites before approving ROW applications. Therefore, at this time, the BLM has failed to take a "hard look" at project-specific impacts on biological resources.

In the Supplemental PEIS, the BLM must require all future project applicants to provide site-specific and project-specific data on a project's impacts on biological resources. This information must be required at the time a project is proposed in order to enable the BLM to conduct a site-specific analysis of those impacts. The BLM must then release its draft analysis of such data in an environmental review document that is circulated to the public for review.

D. Additional project-specific and site-specific data is necessary for the BLM to take a hard look at any future project's impacts from transmission

David Marcus, a former advisor to the California Energy Commission and expert in electricity and energy issues, reviewed the proposed methodology for the transmission analysis. His comments and curriculum vitae are attached as Attachment A. According to Mr. Marcus, the BLM's proposed methodology in the Supplemental PEIS contains numerous errors and does not inform an analysis of transmission access issues and potential capacity.[19] In his opinion, the methodology needs to take into account networked power flows and the existing set of projects that are already queued up for interconnection.[20]

To take a hard look at the transmission needs of proposed projects, the BLM must collect additional data on existing projects and transmission capacity. This

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[16] *Id.* at p. C-39.
[17] *Id.* at p. C-55.
[18] *Id.* at p. C-45; Draft PEIS, Table 9.1.12.1-1.
[19] Letter from David Marcus, to Robyn C. Purchia, Attorney, Adams Broadwell Joseph & Cardozo (Jan. 26, 2012), pp. 1-3 (Attachment A).
[20] *Id.* at p. 3.

information must be collected on an ongoing basis as projects are proposed and added to the transmission grid. The BLM also must ensure that project-specific NEPA documents collect additional transmission data and take the requisite hard look at potential transmission impacts. Therefore, at this time, the BLM has failed to take a "hard look" at project-specific impacts related to transmission.

In the Supplemental PEIS, the BLM must require all future project applicants to provide project-specific and "real-time" data regarding transmission. This information must be required at the time a project is proposed in order to enable the BLM to conduct a site-specific analysis of potential impacts. The BLM must then release its draft analysis of such data in an environmental review document that is circulated to the public for review.

E. Additional project-specific and site-specific data is necessary for the BLM to take a hard look at any future project's impacts on public health

The Supplemental PEIS did not acknowledge impacts to workers who may be exposed to contaminants in the soil during project construction, operation and decommissioning activities. Site-specific data regarding existing and potential contamination and other hazards is necessary to take a hard look at a project's impacts to public health. Therefore, at this time, the BLM has failed to take a "hard look" at project-specific impacts on public health.

In the Supplemental PEIS, the BLM must require all future project applicants to provide site-specific and project-specific data on a project's impacts on public health from hazards existing and proposed on future project sites. This information must be required at the time a project is proposed in order to enable the BLM to conduct a site-specific analysis of public health impacts. The BLM must then release its draft analysis of such data in an environmental review document that is circulated to the public for review.

II. BLM MUST PREPARE A SUPPLEMENTAL EIS INSTEAD OF A FINAL EIS IF IT MAKES SUBSTANTIAL CHANGES TO THE PROPOSED ACTION

"An agency's NEPA responsibilities do not end with the initial assessment; supplemental documentation 'is at times necessary to satisfy the Act's action-forcing purposes.'"[21] As stated by the United States Supreme Court in *Marsh v. Oregon Natural Resources Defense Council*,

> It would be incongruous . . . with the Act's manifest concern with preventing uninformed action, for the blinders to adverse environmental effects, once unequivocally removed, to be restored prior to the completion of agency action simply because the relevant proposal has received initial approval.[22]

In addition to NEPA's requirement that BLM prepare site-specific project analyses, as described above, NEPA also requires the BLM to prepare a supplemental EIS in certain circumstances. A supplemental EIS ***must*** be prepared if the agency makes "substantial changes in the proposed action that are relevant to environmental concerns" or if "there are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts."[23] "This is a low standard."[24] If there is any "substantial question regarding whether a project may have a significant effect," then the BLM must conduct supplemental environmental review.[25] If a proposed project affects environmental concerns in a manner differently than previously analyzed, the change is surely "relevant" to those same concerns.[26]

Here, the BLM states that additional data on mineral resources, visual resources, cultural resources, and transmission will be provided for inclusion in the

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[21] Price Roads Neighborhood Ass'n, Inc. v. U.S. Dept. of Transp., 113 F.3d 1505, 1509.
[22] Marsh v. Oregon Natural Res. Def. Council, 490 U.S. 360, 371 (1989).
[23] 40 C.F.R. § 1502.9(c)(1).
[24] Klamath Siskiyou Wildlands Ctr. v. Boody, 468 F.3d 549, 569 (9th Cir. 2006).
[25] *Id.*; *see also Price Roads Neighborhood Ass'n*, 113 F.3d at 1509 ("supplemental documentation is only required when the environmental impacts reach a certain threshold-i.e. significant (defined at 40 C.F.R. § 1508.27) or uncertain").
[26] New Mexico ex rel. Richardson v. Bureau of Land Mgmt., 565 F.3d 683, 707 (10th Cir. 2009).

Final PEIS.[27] If the collection of this additional data causes the BLM to make substantial changes to the proposed action or constitutes significant new information relevant to environmental concerns, the BLM must publish a Supplemental PEIS instead of a Final PEIS and circulate the Supplemental PEIS to the public for review.

III. CONCLUSION

In the Supplemental PEIS, the BLM fails to take a "hard look" at project-specific impacts on water resources, cultural resources, biological resources, public health and from transmission. Therefore, the BLM must make clear that all future project applicants must provide site-specific and project-specific data on these resource areas. This information must be required at the time a project is proposed in order to enable the BLM to conduct site-specific analyses of each future project. The BLM must then release its draft analyses in environmental review documents that are circulated to the public for review. Finally, if new information is added to the Supplemental PEIS after the pending comment period, the BLM must publish a Supplemental PEIS instead of a Final PEIS and circulate the Supplemental PEIS to the public for review.

By faithfully complying with the requirements of NEPA, BLM will help ensure that development of renewable energy on BLM land will be sustainable, and the renewable energy potential of the area will be fully realized.

Sincerely,

Robyn C. Purchia/ljl

Robyn C. Purchia

RCP:ljl

Attachment

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[27] Supplemental PEIS, pp. C-61,C-71, C-77, Appendix C.

ATTACHMENT A

Comments of David Marcus on the “SLT” transmission analysis in the Solar Program Supplemental PEIS

The PEIS says that load flow data is used to "establish normal flow patterns on existing high-voltage lines surrounding the SEZ." (p. C-337.) Normal flow patterns are utterly irrelevant to whether new generation can be interconnected. New interconnections are allowed only if they will not cause overloads under all expected conditions, which includes peak load conditions and N-1 conditions. For the California ISO, interconnection analyses also include N-1/G-1 conditions in which both one major generator and one major facility (transmission line or transformer) are assumed both out at once, while loads are also at peak levels. For other states, N-1 conditions during peak loads may be sufficient. But no utility or system operator assumes that spare capacity can be determined based on "normal" conditions when loads are not at absolute peak levels and all facilities are in service.

Using inadequate methodology, the PEIS concludes that there will be a minimum of 2532 Mw of spare capacity on the Colorado River-Devers-Valley-Serrano transmission path in 2020. (p. C-338). The more detailed analysis shows that the "normal flow" data was actually calculated by PEIS consultants from FERC data and is in no way measured data. The more detailed analysis concludes that "normal flow" on the Palo Verde-Devers-Valley path is only 963 Mw. (Figure 4, p. 22; note that this same figure contains a wildly inaccurate map of 500 kV transmission lines in Southern California, showing non-existent lines between Imperial and Riverside Counties, between San Diego and Orange Counties, between San Diego and Riverside Counties, between Riverside and San Bernardino Counties (Devers-Lugo), and within Imperial, San Diego, Orange, and Los Angeles Counties.) It concludes that there was 1637 Mw of spare capacity on the Palo Verde-Devers line in 2011 and even more spare capacity farther west. (Figure 5, p. 23; this figure has the same wildly inaccurate map of 500 kV transmission as Figure 4.)

The absurdity of the PEIS analysis can be seen in the fact that while the PEIS was concluding that there are thousands of Mw of space on lines from Arizona to California (5738 Mw in 2015 on the Colorado-Devers line, per p. C-338), the CAISO was concluding new potential developments would require new transmission lines west of Devers that would take 7 years to complete. (See attached public document, a redacted copy of the Blythe Solar interconnection study by the CAISO, pp. 11-13 and also 16-17.)

The PEIS supplemental study admits that it doesn't use the “new” standard power flow techniques that real transmission planners have used for decades. (p. 4.) It also admits that it doesn't consider the impact of other queued generators located outside of the particular SEZ. (p. 24.) Finally it admits that it doesn't consider the impact of "multiple line pathway capabilities", which appears to be its contorted way of saying that it ignores the fact that the electrical grid is, in fact, a network. (p. 24, fn. 6.) But the networked nature of the grid is its primary characteristic. To evaluate grid capabilities without taking into account that it is a grid is like saying that because two small towns are connected by a freeway it must be easy to travel between them, while ignoring the large city that uses the same freeway and has rush hours.

The PEIS supplemental study admits that it "does not address all the complexities", but the reality is that it is so far from addressing the reality of the grid that what it does address is meaningless. (p. 24, fn. 6.) The California ISO, facing the real world problem of interconnecting new solar generators to the grid (the 1/12/2012 ISO interconnection queue contains over 39,000 Mw of solar projects), has struggled for years with the issue of how to model transmission availability.

The sad truth is that to have any hope of providing a realistic estimate of existing system capacity, the SLT methodology would need to be completely scrapped and replaced with a methodology that takes into account networked power flows and takes into account the existing set of projects that are already queued up for interconnection. The approximations used to provide the SLT estimates of spare capacity are simply wrong.

RESUME

DAVID I. MARCUS
P.O. Box 1287
Berkeley, CA 94701-1287

June 2011

Employment

Self-employed, March 1981 - Present

Consultant on energy and electricity issues. Clients have included Imperial Irrigation District, the cities of Albuquerque and Boulder, the Rural Electrification Administration (REA), BPA, EPA, the Attorney Generals of California and New Mexico, alternative energy and cogeneration developers, environmental groups, labor unions, other energy consultants, and the Navajo Nation. Projects have included economic analyses of utility resource options and power contracts, utility restructuring, utility bankruptcy, nuclear power plants, non-utility cogeneration plants, and offshore oil and hydroelectric projects. Experienced user of production cost models to evaluate utility economics. Very familiar with western U.S. grid (WSCC) electric resources and transmission systems and their operation and economics. Have also performed EIS reviews, need analyses of proposed coal, gas and hydro powerplants, transmission lines, and coal mines. Have presented expert testimony before FERC, the California Energy Commission, the Public Utility Commissions of California, New Mexico, and Colorado, the Interstate Commerce Commission, and the U.S. Congress.

Environmental Defense Fund (EDF), October 1983 - April 1985

Economic analyst, employed half time at EDF's Berkeley, CA office. Analyzed nuclear power plant economics and coal plant sulfur emissions in New York state, using ELFIN model. Wrote critique of Federal coal leasing proposals for New Mexico and analysis of southwest U.S. markets for proposed New Mexico coal-fired power plants.

California Energy Commission (CEC), January 1980 - February 1981

Advisor to Commissioner. Wrote "California Electricity Needs," Chapter 1 of Electricity Tomorrow, part of the CEC's 1980 Biennial Report. Testified before California PUC and coauthored CEC staff brief on alternatives to the proposed 2500 megawatt Allen-Warner Valley coal project.

CEC, October 1977 - December 1979

Worked for CEC's Policy and Program Evaluation Office. Analyzed supply-side alternatives to the proposed Sundesert nuclear power plant and the proposed Point Concepcion LNG terminal. Was the CEC's technical expert in PG&E et. al. vs. CEC lawsuit, in which the U.S. Supreme Court ultimately upheld the CEC's authority to regulate nuclear powerplant siting.

Energy and Resources Group, U.C. Berkeley, Summer 1976

Developed a computer program to estimate the number of fatalities in the first month after a major meltdown accident at a nuclear power plant.

Federal Energy Agency (FEA), April- May 1976

Consultant on North Slope Crude. Where To? How?, a study by FEA's San Francisco office on the disposition of Alaskan oil.

Angeles Chapter, Sierra Club, September 1974 - August 1975

Reviewed EIRs and EISs. Chaired EIR Subcommittee of the Conservation Committee of the Angeles Chapter, January - August 1975.

Bechtel Power Corporation (BPC), June 1973 - April 1974

Planning and Scheduling Engineer at BPC's Norwalk, California office. Worked on construction planning for the Vogtle nuclear power plant (in Georgia).

Education

Energy and Resources Group, U.C. Berkeley, 1975 - 1977

M.A. in Energy and Resources. Two year master's degree program, with course work ranging from economics to engineering, law to public policy. Master's thesis on the causes of the 1972-77 boom in the price of yellowcake (uranium ore). Fully supported by scholarship from National Science Foundation.

University of California, San Diego, 1969 - 1973

B.A. in Mathematics. Graduated with honors. Junior year abroad at Trinity College, Dublin, Ireland.

Professional Publications

"Rate Making for Sales of Power to Public Utilities," with Michael D. Yokell, in Public Utilities Fortnightly, August 2, 1984.

Thank you for your comment, Mike Lipsitz.

The comment tracking number that has been assigned to your comment is SEDDsupp20136.

Comment Date: January 27, 2012 15:53:32PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20136

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Comment Submitted:

The Solar PEIS Supplement with its extensive scientific data and regulatory information requires additional time for stakeholders to make informed comments.
A 3 month extension of the public comment period is necessary to have sufficient time to adequately analyze the effects of 20 million additional acres of public lands and to ensure a meaningful democratic process.

I hope you will give strong consideration to this extension request.

Thank you for your comment, Douglas Clark.

The comment tracking number that has been assigned to your comment is SEDDsupp20137.

Comment Date: January 27, 2012 15:54:52PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20137

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Attachment:

Comment Submitted:

1. If the Solar arrays are placed on the proposed public lands, make sure the leases are profitable for the American Citizens (i.e. high lease costs).
2. Place Solar Arrays where there are small isolated BLM properties surrounded by private land. This could be a win win situation for the Federal Goverment and Private Land Owners - this is called Collabortion.
3. There are lots of private farms that have limited water use and would be good candidates for such Solar Array proposals.
4. Place Solar Arrays on allready distrubed ground (i.e. irragated farmland, cities, along highways.)
5. Keep the scale of solar arrays small so that more people can benifit (i.e. no greater than 50 MW solar array).
6. The proposed solar sites will impact the visual quality and wide open feeling enjoyed by thousands of people.

Thank you for your comment, Alex Daue.

The comment tracking number that has been assigned to your comment is SEDDsupp20138.

Comment Date: January 27, 2012 16:17:30PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20138

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Attachment: Supplement to Solar DPEIS Comments - Nevada (TWS and partners 1-27-12).pdf

Comment Submitted:

TWS et. al Nevada comments.

January 27, 2012

Delivered via electronic submission to the BLM Solar PEIS website and U.S. mail (with attachments).

Shannon Stewart, BLM Solar PEIS Project Lead
Solar Energy PEIS
Argonne National Laboratory
9700 S. Cass Avenue
EVS/240
Argonne, IL 60439

Re: Comments on the Supplement to the Draft Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States (Nevada portion)

Dear Ms. Stewart:

Please accept and fully consider these comments on the Nevada portion of the Supplement to the Draft Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States (Supplement) on behalf of The Wilderness Society, Nevada Wilderness Project, Defenders of Wildlife and Sierra Club. Please note that these comments are specific to the Nevada portion of the Supplement – some of the signatory groups are also submitting separate comment letters addressing the other states included in the PEIS as well as overarching policy issues. Our April 18, 2011 comments on the Draft PEIS are incorporated by reference.

Overview

We appreciate the overall direction of the Supplement with its additional focus on guiding solar projects to low-conflict Solar Energy Zones (SEZs) in the Modified Solar Energy Development Alternative. The Department of Interior (DOI) and the Bureau of Land Management (BLM) have shown a strong commitment to zone-based development in both the Supplement and in public statements since the publication of the Supplement. We believe that this focus is critical for both the protection of wildlands and wildlife habitat and for meeting our climate and clean energy goals through the success of responsible solar development on public lands. **The BLM should continue to refine the Programmatic Environmental Impact Statement (PEIS) through the Final PEIS and Record of Decision (ROD), carrying forward the zone-based focus and most other elements of the Supplement, and sign the ROD by fall 2012.**

We also appreciate that the BLM has addressed many of the specific recommendations we made on the Draft PEIS regarding the Nevada SEZs in the SEZ action plans in the Supplement. Completing the proposed additional analyses, pre-construction surveys, mapping and other reviews identified in the SEZ action plans will be very important for the success of low-impact solar development in the SEZs, and the BLM should ensure that these efforts are completed prior to development.

Our comment letter addresses several issues, including the following key issues:

- **Exclusion areas:** The Supplement should be strengthened by adding Citizen Inventoried Wilderness lands, BLM-identified lands with wilderness characteristics that are not managed to protect those characteristics, desert tortoise connectivity corridors and the other key areas listed below to the exclusion list.
- **Variance process and desert tortoise:** The BLM should ensure protection of desert tortoise by employing special variance application requirements and strengthening those requirements beyond Option 2 set out in the Supplement, as detailed in this letter.
- **Changes to SEZs and proposed SEZ action plans:** We support most of the changes to the SEZs and the SEZ action plans included in the Supplement. Key recommendations from our comments on the Draft PEIS that still need to be addressed are highlighted in this letter.
- **Visual Resource Management in SEZs:** Given the rapidly evolving nature of solar technologies, the BLM should address visual resource impacts on a project-by-project basis in the SEZs, rather than using the proscriptive height and technology restrictions proposed in the Supplement.

I. The BLM should strengthen the exclusion areas in the Final PEIS.

We appreciate the set of exclusion areas included in the Draft PEIS and the Supplement to limit impacts to sensitive natural and cultural resources. The additional exclusion areas added in the Supplement will also help limit impacts and facilitate responsible solar development. **We advise the BLM to coordinate with appropriate staff at the state office of the Nevada Department of Wildlife to make certain that the best available wildlife data are fully incorporated into the analysis of areas potentially open to variance applications prior to publication of the Final PEIS. In addition, BLM should also exclude the following areas from development:**[1]

- BLM-identified lands with wilderness characteristics not managed to protect those characteristics;
- 165,000 acres of Citizens' Proposed Wilderness lands;[2]
- 6,211 acres of 75% core sage-grouse habitat (75% core should be the minimum standard for sage-grouse habitat). We also note that a more comprehensive and scientifically derived analysis is nearing completion and should be used to update the variance application areas prior to publication of the Final PEIS in lieu of the core maps;
- Over 400,000 acres of occupied bighorn sheep habitat or crucial winter habitat for mule deer and pronghorn: the Supplement includes "Big Game Winter Ranges identified in applicable land use plans" amongst the exclusion areas, and these additional 400,000 acres should also be excluded (Supplement at p. 2-16);

[1] Detailed rationales for excluding these areas from solar development were included in our April 18, 2011 comment letter on the Draft PEIS, and are incorporated here by reference.
[2] GIS data for these areas are included as Attachment 1.

- Over 1.1 million acres of identified wildlife movement habitats, or corridors, for big game mammals: the Supplement includes "Big Game Migratory Corridors identified in applicable land use plans" amongst the exclusion areas, and these additional 1.1 million acres should also be excluded (Supplement at p. 2-16);
- 83 different Nevada Heritage species within variance lands;
- 1 Candidate, 4 Threatened, and 5 Endangered Species impacted by variance lands according to the NDOW diversity dataset;
- Desert tortoise connectivity areas: as detailed beginning on page four of these comments, the BLM should exclude desert tortoise connectivity areas from solar development. The BLM should also continue to incorporate additional information regarding protection of this species as it becomes available, and adjust management based on the best available science;[3]
- The Seven Significant Spring Landscapes identified in the Nevada Springs Conservation Plan prepared by the Nature Conservancy, the Desert Research Institute and the Nevada Natural Heritage Program[4] including: Amargosa Desert, Railroad Valley, White River Valley, Pahranagat Valley, Upper Muddy River,
- Steptoe Valley and Soldier Meadow;
- Ivanpah Valley public lands:[5] The Ivanpah Valley is a unique valley spanning the state line between California and Nevada. Because of this biologically arbitrary boundary, impacts to biological resources from renewable energy developments in different parts of the same valley are evaluated by different states. The Ivanpah Valley is important because it is home to a dense population of the federally threatened desert tortoise as well as rare plan communities. A small portion of the valley in California is designated as a desert tortoise Area of Critical Environmental Concern (ACEC) under the Northern and Eastern Mojave Plan. A portion of federally designated critical habitat is also identified in the southeastern part of the valley.

  Surveys on both sides of the state line indicate an extant, robust population of desert tortoise. In fact, the U.S. Fish and Wildlife Service's (FWS) October 10, 2010 Biological Opinion on the Ivanpah Solar Electric Generating Station (ISEGS), which is located in the southwestern part of the valley, states at p. 63: "We recommend that the Bureau amend the California Desert Conservation Area Plan to prohibit large-scale development (e.g., solar energy facilities, wind development, etc.) within the area bounded by Interstate 15, the State line, and Clark Mountains." This recommendation was limited to the land on the California side of the border, because the local office of the consulting agencies' jurisdiction was in California.

[3] Ecological genetics of the Mojave Desert tortoise, 2008, B. E. Hagerty. University of Nevada, Reno. Ecology, Evolution and Conservation Biology.
[4] http://heritage.nv.gov/reports/springcons.pdf
[5] Please note that the Silver State II project application is not a variance application and therefore our comments regarding the Ivanpah Valley as a recommended exclusion area would not apply to that specific project.

As the BLM is well aware, the ISEGS project quickly reached its "take" limit of desert tortoises and had to re-initiate consultation with the Service, which resulted in a new Biological Opinion on June 10, 2011. In the new Biological Opinion, the FWS expanded its recommendation to include the whole of the Ivanpah Valley, stating "We recommend that the Bureau amend the necessary land use plans to prohibit large-scale development (e.g., solar energy facilities, wind development, etc.) within all remaining portions of the Ivanpah Valley to reduce fragmentation within the critical linkage between the Ivanpah Critical Habitat Unit and the Eldorado Critical Habitat Unit." (at pg. 92-93). This new recommendation recognizes that the whole valley is important to the survival of this population of desert tortoise, and that the linkage between the Ivanpah Critical Habitat Unit, which is in California, and the Eldorado Critical Habitat Unit, which is in Nevada, must be kept intact. In line with the direction already identified by the FWS, BLM-administered lands within the Ivanpah Valley should be included as an exclusion area for variance applications.

Although BLM is undertaking a new cumulative effects analysis for a portion of the Ivanpah Valley (and which does not include much of the valley in Nevada), it has not finished the analysis. Nor has the BLM developed either a comprehensive bi-state assessment or a long-term management plan for this important valley. Meanwhile, the entire Ivanpah Valley has been nominated as an ACEC, in order to provide further safeguards for the desert tortoise in this important valley as well as a suite of very rare plants and significant cultural values present there. To avoid further degradation of the valley, we urge that it be excluded from variance applications.

II. The BLM should ensure that the variance process protects desert tortoise.

The desert tortoise is a bellwether species for the Mojave and Sonoran desert ecosystems. Listed as a federal threatened species by the FWS in 1990, desert tortoise numbers remain low in spite of ongoing recovery efforts, and this animal remains in an imperiled state. Since renewable energy development has the potential to significantly and irreversibly affect desert tortoise populations and the ability of this iconic species to recover, it is essential that the DOI adopt standards for solar energy development in the Final PEIS that will provide for the recovery of desert tortoise populations and the species as a whole. These standards should include: 1) the protection of key habitat for the desert tortoise, including occupied and unoccupied but suitable habitat, and 2) the protection of key connectivity habitats and linkages for the desert tortoise.

We recommend that the United States Geological Survey (USGS) desert tortoise habitat suitability model[6] and desert tortoise density be used to provide interim criteria for areas

[6] Nussear, K.E., T.C. Esque, R.D. Inman, L. Gass, K.A. Thomas, C.S.A. Wallace, J.B. Blainey, D.M. Miller, and R.H. Webb. 2009. Modeling habitat of the desert tortoise (*Gopherus agassizii*) in the Mojave and parts of the Sonoran Deserts of California, Nevada, Utah, and Arizona: U.S. Geological Survey Open-File Report 2009-1102, 18 p.

where variance applications will be accepted but also recognize that development of a more detailed model is needed to guide conservation of the species at the appropriate scale required for solar project siting. The USGS desert tortoise habitat suitability model was intended to provide guidance for conservation planning at the range-wide scale, and represents the most comprehensive effort to define suitable habitat for the species to date. The one kilometer cell size used for this analysis and the emphasis on topographical, soil, and meteorological data as predictors make the model useful for predicting at the landscape-scale, but they do not provide the needed precision for analyses at the sub-regional scale or at the solar project sitting level.

Until additional refinement of a habitat model is completed by FWS, the following criteria should be met:

For applications in variance application areas that are within the range of desert tortoise but outside of proposed connectivity areas, (as modified by our recommendations in these comments), the applicant must provide documentation of the following:

- Project area has less than or equal to 2 tortoises (>160 mm Midline Carapace Length) per square mile; and
- Where Habitat Potential Index Value is 0.7 or greater, verification that the habitat condition is "highly converted."[7] This verification should be provided through application of science-based models of land conditions through field inspection.

Our recommended criterion of two adult desert tortoises per square mile is based on current range-wide density estimates within recovery units that range from three to 36 per square mile.[8]

The predicted habitat suitability rating of 0.7 and above (on a scale of 0 to 1.0) is significant because 95% of the lands with a rating of greater than 0.7 in the USGS habitat suitability model also had confirmed presence of desert tortoises based on field survey data. This habitat model, based on 10 environmental factors that included soils, vegetation, precipitation, elevation, and topography, is a sufficiently robust, science-based model, for interim land use planning and conservation planning for the Desert tortoise and its habitat, but further refinements are needed to make habitat suitability predictions more accurate and precise, both to protect important habitat as well as to ensure that areas not important for the species are not mis-identified.

Pursuing a model at finer scales would require the use of variables that directly or indirectly assess the resources used by tortoises when selecting habitat, such as the presence of plants used for forage, vegetation diversity, density of annuals vs. perennials, and so on. In addition, habitat connectivity analyses must be integrated with habitat

[7] "Highly converted" refers to urban, suburban and agricultural lands that are heavily altered. While some can support conservation targets, their ecological context is highly compromised.

[8] U.S. Fish and Wildlife Service. 2010. DRAFT Range-wide Monitoring of the Mojave Population of the Desert Tortoise: 2010 Annual Report. Report by the Desert Tortoise Recovery Office, U.S. Fish and Wildlife Service, Reno, Nevada. 49 pp.

suitability analyses in order to ensure that the focus is on preserving suitable and occupied habitat that is connected with other population areas as well as to ensure these connectivity areas themselves are preserved to provide meta-population persistence.

The USGS desert tortoise habitat suitability model does not account for urban development, habitat destruction/fragmentation, or natural disturbances that have lowered habitat quality in recent years. Thus, we recommend using The Nature Conservancy's (TNC's) Mojave Desert Ecoregional Assessment[9] and the Conservation Biology Institute's Framework for Effective Conservation Management of the Sonoran Desert in California[10] to exclude these lands as having little or no habitat or conservation value. We recognize that it may be necessary to verify the habitat condition through field inspection and to accurately assess the adult desert tortoise density. We also recognize that modeling of suitable desert tortoise habitat needs to be refined through further field study and analysis, and that updated models should be developed soon and applied to our recommended criteria in variance application areas as they become available.

Successful recovery of the desert tortoise requires that existing populations and their higher rated habitats are protected from deleterious human impacts. If recovery actions are successful to the point of promoting population increases, lands included in our recommended Modified Option 2 where solar energy development would be inappropriate could be the very areas into which newly recruited tortoises would need to move in response to climate change or simply expand their population in response to successful recovery efforts.

Preserving connectivity between desert tortoise conservation areas is vital to promoting gene flow and maintaining and enhancing desert tortoise populations. Connectivity can only be preserved by maintaining intact landscape-level habitat, so it is critical that connectivity areas be conserved and protected.

We therefore strongly recommend that connectivity areas be excluded from development. We also recommend that the BLM's proposed connectivity habitats shown on Figure 2.2-2 (SPEIS at p. 2-36) be replaced with the connectivity (or "linkage") habitats recommended by the FWS in its comments on the Draft PEIS. See comments of U.S. Fish and Wildlife Service, Draft PEIS, May 6, 2011, Figure B-2. It is important to understand that agency's recommendations identified lands to be included in a "…*minimum linkage design necessary for the conservation and recovery of the Mojave population of the desert tortoise*…" FWS DPEIS comments, Figure B-2. (emphasis added)

III. Changes to SEZs and SEZ action plans.

[9] Randall, J. M., S.S. Parker, J. Moore, B. Cohen, L. Crane, B. Christian, D. Cameron, J. MacKenzie, K. Klausmeyer and S. Morrison. 2010. Mojave Desert Ecoregional Assessment. Unpublished Report. The Nature Conservancy, San Francisco, California. 106 pages + appendices. Available at: http://conserveonline.org/workspaces/mojave/documents/mojave-desert-ecoregional-2010/@@view.html.

[10] Conservation Biology Institute. 2009. A Framework for Effective Conservation Management of the Sonoran Desert in California. Prepared for The Nature Conservancy. 78 pp. + appendices.

In addition to the specific recommendations relating to individual SEZs below, we recommend that the BLM include in the Final PEIS a chart for each of the SEZs that identifies not only the additional data that is needed but who is responsible for compiling the data and completing each item listed, as well as a timetable for completion of the individual tasks.[11]

General recommendation regarding golden eagle habitat: the BLM should identify areas around SEZs with dense Golden eagle territories with surveys following USFWS wind guidelines. Nest surveys should be done (helicopter and pedestrian) as well as observations at points on the ground for juvenile eagles and non-breeding adults. If areas have dense territories, the BLM should add additional protective design features for development in these areas to ensure impacts to this species are avoided, minimized and mitigated.

Amargosa Valley SEZ

We are generally supportive of the proposed action plan for the Amargosa Valley SEZ, including the boundary adjustments to make the Amargosa River channel and floodplain, dune/sand transport areas in the southwest part of the SEZ as well as the area on the eastern side of highway 95 non-development areas, the restriction to solar technologies with low water use, and the commitment to monitor direct and indirect impacts on Special Status Species. The proposed mapping and survey efforts will be particularly important for supporting responsible development within the SEZ. **Provided that BLM completes the proposed action plan prior to development and incorporates our recommendations below and on the Draft PEIS, we support designation of the proposed Amargosa Valley SEZ as a SEZ in the Final PEIS.**

- The BLM should create an adaptive monitoring and mitigation plan which addresses the over-allocation of groundwater resources in the Amargosa Valley through:
    - Water mitigation and monitoring measures such as installing groundwater monitoring wells both within the SEZ and within a larger area where the estimated cone of depression may affect resources, with the information from such monitoring used to curtail groundwater use; and
    - Measures to avoid impacts from groundwater depletion to Special Status Species and aquatic and riparian communities.

Dry Lake SEZ

We are generally supportive of the changes to and proposed action plan for the Dry Lake SEZ, including the boundary adjustment to make Dry Lake playa and the associated wetland and floodplain non-development areas, removal of northern areas that support sensitive lizard species and bighorn sheep movements from the SEZ, and restriction to solar technologies with low water use. In addition, the proposed mapping and survey

[11] Detailed rationales for all SEZ-related recommendations were included in our April 18, 2011 comment letter on the Draft PEIS, and are incorporated here by reference.

efforts will be particularly important for supporting responsible development within the SEZ. **Provided that BLM completes the proposed action plan prior to development and incorporates our recommendations on the Draft PEIS, we support designation of the proposed Dry Lake SEZ as a SEZ in the Final PEIS.**

Dry Lake Valley North SEZ

We are generally supportive of the changes to and proposed action plan for the Dry Lake Valley North SEZ, including the removal of the northern part of the SEZ that provides important wildlife habitat and designation of the playa in the southwest corner as a non-development area. The proposed mapping and survey efforts will be particularly important for supporting responsible development within the SEZ. **Provided that BLM completes the proposed action plan prior to development and incorporates our recommendations below and on the Draft PEIS, we support designation of the proposed Dry Lake Valley North SEZ as a SEZ in the Final PEIS.**

- Desert Valley kangaroo mouse: The biologically distinct Desert Valley kangaroo mouse occurs in the vicinity of the SEZ and appears to have suitable habitat in the core of the SEZ. We recommend that a thorough survey for this species be conducted in the lands that have suitable habitat characteristics to refine the developable portion of this SEZ so that direct impacts to the species are excluded.

Gold Point SEZ

We are generally supportive of the changes to and proposed action plan for the Gold Point SEZ, including the removal of the intermittent stream corridor that passes partially through the SEZ. The proposed mapping and survey efforts will be particularly important for supporting responsible development within the SEZ. **Provided that BLM completes the proposed action plan prior to development and incorporates our recommendations on the Draft PEIS, we support designation of the proposed Gold Point SEZ as a SEZ in the Final PEIS.**

Millers SEZ

We are generally supportive of the changes to and proposed action plan for Millers SEZ, including the removal of the intermittent stream corridor that passes partially through the SEZ. The proposed mapping and survey efforts will be particularly important for supporting responsible development within the SEZ. Key recommendations from our comments on the Draft PEIS that are not addressed in the Supplement are included below. **Provided that BLM completes the proposed action plan prior to development and incorporates our recommendations below and on the Draft PEIS, we support designation of the proposed Millers SEZ as a SEZ in the Final PEIS.**

- The action plan for the SEZ should include surveys for Tecopa bird's beak, an alkali flat obligate plant that could occur in the southern part of the SEZ or further south, and could be affected by development.

- The action plan for the SEZ should include surveys for Wong's pyrig, a springsnail that could occur south of the SEZ and be indirectly affected by groundwater modification.
- We highlight the importance of Miller's Rest Stop as a stopover point for migratory birds. The BLM should include in the action plan and final design features additional protections to limit impacts to avian resources for Millers SEZ and lands open to variance application near Miller's Rest Stop. Additional analysis completed through the SEZ action plan and resulting additional protective measures may determine that certain technologies are inappropriate for this area because of their particular impacts on avian resources.

IV. Visual resource management in the SEZs.

The Supplement includes restrictions on a number of the Nevada SEZs to protect visual resources or military training routes. We support the BLM addressing these impacts from solar development. However, given the rapidly evolving nature of solar technologies, the BLM should not put in place proscriptive height and technology restrictions for applications in the SEZs. Instead, visual resource impacts should be addressed on a project-by-project basis.

V. Cumulative impacts analysis.

The Supplement states that the cumulative impacts analyses included in the Draft PEIS are currently being updated based on changes in the Supplement, and that updated analyses will be included in the Final PEIS. In order to fully support designation of the SEZs in Nevada, the BLM should ensure completion of robust cumulative impacts analyses and include them in the Final PEIS.

VI. The BLM should closely coordinate the PEIS with other BLM planning efforts including the Las Vegas-Pahrump Resource Management Plan revision.

As noted in the Supplement, in addition to the PEIS, the BLM is also undertaking efforts to identify renewable energy priority areas such as new SEZs in other ongoing planning efforts, including the Las Vegas-Pahrump RMP revision currently underway. (Supplement at p. 2-32) The BLM should take advantage of these opportunities to use more localized planning efforts to identify low-conflict priority areas for solar development, and the agency should ensure that these efforts are closely coordinated with the PEIS.

VII. The BLM should provide a 60 day public comment period on the Final PEIS.

There will be a significant amount of new information in the Final PEIS, including updated SEZ-specific design features, SEZ action plans, cumulative impacts analysis and monitoring and adaptive management protocols. For this reason, the BLM should

provide a 60 day public comment period on the Final PEIS. While we continue to encourage the BLM to complete the PEIS in a thorough and timely manner, it is very important that the public be given the opportunity to provide meaningful input on this new information in order to satisfy the requirements of the National Environmental Policy Act. Further, this comment period should not substantially delay the timeline for completion of the PEIS, because BLM's regulations obligate the BLM to provide a 30-day protest period and a concurrent 60-day governor consistency review of land use plan amendments. 40 C.F.R. §§ 1610.5-2; 1610.5-3. The proposed 60-day public comment period will run during these same timeframes.

Conclusion

We thank DOI and the BLM for proposing an approach to solar energy development on public lands in Nevada that will focus appropriate large-scale solar energy development needed to help alleviate the effects of climate change in low-conflict zones. This approach will help ensure that the natural and cultural resources of Nevada are protected for future generations. We look forward to working with the BLM as the agency finalizes the PEIS over the coming months.

Thank you for your thorough consideration of these comments.

Sincerely,

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Attachments

- Attachment1 – GIS data for Citizens' Proposed Wilderness Areas

Thank you for your comment, Eric Shepard.

The comment tracking number that has been assigned to your comment is SEDDsupp20139.

Comment Date: January 27, 2012 16:28:09PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20139

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January 27, 2012

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Re: Comments of the Colorado River Indian Tribes on the Supplement to the Draft Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwest States

Dear BLM Solar PEIS Project Manager:

The Colorado River Indian Tribes ("CRIT" or "Tribes"), submits the following comments on the Supplement to the Draft Programmatic Environmental Impact Statement ("PEIS") for Solar Energy Development in Six Southwest States ("Solar Energy Development Program"). After reviewing the Supplement, CRIT remains concerned that the PEIS lacks sufficient information about the cultural resources that could be impacted by the alternatives analyzed, and impermissibly defers necessary cultural resource studies and analysis until after project approval. Far from streamlining the permitting process, this cart-before-the-horse approach is sure to create more conflict and discord down the road, when project applications have already been submitted and money invested, and analysis reveals that the selected site within designated Solar Energy Zones ("SEZ") contains significant cultural resources.

As a result, CRIT urges the Bureau not to approve the Solar Energy Development Program and PEIS at this time. A related process is currently underway, by which the Bureau and various Indian tribes in the region, including CRIT, have begun working on a map of the California desert area that could be used to divert projects away from culturally sensitive lands. At the very least, the Bureau should await

the results of that process before designating any federal land in California as suitable for utility-scale solar development.

Finally, while CRIT is not prepared to endorse any of the alternatives analyzed in the PEIS at this time, CRIT joins in the remainder of the comments submitted by the Quechan Tribe. *See* January 27, 2012 letter from Frank R. Jozwiak to BLM Solar PEIS Project Manager re: Comments of the Quechan Indian Tribe.

I. The Solar Energy Development Program and PEIS Should Not Be Finalized Until "Off-Limit" Areas Are Designated under the Desert Renewable Energy Conservation Plan.

In Fall 2011, CRIT participated in two meetings, referred to as "Tribal-Federal Leadership Conference Renewable Energy and Desert Planning Meetings" or "Tribal-Federal Leadership Meetings," to discuss the Desert Renewable Energy Conservation Plan ("DRECP") currently under consideration by the Department of Interior. As we understand it, the area to be governed by the DRECP is also entirely within the area governed by the Solar Energy Development Program analyzed in the PEIS and Supplement. At these meetings, officials from the Department of Interior represented to CRIT and other attendees that the DRECP process would use Tribal input to identify areas in the California desert that are "off-limits" to solar development due to significant cultural resource concerns. *See* Statement of Bob Laidlaw, Senior Policy Analyst Office of the Secretary of the Interior, *Tribal–Federal Leadership Conference, Renewable Energy and Desert Planning Meeting, Plenary Session Notes*, pg. 6, ("This cooperative approach to regional planning can . . . provide a means for tribes to help identify areas for future development which avoid sensitive resources."); Supplement at C-77 (referencing a cultural sensitivity map to be developed as part of the DRECP). According to these officials, Tribal participation in this planning effort would help agencies direct project development to areas with minimum cultural and natural resource conflicts.

Interestingly, the PEIS process was neither incorporated by reference, nor even mentioned at these meetings. Moreover, the Supplement contains a very different explanation of the purpose of the DRECP, asserting that the DRECP process will be used to identify *new* SEZ—i.e., to expand areas open to solar development in California. Page 2-30 to 32. This is decidedly not the message conveyed to Tribes at the Tribal-Federal Leadership Meetings. *See* Statement of Tom Pogacnik, California Deputy State Director, Bureau of Land Management, *Tribal–Federal Leadership Conference, Renewable Energy and Desert Planning Meeting, Plenary Session Notes*, pg. 8, ("[t]he purpose of the DRECP [is] to provide for the renewable energy development in the California Desert in a manner which conserves wildlife habitat and tribal cultural sites."). Thus CRIT requests that the

Bureau clarify the relationship between the DRECP and the PEIS in its response to these comments.

Despite this conflicting information, it is clear that the DRECP process and the PEIS process overlap in California. Given the important resources involved, CRIT believes that the Bureau should not approve the Solar Energy Development Program and PEIS—at least those portions intended to govern development in California—until the portion of the DRECP related to cultural resources has been fully developed and, through that process, more information is provided to the Bureau about the cultural resources at stake. This information is critical for the Bureau to make good decisions about where to encourage utility-scale solar development and where to exclude it. There is no need to defer this analysis until after project approval as the PEIS purports to do. *See* Supplement at C-77 (outlining the numerous steps BLM will take *after* the document is finalized to "reduce the uncertainty about potential impacts on cultural resources" in the Riverside East SEZ). A primary purpose of the PEIS is to identify those areas where utility-scale solar projects can be developed without significant resource conflict. Thus, it is wholly improper to defer identification of sensitive cultural resource areas and sites until after the PEIS is approved and SEZs are selected.

Moreover, designating areas for solar energy development within CRIT's ancestral homelands now, while telling CRIT that the Bureau will consider its input on the very same issues later, severely undermines CRIT's enthusiasm for the DRECP process, and therefore the likelihood that it will be successful. Because CRIT is supportive of BLM's efforts to include Tribes in the DRECP process and to avoid impacts to cultural resources, it does not wish to see the process undermined in this way.

In sum, CRIT believes that the Bureau should defer approval of the Solar Development Energy Program and the PEIS—at least for those areas that will also be governed by the DRECP—until after the DRECP process identifies the "off-limit" areas. At that time, with substantially more information about the nature and likely location of sensitive cultural resources in the area, the Bureau will be better equipped to designate areas that are truly suitable for this type of intense, industrial development.

II. The BLM's Preferred Alternative Does Not Provide Adequate Protections for Cultural Resources or Time for Tribal Consultation.

To date, CRIT has been frustrated with the process used by the Bureau to process individual solar project applications on federal lands near its Reservation. In a rush to approve "green energy solutions" to global warming, the Bureau has fast-tracked projects, deferring cultural resource analysis, mitigation, and, in some cases, meaningful consultation until after project approval. The comment and

consultation periods imposed by the Bureau have not afforded CRIT sufficient time to obtain its own experts to review the technical material accompanying these projects, and the sheer number of projects processed by the Bureau has been overwhelming. The existing process has also been dramatically unsuccessful at avoiding locations with sensitive cultural resources, as demonstrated by the recent discoveries at the Genesis Solar Energy Project. *See* January 19, 2012 letter from Chairman Eldred Enas to John Kalish, Field Office Manager re: Comments on the Proposed (Draft) Geoarcheological Trenching and Controlled Grading Evaluation Plan, Genesis Solar Energy Project, Riverside County, California.

Thus, any new approach to reviewing these solar utility projects must take into consideration the limited resources of the affected tribes, the importance of the cultural resources jeopardized by ill-sited projects, and the time necessary to thoroughly review a project for potential impacts.

Unfortunately, the BLM's preferred alternative, the Modified Solar Energy Development Program Alternative ("Modified Alternative"), incorporates even more fast-paced permitting schedules. According to the Supplement, if an applicant seeks to locate utility-scale solar projects within the SEZs: "the BLM will adhere internally to strict schedules for the completion of environmental reviews for applications in SEZs, with a target for completion of 12 to 18 months." Supplement at 2-23.

This short timeline cannot accommodate the necessary analysis of cultural resource impacts the Supplement itself acknowledges are necessary at a project-specific level (*see* Supplement at 2-18), much less the required government-to-government consultation under Section 106 of the National Historic Preservation Act ("NHPA"). If BLM intends to promise quick review of applications, more studies must be conducted before the agency defines the SEZ boundaries and exclusion areas.

Moreover, the Bureau cannot use these self-imposed timelines to short-circuit the consultation process required by the NHPA. "The consultation requirement is not an empty formality; rather, it 'must recognize the government-to-government relationship between the Federal Government and Indian tribes' and is to be 'conducted in a manner sensitive to the concerns and needs of the Indian tribe.' [36 C.F.R.] § 800.2(c)(2)(ii)(C)." *Quechan Tribe of Fort Yuma Indian Reservation v. U.S. Dept. of Interior*, 755 F.Supp.2d 1104, 1108-09 (S.D. Cal. 2010). Given BLM's recent practice of deferring cultural resource identification and evaluation until after project approval, through improper reliance on Programmatic Agreements, CRIT is concerned that project-specific approvals might occur prior to adequate cultural resource evaluations.

CRIT is skeptical that adequate and meaningful consultation can occur for all projects within the proposed SEZs within this 12-to-18-month timeline. Given the current hold on projects submitted after June 30, 2009, BLM already has a backlog of proposed projects. Once the PEIS is finalized, additional proposals are likely. With limited time and resources, CRIT is unlikely to be able to offer meaningful consultation on many concurrent applications in such a short time period.

The final PEIS should reflect this reality. In addition, BLM should require all project applicants to pay a cultural resources mitigation fee for use by Tribes to offset the costs necessarily incurred in reviewing proposals and potentially hiring experts to review the technical cultural resource analysis provided. Numerous Tribal representatives requested funding to allow for meaningful participation in this process at the Tribal-Federal Leadership Meetings on the DRECP. A mitigation fee would provide a non-governmental source for that funding.

In addition to unrealistic fast-tracking, the Modified Alternative also offers insufficient protections against development outside the SEZs. While providing incentives for utility-scale solar development in certain areas identified as SEZs, this alternative continues to allow development on up to 20 million acres across the six state area through both the variance procedure and the approval of existing applications. Supplement at 2-43. The proposed variance procedure, which varies only slightly from the current project-by-project approach, is not stringent enough to discourage an onslaught of applications for projects outside of SEZs, with corresponding consultation and review requirements. This problem will be exacerbated by allowing Projects proposed prior to 2009 to move forward without meeting the requirements of any final PEIS. The variance procedure is also inconsistent with a primary purpose of the PEIS, which is to identify those areas appropriate for solar development now – not on a case-by-case basis in the future.

III. The Programmatic Agreement Should Require Avoidance of Cultural Resources and Ongoing Consultation.

On Thursday, January 26, 2012, CRIT was in contact with BLM John Kalish, Field Office Manager, South Coast Field Office, to obtain a copy of the Programmatic Agreement, but was unable to obtain a copy of the document prior to completing this comment letter. As such, the following comments are based on information contained in the PEIS and the Tribes' experience with previous project-level programmatic agreements. CRIT therefore requests an extension of time to provide its comments on the Programmatic Agreement.

Any programmatic agreement proposed by the Bureau must place the strongest possible priority on avoidance of cultural resources and be fully consistent with Section 106 of the NHPA and its implementing regulations. Proposed projects should be designed to avoid all cultural resources, through siting decisions and

choice of technology. Further, if unanticipated discoveries are made during development of the proposed project, project development should halt until all potentially interested tribes are consulted. Before developing a plan to excavate and record these discoveries, the Bureau must attempt to avoid them, and should explicitly retain authority in any approval documents to require post-approval changes to projects to do so.

To be clear, CRIT does not believe that "excavation" and "data recovery" mitigate the disturbance of their ancestors remains, funerary objects, or other sacred and important artifacts. Thus, every possible effort must be made to avoid such resources. Proper investigation upfront, combined with modifications of project design or location, should be considered prior to a default "mitigation" strategy of data recovery. This approach is also more consistent with the California Environmental Quality Act, which will likely apply to all projects developed in California and which requires resource impacts to be mitigated below the level of significance.

The Supplement also states that "the BLM will invite Tribes to participate in site-specific proposals within SEZs." Supplement at 2-23. Participation, however, is not the same thing as consultation. The Programmatic Agreement must explain how the BLM is going to engage in consultation with Tribes under Section 106 of the NHPA for all individual proposals within the SEZs.

IV. Ethnographic Studies Should Be Completed For Arizona and California.

The Supplement notes that ethnographic overviews have been completed for the six tribes in the Great Basin. Supplement at 2-23. The Supplement continues that:

> "BLM will contact all other Tribes with cultural and/or historical ties to the SEZs and lands available for development to explore if they share similar concerns or issues to those revealed in the study. Field offices in California and Nevada will consult with those Tribes who provided written comments on the Draft Solar PEIS to explain how their concerns will be taken into account and how Tribal consultation will continue under project-specific applications. A written explanation for how the BLM utilized Tribal input in determining Final Solar PEIS decisions will be mailed to all Tribes with the signing of the ROD."

Id. Ethnographic studies should be completed for tribes in the remaining areas analyzed in the PEIS in order to adequately understand the potential cultural resources impacts created by the proposed project. In addition, the consultation

referenced for the CA and NV field offices should not, and legally cannot, be limited to only those Tribes that provided written comments on the Draft Solar PEIS.

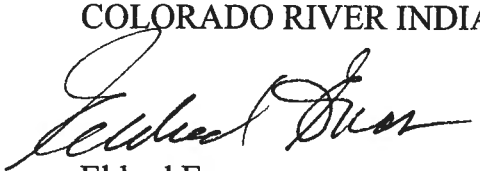
V. The Identification of New SEZs Must Include Early Consultation with Tribes.

The Supplement states that "The BLM welcomes . . . Tribes . . . to participate in [] efforts to identify new SEZs." Supplement at 2-28. Given that inclusion of land within an SEZ amounts to an affirmative statement by BLM that these areas are well-suited for development (including as to cultural resources), the development of new SEZs must include meaningful consultation with Tribes. While Appendix D recognizes that consultation must take place prior to issuing the record of decision (Supplement at D-7), consultation must actually occur much earlier in the process to be meaningful. *See Quechan Tribe of Fort Yuma Indian Reservation*, 755 F.Supp.2d at 1119; *see also* Department of the Interior Policy on Consultation with Indian Tribes (Dec. 1, 2011) (requiring BLM to consult with affected Indian tribes in the "Initial Planning Stage" and "as early as possible.").

Moreover, CRIT does not believe that the Bureau engaged in adequate consultation for the Solar Energy Development Program analyzed in the PEIS. As documented in Appendix K to the PEIS, CRIT received two letters regarding preparation of the PEIS. The first, sent June 24, 2008, invites CRIT to participate as a "cooperating agency." PEIS at K-52 to 54. While the letter mentions that "government-to-government consultation will continue" (*id.* at K-53), the letter does not provide any specifics about that process. The second letter, sent July 1, 2009, offers only a brief invitation: "Please contact us . . . if you would like to enter into government-to-government consultation." PEIS at K-58. For a project with such far-reaching consequences and potential impacts to cultural resources, more than simply notifying the Tribes of the proposed program's existence was required.

Very truly yours,

COLORADO RIVER INDIAN TRIBES



Eldred Enas
Tribal Council Chairman

cc: Tribal Council
Ken Salazar, Secretary of the Interior
Bob Abbey, Director, Bureau of Land Management

Larry Echo Hawk, Assistant Secretary for Indian Affairs
James G. Kenna, California State Director, Bureau of Land Management
John Kalish, Field Office Manager, Bureau of Land Management
Janice Staudte, Superintendent, Bureau of Indian Affairs
Eric Shepard, Attorney General
Lisa Swick, Acting Museum Director
Ron Escobar, Tribal Secretary/Treasurer, Chemehuevi Tribe
Linda Otero, Tribal Council, Fort Mojave Indian Tribe
John Bathke, Historic Preservation Officer, Quechan Indian Nation
H. Jill McCormick, Cultural Resources Manager, Cocopah Indian Tribe
Winter King, Shute, Mihaly & Weinberger, LLP

Renewable Energy & Desert Planning Meeting

Spa Hotel and Conference Center

Palm Springs, California

September 21-22, 2011

PLENARY SESSION NOTES

Prepared

By

Dr. Stephanie Damadio, Senior Program Analyst

Tribal Federal Leadership Conference Coordinator

Bureau of Land Management

October 12, 2011

Introduction

California desert area tribal leaders expressed a desire to meet with senior management of Department of the Interior (DOI) agencies to discuss their concerns and interests in the California Desert Conservation Area Plan (CDCAP), currently being amended, and the Desert Renewable Energy Conservation Plan (DRECP), currently being developed. Tribal leaders asked to be provided an opportunity to have input into these and other efforts to guide land management priorities for the coming years. In response to these requests, DOI invited 40 desert area federally recognized tribes to an initial meeting, the *Tribal-Federal Leadership Conference, Renewable Energy and Desert Planning Meeting* (*Meeting*), September 21-22, 2011 in Palm Springs, California. This meeting was the first step in establishing a more effective and efficient process for tribes to participate and inform land use planning, resource protection and future renewable energy development.

The *Meeting* was not a "Listening Session" or "Consultation" on a federal project or program but rather, provided an initial forum for tribal representatives to have discussions with federal executives regarding a comprehensive planning effort by DOI in the California Desert. Tribal participation at this and subsequent meetings over the next year and a half will inform land and natural resource management, protection and the development of renewable energy in cooperation and coordination with the region's tribal governments. The goal of this planning effort is NOT to review/approve specific renewable energy projects but to produce a tool to guide the planning of resource management in the desert.

The *Meeting* consisted of a description of proposed planning efforts by senior federal executives from the Bureau of Land Management, Fish and Wildlife Service, Pacific Regional Solicitor's Office, Department of the Interior's Office of Policy Analysis, Department of Interiors Office of Indian Affairs and the Counselor to the Secretary of the Interior. The federal executives presented a discussion of opportunities for tribal participation which were followed by tribal presentations addressing top tribal priorities and issues such as reservation development, resource concerns and priorities for federal/tribal coordination. A breakout session was conducted on the morning of September 22, 2011, providing an opportunity for more focused discussion by federal and tribal participants of the issues raised in the previous day's meeting.

At the conclusion of the *Meeting*, numerous commitments were made to California Desert Tribes by DOI leadership. Those commitments included:

1. A letter to California desert region's federally recognized tribes outlining commitments (Sent September 27, 2011);
2. Copies of the proceedings from the September 21, 2011 Plenary Session;
3. Bureau of Land Management (BLM) will schedule a November follow-up meeting with tribal leaders to discuss progress and a path forward;
4. BLM management, not consultants, to meet with individual tribes in the next 30-45 days; and,
5. BLM DRECP Project Manager Vicki Campbell meeting with tribal technical staff and planners.

This document, *Tribal-Federal Leadership Conference, Renewable Energy and Desert Planning Meeting, Plenary Session Notes,* fulfills commitment 2 and is being distributed to the concerned federally recognized California Desert area tribes.

Tribal-Federal Leadership Conference

Plenary Session Notes

Renewable Energy & Desert Planning Meeting at the Spa Hotel and Conference Center Palm Springs, CA

Wednesday, September 21, 2011

9:00 - 9:30 A.M. Sign In and Continental Breakfast

9:30 A.M. Plenary Session Convened

Welcoming statements and a prayer were made by meeting Facilitator **Joseph Myers, Director, National Indian Justice Center.** Mr. Myers reminded all in attendance this was not a Listening Conference but an effort to seek advice from tribes collectively to create a participatory planning process. He reiterated that consulting with tribal governments should be done on an individual basis.

Chairman Richard Milanovich, Agua Caliente Band of Cahuilla Indians welcomed everyone to this two day conference. He reminded the participants to speak up to the federal agencies present. **Bob Laidlaw, Senior Policy Analyst, Office of the Secretary of the Interior** was thanked for facilitating this opportunity for federal agency leaders to listen to tribes and their priorities for resource management. Mr. Milanovich urged all parties to give this cooperative process time to work, since the federal participants were showing a strong willingness to listen to tribes and their positions. He asked everyone to think outside the box and to prioritize tribal needs. He recalled the numerous historic times that Federal, State and the Agua Caliente Tribal government partnered to create laws such as the one that created the Santa Rosa and San Jacinto Mountains National Monument in Palm Springs. Mr. Milanovich voiced his concern regarding the federal tax policy (Tax Code 26 USC 168) which negatively affects tribes.

Facilitator Myers asked **Counselor to the Secretary of the Interior, Steven Black**, and Mr. Laidlaw to introduce the attendees from the various federal agencies.

Mr. Laidlaw noted that there has never before been a landscape level planning effort with tribes that has included as many federal agencies. The federal participants present included:

Department of the Interior (DOI)
Steven Black, Councilor to the Secretary
Joel Clement, Director, Office of Policy Analysis
Bob Laidlaw, Senior Policy Analyst
Anthony Walters, External Affairs Director, Assistant Secretary for Indian Affairs

Office of the Solicitor, (SOL) Pacific Southwest Region
Daniel Shillito, Regional Solicitor
Clementine Josephson, Deputy Regional Solicitor
Erica Niebauer, Attorney

Bureau of Land Management-California (BLM)
James Kenna, State Director,
Thomas Pogacnik, Deputy State Director
Vicki Campbell, Project Director, Desert Renewable Energy Conservation Plan (DRECP)
Stephanie Damadio, Senior Program Analyst
Teri Raml, California Desert District (CDD) Manager
Mark Purdy, CDD Tribal Coordinator

Fish and Wildlife Service (FWS)
Alexandra Pitts, Regional Deputy Director, Sacramento
Michael Fris, Assistant Regional Director
Ken Corey,

Bureau of Indian Affairs (BIA)
Mike Smith, Deputy Director, Tribal Operations
Roger Knight, Office of Indian Energy and Economic Development
Kevin Bearquiver, Deputy Pacific Regional Director

Mr. Black pointed out the senior level of leadership that was present from BLM, FWS and BIA, that they are committed to this effort, and thanked them for starting this dialogue on economic development opportunities, the protection of endangered species and other natural and cultural resources. He noted the Desert Renewal Energy Conservation Plan (DRECP) is a comprehensive desert plan that will affect the entire California desert region over the next century. He remarked that it is important to participate now, given that the land use and conservation area plans were last substantially amended in the 1980s. Mr. Black urged those present to voice their concerns related to water, cultural resources or other issues they want federal agencies to be aware of in renewable energy planning. Mr. Black spoke on behalf of the Secretary of Interior, Ken Salazar, who he said is a champion of tribal concerns and who takes his obligation to tribes seriously. Given that Secretary Salazar comes from a rural community in the San Luis Valley, he understands most tribal situations and tries to fulfill his obligations with appropriate staff appointments. Mr. Black reminded all that the agencies present want to meet on a government-to-government basis and are committed to a dialogue. He added that, even though renewable energy was a catalyst for this dialog with tribes, the current site planning maps do not depict renewable energy development on tribal lands.

Mr. James Kenna, State Director, BLM voiced his honor to be present at this meeting and added that the relationships in this initiative would be both on the leadership level in addition to working individually tribe by tribe.

Mr. Laidlaw added that the input received would guide renewable energy planning, land use and protection in the desert for the next 20 years and would include the issues and priorities of the different tribes and their reservations. Mr. Laidlaw emphasized that this large regional planning effort was a significant departure from traditional project-by-project coordination and consultation with Tribes. Mr. Laidlaw further emphasized that participation in this planning effort could help agencies to direct project development to areas with a minimum of cultural and natural resource conflicts and provide the tribes an opportunity to shape future energy and desert land management planning. Comparing the current effort to the original California Desert Plan, Mr. Laidlaw pointed out that the guidelines of the current 1980 Land Use Plan (Plan) anticipate, and provide for, revisions and amendments if priorities or management conditions change: renewable energy development represents such a change. This conference is to introduce the agencies and the process by which planning outreach to the Tribes is being undertaken. Tribal consultation in this planning effort represents a far more affirmative and comprehensive paradigm for government-to-government collaboration than the project-by-project approach, and introduces a mechanism for working with tribes on a broad landscape (regional) level. This cooperative approach to regional planning can reduce the coordination and consultation burden on tribes associated with project-by-project consultation and provide a means for tribes to help identify areas for future development which avoid sensitive resources. Tribal input in this process also offers a means to identify tribal interest in development of renewable energy on their lands.

Facilitator Myers asked the tribal representatives that were present to introduce themselves. Tribal representatives present included:

Agua Caliente Band of Cahuilla Indians
Savana Saubel, Council Member
Tom Davis, Chief Planning and Development Officer
Todd Hooks, Economic Development Director
Margaret Park, Director of Planning and Natural Resources
Mark Dansby, Economic Development Project Manager

Cahuilla Band of Mission Indians of the Cahuilla Reservation
Brian Bahorie, Environmental Director

Colorado River Indian Tribes of the Colorado River Indian Reservation
Eric Shepard, Attorney General
Mervig Scott, Tribal Council Secretary
Doug Bonamici, Legal Counsel

Cocopah Tribe
Alan Hatcher, Tribal Member

Fort Independence Indian Community of Paiute Indians of the Fort Independence Reservation
Jeremiah Joseph, Water Quality Manager

Fort Mojave Indian Tribe
Linda Otero, Council Member
Colleen Garcia, Council Member

Manzanita Band of Diegueno Mission Indians of the Manzanita Reservation
Jeff Riolo, Representative

Quechan Tribe of the Fort Yuma Indian Reservation
Lorey Cachora, Consultant

San Manuel Band of Serrano Mission Indians of the San Manuel Reservation
Anthony Madrigal, Cultural Resources
Torres-Martinez Desert Cahuilla Indians
Raymond Torres, Vice Chairman
Ben Scoville, Planning/GIS

Viejas (Baron Long) Group of Capitan Grande Band of Mission Indians of the Viejas Reservation
Kimberly Metter, General Counsel

Mr. Pogacnik, Deputy State Director, BLM, introduced the DRECP which involves the creation of a landscape level conservation plan to protect resources in the California Desert and facilitate the development of renewable energy projects. He explained he had both an opportunity and a challenge in conserving desert resources for the long term while advancing renewable energy resources on a project-by-project basis. Mr. Pogacnik added that the main question was how to illustrate the juxtaposition of resource values, opportunities and sensitivity on one map.

He said that five years ago the energy industry was asked for input and applications where they thought the best locations were for renewable energy projects. The federal government received over 100 responses. Now, with this new beginning of direct dialogue with tribes, the intent is for tribal leaders to provide information to the federal agencies regarding the best areas to place projects as well as what areas should be avoided. Mr. Pogacnik added that there was the potential of a large commitment of land in Southern California for renewable energy development. These lands could include areas that are sacred to tribal peoples, therefore, tribal input was extremely important if this process was to be able to identify and protect such values. For these reasons, federal/tribal planning partnerships needed to be created. With this goal in

mind, government-to-government consultations for planning and resource identification will be scheduled in the next 45 days or so to assure the DRECP is informed by tribal participation.

Mr. Pogacnik mentioned the challenges that renewable energy projects have had on a project-by-project basis and added that the desire through this planning process was to avoid future conflicts wherever possible. He listed a number of questions that the different agencies had for tribes such as; what is the right approach, what are your tribe's specific needs, do you need Geographic Information System (GIS) assistance, etc. He asked tribal leaders to identify the necessary tools and resources they need to successfully participate in the planning process. Mr. Pogacnik added that the purpose of the DRECP was to provide for the renewable energy development in the California Desert in a manner which conserves wildlife habitat and tribal cultural sites.

Facilitator Myers asked the panel and Mr. Pogacnik their opinion of the Bill (proposed legislation) introduced by Senator Dianne Feinstein calling for a monument that affects Southern California tribes.

Mr. Pogacnik said the Bill was in its initial procedural stages and deals with resource conservation. He noted, as we move forward in dealing with issues it will be important to obtain input from tribes to advance the conversation. He reminded the audience of the Agency's commitment to government-to-government meetings that will be scheduled in approximately 45 days. He added that Tribal Administration offices would be contacted to coordinate scheduling of these meetings in a formal and confidential forum with each individual Tribe.

Vicki Campbell, BLM Project Director, DRECP presented a power point on DRECP. She explained that this planning effort is unprecedented in its scale and commitment to outreach and collaboration. The Plan includes six counties or an approximately 22.5 million acre study area of which about 10 million acres are managed by BLM. This cooperative effort is mainly being conducted by the BLM, FWS, California Energy Commission and the California Department of Fish and Game. The DRECP's purpose is to advance state and federal natural resource protection goals in the Southern California desert regions while also facilitating the timely and streamlined permitting of renewable energy projects under applicable State and Federal laws.

The following handouts were made available: Map of the DRECP Planning Area, Map of Federal Lands Overview in the DRECP Planning Area, List of Key Timelines, and Contact and Internet Information Sources.

Maps were provided depicting the currently-proposed area of the DRECP. Ms. Campbell explained that some areas, such as the Coachella Valley located in Riverside County, were removed at the request of specific local authorities in this case, the Coachella Valley Association of Governments, to avoid conflicts and duplication in areas with existing local planning efforts. Among the important potential effects and consequences of the DRECP are amendments to agency policies and management practices such as the BLM California Desert Conservation

Area Plan (CDCA), the BLM Caliente/Bakersfield, Bishop, and Eastern San Diego County Resource Management Plans, Endangered Species Act, Natural Communities Conservation Planning Act Compliance, National Environmental Protection Act (NEPA) and California Environmental Quality Act (CEQA), to name a few. The DRECP will also help streamline more effective permitting for renewable energy projects by the federal and state government.

The DRECP area will address proposed energy activities which include solar (photovoltaic and thermal), wind, geothermal, and transmission. The proposed area is habitat to plants and animals and could potentially affect 650 species. Ms. Campbell added that biological reserves can be enhanced by adding information on tribal-cultural values in the desert. As a planning effort, NEPA and CEQA will also be addressed and satisfied as a component of the process.

It was pointed out that in developing the preliminary conservation strategy of the DRECP the focus has been on important biological areas and federal and non-federal land ownership. The different areas of resource sensitivity in the preliminary map were pointed out. Animal/plant and resource use/protection characteristics, such as the desert tortoise, desert bighorn sheep, condor policy and off road vehicle/recreational areas, were discussed. It was explained that emphasis was given to these areas but these areas may change or expand with input from tribes on other cultural and biological areas and tribal cultural concerns. This information from tribes, once it is received, can be employed to create a "biological, ecosystem, and cultural reserve system map."

A proposed timeline was presented. It called for drafts of the Environmental Impact Statement/Environmental Impact Report alternatives for late November 2011, with a Record of Decision and permit decisions by January 2013.

Those present were reminded of the importance tribal input would have on the DRECP. The various websites available for information such as www.drecp.org were presented.

Mr. Todd Hooks, Economic Development Director, Agua Caliente Band of Cahuilla Indians asked if there were a preliminary number of acres of land needed for renewable energy projects.

Mr. Pogacnik's response was, yes, approximately 500,000 acres, but given that this figure is an estimate from the latest information available, additional analysis needs to be completed.

Mr. Tom Davis, Chief of Planning, Agua Caliente Band of Cahuilla Indians asked if wildlife compliance would be affected. Mr. Pogacnik responded that most likely there would be various land use plan amendments.

Mr. Anthony Madrigal, San Manuel Band of Serrano Mission Indians of the San Manuel Reservation voiced his concerns about providing information on specific traditional and sacred sites. Mr. Madrigal felt the timeline presented was very aggressive and the deadlines were shortly approaching. His concern was that some tribes do not have the resources (budget, people, time) for an initiative like this and a special workgroup could be useful. In addition, it is

important to note that the gathering and sharing of the information will take time. Unfortunately, the information is required rapidly because of the deadlines imposed. The areas the agencies would like to know about for the DRECP are the special areas tribal people value because these are part of tribal culture. He suggested the first priority should be to set up a process to have a real dialogue with tribes, even if that means federal agency leaders need to sit down with each Tribe.

Mr. Pogacnik assured Mr. Madrigal that one of the first follow-ups from this meeting will be the scheduling of government-to-government meetings with individual tribes and agency managers.

Ms. Campbell clarified that the information provided to the DRECP group should be very broad and general - just enough to point out the areas to be able to consolidate the information into a document that can be shared with the public. Additionally, if tribes request, agencies will work with them to provide GIS and planning assistance.

Mr. Riolo, Manzanita Band of Diegueno Mission Indians of the Manzanita Reservation asked what culturally sensitive areas were included in the DRECP map presented.

Ms. Campbell said it was only minimal since Mr. Madrigal, who had some input as a public member of the DRECP group, could only speak to his, the San Manuel Tribe's, culturally sensitive areas. Ms. Campbell added that most of the information mapped is biological, but the purpose of this meeting was to request tribal input to integrate the ecosystems already in data systems with general information from tribes on tribal culturally sensitive areas. The goal of this outreach effort was to significantly increase the opportunity for tribes to participate in this regional planning effort.

Mr. Kenna asked for thoughts on the work group that was suggested by Mr. Madrigal.

Mr. Madrigal answered that it should be a group committed to the project in addition to government-to-government consultations. He added that each Tribe has to be asked how they wish to be involved in this process, since each Tribe might want to have/be capable of different levels of participation. He also noted tribes do not all have resources and for the most part, do not have large tribal cultural resources departments. Overall, it should be an assembled working-group to help tribes participate in the DRECP so they can bring information to the table. It should be a working group that continues throughout the process.

Mr. Scott, Tribal Council Secretary, Colorado River Indian Tribes of the Colorado River Indian Reservation asked if there was a plan covering when a company goes out of business or leaves the project halfway. Is there a clean-up plan, for example?

Mr. Pogacnik described the performance bonding process, clarifying that under this requirement the taxpayers do not have to pay for the clean-up.

Ms. Campbell added that in public lands there is also a bonding process that requires the company to clean up and restore a site and added that this concept could be added to any project.

Mr. Black emphasized that the natural and cultural resource information for California Desert planning ultimately needs to be in GIS format so it can be mapped and considered. He asked if Mr. Madrigal would like to help create the suggested workgroup. Mr. Black's understanding was this group would be made up of tribal and federal individuals working together to a common goal.

There was a general discussion by the group at large in which it was emphasized that this dialog between agencies and tribes in the desert was expected to cover a wide range of issues and potential resource impacts. Some of the issues intersect and articulate with habitat, traditional values, reservation renewable energy development opportunities and groundwater issues. The DRECP was emphasized as offering a unique opportunity for coordinating these discussions as tribal input to the DRECP could serve as a starting point for subsequent discussions between BLM and individual tribes.

Meeting Break for Lunch 12:30 – 1:30 P.M.

Reconvened: 1:32 P.M.

Mr. Daniel Shillito, Regional Solicitor, as follow up to Chairman Milanovich's concerns regarding Tax Code 26 USC 168, that will end this year will negatively affect tribes if it is not extended in Congress. There are current provisions where in one can have property with 30 or 60 year accelerated depression. Tribes can ask for parity by requesting the same treatment under law as utilitys with regards to tax credits.

Mr. Anthony Walters, External Affairs Director for Assistant Secretary for Indian Affairs returned the conversation to the DRECP, noting the advantage of tribes being involved early before the Plan is completed as DRECP project members do not have to react to the input once the document is published. It is important for tribes to get involved early in this process to have more input.

Mr. Laidlaw reiterated that the federal representatives needed to hear from tribes as to how best to engage them in DRECP and related planning discussions over the next year and a half to assure tribal concerns are identified and addressed. He pointed out the federal representatives present provided the opportunity for open communication with the different agencies of the government. He noted that breakout rooms were reserved to continue specific discussion as needed.

Ms. Linda Otero, Council Member, Fort Mojave Indian Tribe thanked Chairman Milanovich and the Agua Caliente Tribe for hosting this meeting. She added that she is the Director of the Ahamakav Cultural Society in Arizona and it is a driving force of what she does. She wants to have in the record that:

Tribal input is important in the DRECP and should be strongly considered in the decision making process.

Tribes have worked many hours and weeks on the topic of solar energy because they too believe it is important.

Tribal concerns should be taken to the highest levels and should be heard in Washington, DC.

Her "River People" Tribe presented an official letter to President Obama stating their concerns of the fast-track projects. The Tribe is making a proactive effort; it does not want to be reactive.

The area included in the map shows the ancestral lands of tribal people. Many of the people of the lower Colorado River are included in this area. She noted that the River People thrived throughout time and future generations will move into the future integrated with the environment.

The land has layers of sites of people who have been here centuries. What today looks like a stream used to be a river that flourishes; this is a connection to the Tribal River People.

Tribal people teach the young ones so they will carry on the ways of their culture.

Every act of Congress affects tribes. Historically, tribal input has been missing but times are changing. She added that she has stood in the record on Washington, DC and her Tribe will take every opportunity to be heard. The intent today is to move forward.

Tribes are working with the Western Regional Partnership to take back the management responsibility; heritage resources are limited so it is managed to the best of the Tribe's abilities.

Information has to move up the Agency's chain of command to make resources necessary available to those staff members at bottom.

The government needs to acknowledge that the environment needs to recover from the damage. Policy will affect tribes into the years beyond. Efforts should be stepped up so wilderness zones are reviewed and protected.

The Fort Mojave Indian Tribe at one point in time was a Nation; the Tribe is both water and land. Actions by the US Government and the Tribe should be done with respect.

There are layers of actions that need to be reviewed to be able to show on a map. Some of the wilderness zones are mountainous regions.

There have been meetings before and information has been shared; therefore, the federal agencies do not need to start at "square one." They can draw information from what was said before.

She keeps hearing of the renewable energy projects moving fast but, "thriving is moving in balance with nature." Her people are for renewable energy and they understand that this is moving fast because of the economics and the funding behind it. She asked that those present be open minded to see that not just a large land base is being disrupted. She presented a picture of one project showing disruption. She asked how the historical

damage will be addressed, it is not just about monitoring it is about safeguarding the environment.

Of critical interest is to have the protection of places that are non-renewable.

Water is another important aspect. It needs to be understood that during construction water is needed. Water is being siphoned out by projects with water wells. Water is a heavy topic for Southern Tribes and it needs to be acknowledged. There is water that is being siphoned out from the springs that feed into the Colorado River.

Projects that involve both state and federal agencies do not always work smoothly, but hopefully, tribes have more input so what is important to them gets included in the implementation.

Ms. Otero ended her statements by voicing her disappointment that Secretary Salazar toured her tribal area by air, but she did not receive answers to her letters. It seemed, to her, that her tribal concerns were not taken seriously.

Mr. Laidlaw acknowledged the difficulty of communicating with the federal, state, and local agencies and suggested that this effort led by BLM could help tribes be included in broader conversations involving desert resources.

Mr. Pogacnik, emphasized that in this process, the next step would be to have government-to-government consultations and asked those present for their partnership and help in getting guidance from their tribes as how to best accomplish these and subsequent meetings.

Erika Niebauer, Associate Attorney, Regional Solicitor's Office, pointed out that there are tools that could be used by the Bureau and there are areas that could be identified by the sharing of information process.

Ms. Otero reminded the group that, historically, information shared with government agencies has been used against tribes and tribal resources continue to be erased.

Ms. Campbell added that the agencies want to hear from tribes. Now, knowing the tribal interest of restoring damaged areas, it could lead to work to have money focused on a reserve system.

Ms. Otero added that some areas have elements that simply cannot be restored because some things are gone.

Mr. Madrigal voiced his concerns of long-term issues that should be addressed with long-term planning and asked for the agencies' commitment to this. Tribes can provide information on trails, etc., but tribes need to be taught the planning procedures in order to be of better assistance. He reiterated that a strong commitment with resources will be necessary for a long lasting relationship to be created.

Mr. Lorey Cachora, Consultant and Government Member, Quechan Tribe of the Fort Yuma Indian Reservation made a statement that included the following main points:

His Tribe practices its own culture, administration, elections, etc., but wants to have a dialogue. The local area tribes have been separated by differences such as fishing, planting and harvesting, but all the people produced horticulture because they grow from the sand.

Spirit Mountain in Laughlin, NV is a sacred place. How do tribes comply with the request for information?

He is concerned with the sudden urge with renewable energy and the fact that rules and regulations that have been around and asked be obeyed for years are now being overruled.

He was saddened by the fast pace of "going green" (renewable resource projects) because it was "disturbing to see." Given his personal and historical experience, there is some guidance that should be followed.

The concern is that when rules are changed, he expects the federal and state agencies to follow these rules just as the tribal people follow them.

The fast approaching deadline of the DRECP is of great concern, given that there is so much about the River Corridor that needs to be explained from rock alignments, cliffs, pictographs, etc. All are of great importance. The ancestors went all the way to South America and back.

Elders keep hidden what they know so it will take time to gather the information, especially with an area that goes North, South, East, and West of the River Corridor. Science and scientists have been a danger with their desire to collect artifacts; they have cleared the desert.

It will be hard to map sacred places because artifacts are no longer there.

Mr. Frank Brown, Tribal Member of Viejas (Baron Long) Group of Capitan Grande Band of Mission Indians of the Viejas Reservation thanked all for letting him speak. He made a statement that included the following main points:

In San Diego County the Tribe is experiencing miscommunication with the local BLM and it seems they are not cooperative.

Mr. Brown is the Chairman of the *Inter-Tribal Cultural Council*, of the 13 Kumeyaay Nations. He represents the majority with respect to culture. The Kumeyaay have been around for 10,000 years. It is impossible to present a report in this short notice.

Mr. Brown asked if the report with the information requested is presented, will the lands be protected.

Ms. Campbell informed that the stakeholder's group started a meeting one and half years ago and added that this is an ongoing plan of the overview of DRECP. The cultural aspects of the area are unknown; therefore, the general information is being requested.

Mr. Brown continued his remarks, including the following main points:

At a project in his area, the BLM representative was concerned about dinosaur bones and biology more than tribal ancestors. Mr. Brown is a monitor for the Ocotillo Express Wind Project but archeologists working on the site never listened to him nor were his words in the official record. It is disrespectful for workers on the site to mainly talk about dinosaurs and birds, but not care about culture. In one particular project there were six sites with pictographs and hieroglyphs, but the focus was on animals.

He asked if the information given for the DRECP would be implemented and if it would affect current/on-going projects.

Mr. Black explained that everyone is trying to take advantage of the near-term opportunities and also move the President's agenda forward. With respect to specific projects' application and compliance under Section 106, all of the federal agencies are committed to doing better under each specific circumstance. The desire is to have a foundation as soon as possible to direct industry to correct locations that preserve the integrated system.

Mr. Pogacnik explained that for the most part everyone has been on this project-by-project application-driven world and now the agencies are trying to create some capacity for individual communication with tribes that will stay open over time.

Mr. Brown asked if the timeline could be pushed back given the tribal concerns of disturbance of cultural sites.

Ms. Campbell, replied that the DRECP timeline was what she had presented but the commitment of agencies to work with Tribes was on-going.

Mr. Laidlaw talked about the opportunity of working as cooperating governments and asked tribes to consider this a starting point which has the opportunity to change the relationship with these agencies. He added that agencies need to talk more broadly with tribes about their programs so tribes can share their concerns as well as identify opportunities. He and others hope the outcome is a change in the way business is done. The agencies wish to find out what works best for each individual Tribe.

A question was again raised about the Monument Bill that Senator Feinstein is working on.

Mr. Black responded that the Department has worked with the Senator as related to boundaries, but it is important to focus on the purposes of the Bill which is to identify areas of conservation.

Mr. Brown asked those federal agencies present to contact the local tribes to identify the cultural landscapes and territory which is the most important to them.

Ben Scoville, Planning/GIS for the Torres-Martinez Desert Cahuilla Indians made a statement that included the following main points:

The Tribes' cultural resources are very important as well as renewable energy.

The Tribe is lacking information and resources to do surveys with cultural monitors to identify the land. It is best to identify sites early so projects work smoothly.
The Tribe has tremendous potential for solar and geothermal projects; but the resources are the difficult issue.

Mr. Scoville asked if there was a way for tribes to obtain resources for strategic development. Is there a possibility to have preference on developing projects in a culturally sensitive and correct way and can tribes be participants in the renewable action team as a stakeholder? Mr. Scoville also asked if there is any way to ensure that renewable energy projects will not negatively affect the opportunities on tribal lands.

On a separate issue, Mr. Scoville pointed out that Torres-Martinez has not been able to benefit from their Settlement Act. One third of the reservation is underwater in the Salton Sea and fee-to-trust and land exchanges are something the Tribe would like to look into and have the broader planning process consider.

Mr. Walters directed Mr. Scoville to the Office of Indian Energy and Economic Development with the BIA which works with tribes on issues of competitive grants and does studies on possible projects. He urged tribes to also provide input as to where they would like to have future possible renewable energy projects in their area.

Mr. Black emphasized the need for all of the agencies to follow up with those present and added that meetings are held monthly with a large group of interested parties called Renewable Energy Action Teams. An invitation was extended for tribal representatives to attend those meetings. Additional information was provided indicating some meetings are posted online and others have conference lines for participants to call in.

Facilitator Myers, spoke of a Bill that defines tribes to be as public entities and inquired how that might affect tribal outreach and coordination. .

Ms. Campbell indicated she would discuss that issue and also noted there are various meetings, some weekly, some monthly, and asked that those who wanted to participate contact her for information. She added that DRECP's title has a focus on conservation, but it is equally important to hear where tribes would like to see development occur.

Mr. Shillito voiced an idea to get money for tribes that need resources by earmarking money for particular areas so the funds could be made available to assist tribes in more effective planning participation.

Mr. Cachora made a statement that included the following main points:

If agencies have DRECP meetings "all the time," why is it that the tribes are just now learning about them even though three or four months ago there was an energy project moving forward without tribal input or tribal consultation? The Tribe was told that survey was completed, but without tribal input. How much can be known of the Tribe.

Mr. Cachora presented the example of one solar project in which culturally significant vegetation was cut down without tribal input; even though "artifacts grow within it". The land of this project was also "arbitrarily fenced". All this was done just to move the project forward at the California Energy Commission's request. This is just an example of government-to-government misunderstanding.

The words "government-to-government," communication are not always understood the same way by the government and the tribes. Working with consultants or sending letters that ask for a signature at the bottom is not tribal consultation.

There is mistrust for federal agency requests for communication.

Looking at some maps, it seems like a renewable energy land-grab. How many of the projects will serve California's interest and how many are just for money to sell electricity elsewhere?

This fast-paced stimulus program is not a way to deal with employment issues.

Mr. Kenna answered that the map (of existing projects) is random or may look like a "land-grab" because industry told us where they wanted to go. Now, with the DRECP, the government will tell them where they can go. The information gathered will help decision making in the application process. There were over 100 applications, most were from speculators who were rejected; this too frustrated the federal government.

Ms. Campbell spoke of the difficulty in knowing how many projects were needed because of the many aspects and the speculations of energy needs for the next 50 years. Some educated guesses are that 65% of the need of electricity production will come from the desert or about 1.5 million acres.

Mr. Black directed those present to the BIA with regards to the eligibility for loans and reminded the group that there might also be tax credits or other opportunities for tribes. It is also important for those tribes interested in participating in renewable energy development share that interest with the planning team. For this reason, as well as sensitive resource identification, tribal input was essential to moving the DRECP forward.

Mr. Cachora asked if there was some tool to know what was included in the tentative map. Mr. Kenna responded that information could be posted on the project's webpage.

Mr. Merving Scott, Tribal Council Secretary, Colorado River Indian Tribes (CRIT) made a statement that included the following main points:

Tribes need to know how the information provided by tribes will be protected since these are sacred locations.

He is concerned with the government's lack of ability in protecting sites. He added that some people steal, deface, and break artifacts.

The timeline is also of concern since elders are afraid of sharing the information. It is not as simple as saying "give me your history."

Mr. Laidlaw mentioned that while oral-form copyright agreements have been executed in the past to protect specific conversations, the information being requested for the DRECP is at a very general "landscape" level and should be able to avoid many confidentiality issues. The initial goal of this planning dialog is to assure information that tribes are comfortable sharing is included in the planning and GIS effort. This should also be viewed as an opportunity to establish deeper cooperative efforts between agencies and each Tribe. At the planning level, tribes can tell us the value of desert regions without sharing specifics.

Mr. Kenna added that the maps shared today by Ms. Campbell were tools to show a starting point so tribes could judge what the need is. He recommended creating a mechanism so federal and tribal folks can communicate on a regular basis and be part of the working group.

Ms. Campbell noted the draft DRECP report would be coming out soon, but the best time to obtain input was now.

Mr. Jeremiah Joseph, Water Quality Manager, Fort Independence Indian Community of Paiute Indians of the Fort Independence Reservation, asked if tribes would benefit from renewable projects being close to them.

Mr. Walters answered that there will be some benefits, especially if tribal preferences can be worked into the projects with the BIA.

Mr. Joseph voiced his concerns regarding companies walking away from projects and structures. "If anything negative were to happen, would natural resources be available for the Tribe to be able to survive?"

Alan Hatcher, Tribal Member, Cocopah Tribe, AZ, made a statement that included the following main points:

There are communication inconsistencies with tribes that are in place. These are "process-focused" in nature and a failure.
The timeline presented is almost irreparable; it seems reactive going back to legislation.
What is GIS and what is required for the DRECP.
It seems like the government wants tribes to support this historical process, but the anomalies push tribes to oppose the project, such as a project public hearing without public comment allowed.
Is a recent lawsuit the catalyst for this dialogue?
Meaningful consultation cannot take place while the reports are being completed. The dialogue should be simple communication so tribes are empowered and the communication is meaningful.
The burden is being put on tribes given that the deadline is just a few weeks away.
The renewable energy projects are here and the way things are done have changed.

Mr. Black thanked Mr. Hatcher for his feedback and encouraged all tribal representatives to also share their views for improving this dialog as the federal agencies need tribal guidance and participation.

Break 3:20- 3:30 P.M.

Reconvened 3:33 P.M.

Facilitator Myers voiced his support for effective communication and remarked that form letters do not always do a good job.

Mr. Pogacnik reiterated there was agency interest in arranging multiple meetings with those present, noting this was the beginning of the process. Mr. Pogacnik also emphasized that it is understood that tribal information is very sensitive, but the lines that are drawn in the map do not have to be defended or justified. Tribes are, themselves being asked to identify areas of cultural concern, resource conflict, development interest and natural resource issues. For this reason, ethnological studies are not needed.

Mr. Joel Clement, Director, Office of Policy Analysis noted that a landscape-level process such as the DRECP is meant to even the playing field so all of the competing interests have some input on planning and development, rather than favoring whoever puts in an application for development.

Ms. Campbell added that from a wildlife biologist perspective, she wants lines on a map, but she reminded the group that justifications are not needed.

Mr. Doug Bonamici, Legal Counsel, Colorado River Indian Tribes of the Colorado River Indian Reservation asked if the federal government was going to take the Tribe's word.

Ms. Campbell responded "yes we are."

Ms. Otero said that her people had trusted tribal leaders with the responsibility of taking care of the land. She was glad to hear the Government's new approach. She noted it was difficult to work with agencies or project applicants who hire contractors to talk to the tribes and that this approach goes against most laws. Even though BIA is starved for money and resources, there are a few people out there that she and tribal leaders would be comfortable with. She asked if there was a way to know when a corporation was moving a project forward so that true government-to-government meetings can take place with sufficient time and opportunity for tribal input.

Mr. Pogacnik stated that everyone will trust the data that is going to be provided by tribes in the planning process. Asking tribes to identify their issues and concerns is consistent with the way biologists are being treated when asked to identify habitat concerns. With the use of the

information in the DRECP, if an application for renewable energy development is submitted seeking to work in a protected area, the answer would be no.

Mr. Kenna added that the application-driven world is different than the planning-based approach to future project siting which will result from the DRECP. While there are difficult issues, it is necessary to move forward to create a map. The idea is to have a dialogue before an alternative analysis process is created.

Ms. Campbell stated that the DRECP was California Desert focused, but if lands in close proximity were of interest, the information should be shared in this process so that it may be possible to move the boundaries.

Facilitator Myers excused himself due to a prior commitment and reminded all that consultation should be done with the Tribal Leaders and Government Leaders. He wished the group good luck for the second day of meetings.

It was announced that there were breakout rooms reserved for more in-depth conversations should anyone wish them. The majority of those present said they would attend for the second day of meetings.

A general discussion occurred focusing on the different aspects of laws that could be used in informing the planning process such as NEPA and CEQA. It was noted that FWS was rewriting guidelines that could affect some areas due to the presence of eagles.

Mr. Black urged all to stay when the plenary session ended and reach out to the 15 senior government employees that were present. He then reminded everyone data was needed to populate the DRECP map.

Questions were raised over individual renewable energy projects and it was decided that roundtables would be conducted on day two of the meeting.

Ms. Otero asked who would be meeting with each Tribe.

Mr. Laidlaw and others answered that Field Managers or District Managers or GIS mapping specialists of the BLM would be the main points of contact. The tribal representatives present voiced their concerns that meetings be with agency representatives who have the authority to make decisions.

Mr. Black stated Field Managers do have limited authority and added that the projects that get to the federal government do so because the Field Managers are involved. He noted level of activity in the federal agencies had increased significantly in response to many new project applications.

A discussion was held that focused on the difference in power structure of the federal government, where there is distributed authority and balance between agencies with many

different missions. This was contrasted with tribal governments where a single body or person makes decisions. The difficulties of representative tribal input were discussed.

Questions over commitment issues were raised. It was stated that Tribes could count on the commitment from the current department and agency leadership. These federal agencies want a process including specific strategies which work for each individual Tribe and create true communication.

Ms. Otero remarked how her tribe's government-to-government protocol was redlined by the Solicitor's Office when her Tribe tried to create it.

Mr. Black asked Ms. Otero who would she like to see consult with her Tribe.

Ms. Otero replied, the Secretary of the Interior in a face-to-face meeting.

Mr. Black said he would take the information back to Washington, DC and said that the BLM was in the best position to have the first meetings with tribes due to the way the federal government is organized and since this would be the most efficient way.

Mr. Kenna added that as the new State Director, he would like to visit field offices and check in with tribes that would like to meet with him.

Comments were made by several tribal representatives that consultation regarding an area of Tribal concern or tribal development programs could be complicated by the lack of communication among BLM and other agencies across agency and jurisdictional boundaries (e.g. California and Arizona).

Mr. Laidlaw summed up the federal commitment and next steps to be taken.

Mr. Pogacnik emphasized the commitment of BLM to bring tribes into the planning process and asked that each Tribe make their specific issues, concerns and interests known

Meeting Adjourned 5:00 P.M.

COLORADO RIVER INDIAN TRIBES

Colorado River Indian Reservation

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January 19, 2012

Via E-Mail and U.S. Mail

John Kalish, Field Office Manager
Bureau of Land Management - South Coast Field Office
1202 Bird Center Drive,
Palm Springs, CA, 92262-8001

Re: **Comments on the proposed *(Draft) GEOARCHAEOLOGICAL TRENCHING AND CONTROLLED GRADING EVALUATION PLAN, GENESIS SOLAR ENERGY PROJECT, RIVERSIDE COUNTY, CALIFORNIA***

Dear Mr. Kalish:

The Colorado River Indian Tribes ("CRIT" or "Tribes") welcomes the opportunity to comment on the Geoarchaeological Trenching and Controlled Grading Evaluation Plan ("Trenching Plan") for the Genesis Solar Energy Project "GSEP" or "Project"), as proposed in the December 2011 draft, and now under consideration by your office.

The Colorado River Indian Tribes wish to express significant concerns it has with respect to treatment of cultural materials discovered at the site of the Genesis Solar Energy Project. As a concurring signatory to the GSEP Project Programmatic Agreement ("PA"), on December 6, 2011, CRIT representatives participated telephonically in a meeting with representatives of the Bureau of Land Management ("BLM" or "Bureau"), the Project applicant ("NextEra"), the California Energy Commission ("CEC"), and other Indian tribes in the region. At this meeting, the participants discussed what was described as the "unprecedented" discovery of significant cultural resources at the Project site during grading operations. (Statement of Holly L. Roberts, Associate Field Manager, BLM, South Coast Field Office, regarding nature of discoveries at GSEP, during telephonic conference, December 6, 2011). At that time, a preliminary Trenching Plan had been proffered as a treatment response to the many discoveries then taking place at the GSEP site.

After reflecting on this new information, and engaging in discussions with other area Tribes and BLM – a discussion wherein Bureau personnel also described the discoveries as unprecedented - CRIT agrees with Ms. Roberts – the discoveries at GSEP are indeed unprecedented.

The CRIT Reservation is very close to the site at Dry Ford Lake. CRIT members feel a strong kinship with the people who are represented by the "artifacts" now being churned up at the Project site. CRIT also feels a strong sense of responsibility to honor and protect those people who left the cultural items there long ago. CRIT is pleased that BLM has taken steps to protect cultural values at GSEP, but we remain

concerned that the cultural values assessment itself may be undertaken primarily by archaeologists working for the Project developers (through AECOM), the California Energy Commission (CEC), and the BLM. While we do not doubt the integrity of these entities, we believe that their interests naturally, and necessarily align with the Project's continued development and completion. Tribal interests may lie elsewhere. Certainly, CRIT's interest is in preserving its cultural history. However, without a clear-eyed assessment of the Genesis site, one undertaken by all concerned parties together, Tribal interests may go underrepresented. Thus, CRIT has a number of serious concerns about the Project's impacts on cultural resources, NextEra's compliance with their obligations under the PA, Historic Properties Treatment Plan ("HPTP"), and California Energy Commission Conditions, and BLM's consultation with CRIT. BLM must address these issues before determining whether, and under what conditions, NextEra may be allowed to proceed with construction in the area of these, and future discoveries.

1. Initial Notifications/Consultation Failed to Adhere to Project Requirements:

The GSEP Programmatic Agreement contains a notification and consultation process intended to address treatment of discoveries of cultural materials during construction of the facility. According to representations made at the December 6 meeting, BLM was aware as early as November 14, 2011, that grading activities associated with Project development had revealed and possibly destroyed numerous cultural items associated with a prehistoric human settlement. Yet, CRIT was not notified of this unanticipated find by either NextEra, or BLM until November 29, 2011, more than two weeks later. This delay clearly violated the National Historic Preservation Act and its implementing regulations, which require BLM to notify affected Indian tribes of such discoveries within 48 hours. *See* 36 C.F.R. § 800.13(b)(3); *see also* GSEP Programmatic Agreement (PA), § VI(b) (incorporating requirements of 36 C.F.R. § 800.13(b)(3)).

Further, the California Energy Commission's Licensing Condition CUL-9 also requires notice to affected Tribes within 48 Hours. (*See below: Historic Properties Treatment Plan,* Table 8, pg 6-4.)

Table 8. Schedule of Pre-construction, Construction, and Post-construction Tasks

Ongoing during construction	Within 48 hours of the discovery of a resource of interest to Native Americans, the project owner shall ensure that the CRS notifies all Native American groups that have expressed a desire to be notified of such finds (CUL-9)

CRIT reasonably assumed that its signatory status on the PA adequately communicated, and established its "desire to be notified" of these discoveries.

Subsequent communication between BLM and CRIT Tribal Council and staff has improved. However, the early failure to notify CRIT in a timely manner put the Tribes in a disadvantageous position. Research and response to these issues is time-consuming for all involved. In the interim, more discoveries occurred; more cultural items were destroyed, and more spiritual harm was done. There are only two signatory Tribes on the GSEP Programmatic Agreement. This is a very short list. If, as here, only 50% of the affected signatory Tribes are notified and consulted in a timely manner upon discovery of "unprecedented" cultural resources, it raises profound concerns whether Tribes can ever reasonably be confident that their cultural resources are safe in the hands of BLM or project Developers.

2. BLM must Consider Avoidance as the Preferred Treatment Option for Recent Discoveries at GSEP.

i. BLM Response to Discovery of Artifacts.

According to meeting minutes from a November 29, 2011 conference call between BLM, CEC, AECom and NextEra, it appears that BLM had already committed to allow Project construction to continue on the newly discovered historical site before notifying CRIT of the discovery. For example, these minutes reflect that the conference call participants—which did not include any tribal representatives—were already in the process of preparing a plan to continue grading, so that artifacts would be unearthed and collected as construction continues, rather than avoided. This pre-existing commitment failed to meet the BLM's obligation to consult with Indian tribes before committing to such a course of action. CRIT is very concerned that such a commitment renders any future "consultation" with CRIT or any other tribe, perfunctory.

Moreover, it appeared from these minutes—as well as from the tenor of the December 6 meeting—that neither NextEra nor BLM had considered avoidance of the discovered site as a method of mitigating significant, adverse impacts to cultural resources, even though the Programmatic Agreement expressly identifies avoidance as the preferred method of mitigation. *See, e.g.*, Programmatic Agreement, App. B, § III(a)(ii) ("For cultural resources, the preferred method of mitigation is avoidance of all cultural resources to the maximum extent practicable."); *id.*, App. J, § 2.0 ("Avoidance of all cultural resources is preferred and is the goal of BLM."). Only if avoidance is infeasible should BLM consider allowing adverse impacts to be mitigated by "data recovery" and excavation. *See id.* Programmatic Agreement, App. B, § III(a)(iii)(1); *id.* App. J § 2.0. Avoidance is recognized as the preferred mitigation method by the California Energy Commission in its decision approving the Project. *See* CEC Decision, § VI(C), Findings of Fact #9.

The HTPT is replete with promises – some more specific than others - that avoidance will be considered as a treatment option. Examples from the May, 2011 version of the HTPT include the statement "[t]he avoidance of all cultural items and sites should be considered where feasible." (Chapter 9.0, Mitigation Plan / Plan For Discovery Of Cultural Resources.) This same statement, though somewhat vague as to its intended application, appears several times throughout the Chapter.
The title of Chapter 9.2, "Definition Of Unanticipated Discoveries Where Avoidance Is Not Required—Prescribed Treatment" suggests that there are corresponding discoveries where avoidance *will* be required.
A more specific promise appears in Chapter 9.4.2, entitled Site Evaluation Methods, which contains the following passage;

"Site avoidance will be the preferred method of dealing with cultural resources during construction of the GSEP. However, if a newly discovered resource is potentially significant and if avoiding the resource proves infeasible (as determined though consultation between the CRS, the project owner, the CEC CPM, BLM, PTNCL and DTCCT specialist (if applicable), and SHPO), then site evaluation will proceed.

Avoidance is also CRIT's preferred treatment alternative. The same preference was expressed by several Tribes attending the December 6, 2011 planning meeting referenced above. Though NextEra's Project representatives asserted that avoidance of the area where recent discoveries occurred would be infeasible, and would result in there being "no project," neither NextEra, its technical contractor, AECom, nor BLM has provided CRIT with evidence indicating that avoidance is not feasible. Indeed,

when the Bureau analyzed a "Reduced Size Alternative" in the Draft EIS for the project, it specifically noted that "no evidence has been provided to demonstrate" that "a 250 MW size project is an optimal size," as the developer urged, and that "solar thermal facilities as small as 20 MW are currently proposed in California." DEIS at 2-33.

ii. Halting Construction Activities in Vicinity.

On approximately December 12, 2011, BLM notified CRIT that it had ordered NextEra to stop all construction activities on the Project site in the vicinity of the newly discovered cultural resources. BLM also indicated that it would continue to enforce this stop-work order until formal consultation had occurred. CRIT applauds these actions. However, a short-term work stoppage is only the beginning of the process. Subsequently, BLM engaged in consultation with CRIT Tribal Council, and indicated that consultation will continue, as the treatment alternatives and decisions are considered. CRIT likewise appreciates BLM's stated commitment to these goals.

iii. Review by Independent Expert.

CRIT believes that, for consultation to be meaningful, BLM and NextEra must allow CRIT to bring an expert to the site to investigate and analyze its significance. BLM must not allow NextEra to undertake any construction activities that could further disturb or degrade the site until CRIT's expert has had an opportunity to investigate the site. Please provide CRIT with a schedule of dates available for such a site visit, recognizing that CRIT's expert may need more than one day to conduct his/her research.

iv. The draft Trenching Plan Should be Revised, or Augmented to Include a Detailed Discussion of Avoidance Feasibility.

At the Dec. 6, 2011 meeting, and again during the January 12, 2012 meeting between the Bureau and its Tribal Council, CRIT made it clear to NextEra and to BLM that their first choice for treatment of the newly discovered cultural materials was through avoidance. Even though the proposed Trenching Plan states that it was "prepared . . . in consultation with . . . Native American tribal representatives," Plan at 1, the Plan fails to address what CRIT and other Tribes clearly and unanimously expressed was their preferred treatment option. Given that the PA, the HPTP, and the CEC conditions all state avoidance is the preferred method of handling unanticipated discoveries like those at the site, the Bureau must at the very least analyze the feasibility of avoiding these "unprecedented" finds.

v. Area of Critical Environmental Concern: "Land Swapping" Is Not a Viable Option

During the January 12, 2012 meeting between the Bureau and CRIT Tribal Council, the Bureau suggested that the Trenching Plan might yield information that could support a subsequent designation of lands around the GSEP site as an Area of Critical Environmental Concern ("ACEC"). Thus, while the Trenching and Grading would disturb the GSEP site, it may result in the future protection of neighboring BLM lands.

In response, CRIT Tribal Council members described the disturbance of cultural resources at the Genesis Solar Energy Project site as physically painful to them. One Tribal Council member, immediately grasping the implications of the Bureau's hypothesis, stated flatly, "We don't want to see lands swapped – the items being discovered there are too sacred to disturb."

Thus, the Colorado River Indian Tribes cannot, in good conscience, support trading the destruction of one cultural site for the possible protection of others. In addition, CRIT will be consulting with its own cultural resources expert/archaeologist about how, from a technical perspective, the Bureau can protect the resources at the site from disturbance while providing the information needed to support of a ACEC designation.

3. NAGPRA Does Not Require Excavation or Curation of Human Remains and Funerary Objects.

The discoveries at GSEP include a pair of nested metates lying upon a bed of charcoal. This is universally presumed to be a cremation site by members of the Colorado River Indian Tribes. They need not be shown a charred bone fragment, nor DNA analysis of ash samples to reach that conclusion. Avoidance of the site is CRIT's preferred treatment.

CRIT notes that nothing in the HPTP, or the Native American Graves Protection and Repatriation Act *requires* that the site be further disturbed by excavation, data-recovery or curation. No one at CRIT needs to know anything more than they already do to make this determination. Excavation, and curation are the last alternative that should be considered for protection of the gravesite elements – not the first.

Even if this *is* merely a chance grouping of elements, a coincidence of time, weather, and geologic processes, placing the two stone metates in a nested position atop the remnants of a domestic cooking or heating fire, there is still no compelling reason of which CRIT is aware, to unearth the site. Unless additional information establishing some compelling need to further disturb this site is provided, CRIT's treatment preference continues to be avoidance.

4. Supplemental EIS is Required.

At a minimum, given the extraordinary nature of the archaeological find at the Project site, BLM must prepare a Supplemental EIS for the Project, per 40 C.F.R. § 1502.9(c)(1)(ii), to address the "significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts. As previously noted in communications with BLM, CRIT disagrees with the statement, contained in the minutes from the November 29 conference call, that: "George Kline indicated he talked to the tribes and they are ok with him keeping them informed regarding the plan and *no separate review would be required.*" Given that BLM did not contact CRIT until after this conference call—a fact acknowledged later in the same minutes—this statement is obviously inaccurate, at least as regards CRIT.

The HPTP itself supports such a review. Section 10.2 of the HPTP, entitled *Prehistoric Sites Associated With The PTNCL,* identifies Early Holocene discoveries at known sites in the same area as "exceedingly rare . . . making these discoveries quite significant." Section 10.2 goes on to state that the previous discoveries were made at CA-RIV-9047, CA-RIV-9072, and CA-RIV-9212., and that, like the current location of discoveries at GSEP, "[t]hese sites are all located along the north shoreline of Ford Dry Lake in sites that contain no ceramics or other diagnostic artifacts dating to periods later than the Archaic. This could possibly indicate a site complex . . . ." With such clear indication of the potential significance of these discoveries, the Tribes must demand that BLM consider avoidance of the area as its preferred treatment alternative. The Trenching Plan fails to address the avoidance option.

CRIT firmly believes that a Supplemental EIS, and not a Trenching Plan, is warranted here. The Trenching Plan assumes further disturbance is inevitable. CRIT does not support this assumption.

5. NextEra's Compliance with ROW Lease and CEC Conditions of Certification. Pursuant to its Right-of-Way Lease/Grant, NextEra was required to "*immediately* report[] to the Authorized Officer [at BLM]" "[a]ny cultural and/or paleontological resource (historic or prehistoric site or object) discovered by [NextEra], or any person working on its behalf." Right-of-Way Lease/Grant Serial Number CACA-048880, Exh. B, ¶ 4. NextEra was also required to "suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer." *Id.* CRIT is unaware whether NextEra complied with this condition, and whether BLM issued written authorization for NextEra to continue grading the site after such cultural resources were discovered. Please also provide us with any documentation related to NextEra's compliance with this provision (or lack thereof).

The Conditions of Certification imposed by the California Energy Commission also provide that, upon discovery of a cultural resource more than 50 years old, "ground disturbance shall be halted or redirected in the immediate vicinity of the discovery sufficient to ensure that the resource is protected from further impacts." CEC, Genesis Solar Energy Project, Commission Decision (September 2010) ("CEC Decision"), CUL-9. Ground disturbing activities cannot resume in the area unless and until a recommendation has been made on CRHR eligibility, all interested Tribes have been notified, and other steps have been taken—including the development of mitigation. Please advise us whether NextEra is in full compliance with this condition, and whether a CRHR eligibility determination has been made.

6. Security Measures

With the already large number of discovered cultural items increasing daily, CRIT is concerned that security measures to protect and preserve these irreplaceable items may be inadequate. The Tribes therefore request that NextEra be required to provide to each interested Tribe, a brief, but complete, confidential description of the cultural items located to date, whether these items have been removed from the site, where any removed items are presently located, and how those items, and the worksite are being secured.

7. Observations Regarding "Fast-Tracking" of Project Applications

The Tribe recognizes that modern public policy favors the development of renewable energy resources, deeming such development a benefit to society as a whole. Consequently, pursuant to federal policy, numerous project proposals have been, or are currently being "fast-tracked" through the regulatory approval process, toward ultimate development.

The fast-tracking approach has resulted in short reviews, poor consultation practice, and needless conflict, causing all concerned undue hardship, and failing to adequately protect invaluable, irreplaceable resources of many varieties. With so many project proposals to monitor, and the flood of new project applications overwhelming the staff of BLM Field Offices all over the region, CRIT feels it must be proactive in the protection and oversight of cultural resources in the area.

In principle, CRIT, like many Tribes, favors renewable energy development.[1] However, the problems sought to be remedied by large-scale renewable energy projects largely are an outgrowth of human activities in concentrated urban-industrial population centers coupled with our current dependence on fossil fuels. Historically, isolated and often remote Tribal communities contribute only minimally to these problems. CRIT appreciates the potential value of a streamlined project approval process – increased economic efficiency for both federal agencies and developers, increased energy resources, reduced greenhouse gas emissions, enhanced energy independence – yet, the recent flood of GSEP discoveries makes a strong counterargument for amending the process to better protect cultural resources that are "non-renewable and irreplaceable, a part of our national heritage." [2] The Tribe believes that needless disturbance of significant cultural resources has occurred at the Genesis site, and that these unfortunate outcomes are likely to occur again and again if the "fast-track" protocols remain in effect. CRIT's concerns are aptly characterized in testimony given by Dr. Elizabeth Bagwell, CEC's staff Project Archaeologist, at the Evidentiary Hearing Before The California Energy Resources Conservation And Development Commission, during the Application for Certification Proceedings. Dr. Bagwell stated as follows:

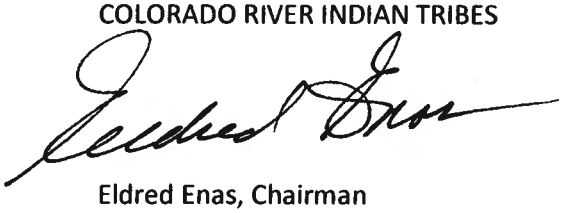
[C]ultural resources are a non-renewable resource. Unlike biology, where you can repair the environment to a certain degree and encourage plants and animals to return. Once you've destroyed cultural resources, they're gone forever.

Bagwell, Elizabeth, Ph.D. Transcript, CEC, Pg. 147

CRIT shares Dr. Bagwell's concerns. The potential for adverse impacts to this "non-renewable resource" is clear, and "[o]nce you've destroyed cultural resources, they're gone forever."

Thank you for this opportunity to comment on the proposed Trenching Plan. CRIT remains ready to discuss these issues with the Bureau, NextEra and other affected parties so that we may reach agreement on an acceptable and respectful way to handle this new discovery.

Very truly yours,
COLORADO RIVER INDIAN TRIBES



Eldred Enas, Chairman

cc: Tribal Council
Ken Salazar, Secretary of the Interior
Larry Echo Hawk, Assistant Secretary of Indian Affairs, DOI

---

[1] Letter from Mike Jackson, Sr., President, Quechan Indian Tribe, to John Kalish, Field Manager, BLM Palm Springs Field Office. (February 16, 2010) (Retrieved from: http://www.energy.ca.gov/sitingcases/genesis_solar/documents/others/2010-02-16_Section_106_Consultation_Process_Letter_TN-55835.pdf. (January 20, 2012)

[2] Electronic Mail from Greg Glassco, Yavapai-Prescott Indian Tribes, Cultural Resources Manager to Douglas F. Bonamici. Law Clerk, Colorado River Indian Tribes (January 19, 2012, 4:02 pm MST) (on file with author).

cc: Tribal Council
Ken Salazar, Secretary of the Interior
Larry Echo Hawk, Assistant Secretary of Indian Affairs, DOI
Bob Abbey, Director, Bureau of Land Management
James G. Kenna, California State Director, BLM
Teri Raml, District Manager- California Desert District, BLM
Janice Staudte, Superintendent, Colorado River Agency, BIA
George Klein, Archaeologist, South Coast Field Office, BLM
Eric N. Shepard, Attorney General
Lisa Swick, Acting Museum Director
Ron Escobar, Tribal Secretary/ Treasurer, Chemehuevi Tribe
Linda Otero, Tribal Council, Fort Mojave Indian Tribe
Patricia Garcia-Tuck, Director, THPO Agua Caliente Band of Cahuilla Indians
John P. Bathke, Historic Preservation Officer, Quechan Indian Nation
H. Jill McCormick, M.A., Cultural Resources Manager, Cocopah Indian Tribe
Winter King, Shute, Mihaly & Weinberger LLP

Thank you for your comment, Patrick Maguire.

The comment tracking number that has been assigned to your comment is SEDDsupp20123.

Comment Date: January 27, 2012 14:52:34PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20123

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Address 3:
City: Santa Monica
State: CA
Zip: 90401
Country: USA
Privacy Preference: Don't withhold name or address from public record
Attachment: Dixieland PEIS Variance Request.pdf

Comment Submitted:

MAINSTREAM
RENEWABLE
POWER

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www.mainstreamrp.com

January 25, 2012

Solar Energy Draft PEIS
Argonne National Laboratory
9700 South Cass Avenue
EVS/240
Argonne, IL 60439

Comments on the Supplement to the Draft Solar PEIS

Dear Agencies:

Mainstream Renewable Power ("Mainstream") is a developer of renewable onshore and offshore solar and wind energy projects. Mainstream currently has operations in eight countries on four continents with over 8,500 MW under development. In California, this development includes two major wind energy projects on Bureau of Land Management ("BLM") managed lands. California represents a strategic and important focus for Mainstream's development portfolio.

Mainstream also supports the efforts of the Department of Energy ("DOE"), the BLM and all the co-operating agencies in supporting the goal for the responsible development of renewable energy in the western United States. Mainstream shares this objective through sensible siting and conscientious development.

When reviewing any development proposal, Mainstream takes great care in identifying and analyzing prospective site characteristics. When reviewing potential solar sites, Mainstream evaluates its compatibility with surrounding land uses and whether residual impacts to the environment are minimized. After much detailed analysis, Mainstream believes that it has found such a potential solar development site. This site is unique in that it retains excellent solar resources, has apparently minimal environmental impacts, is on land largely previous disturbed, is adjacent to transmission rights-of-way, substations and other solar developments, and has no other apparent public use.

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We have reviewed the proposed Solar Development Area Maps and find that this excellent potential solar development site has not yet been specifically identified. The site is; however, in the vicinity of the Imperial East Proposed Solar Energy Zone. The characteristics of the proposed solar development site are as follows:

- Project Name – Dixieland Solar Project
- BLM Ref – CACA053143
- Land Owner – United States Department of the Interior, managed by the BLM
- Acreage – 240 acres
- Location – County of Imperial, California (13 miles west of the City of El Centro)
- Address – North of Strobel Road, south of Evan Hewes Highway and west of the Foxglove Canal and Dixie Drain No.4
- Section – T16S R11E, Sec. 11 & 12 and T16S R12E, Sec. 18
- APN's – 034360074000, 51260018000, 034360040000
- Map – See enclosed

Mainstream appreciates that given the smaller project acreage, this site would not be suitable as an independent Solar Energy Zone; however, we believe that the proposed site is an excellent candidate to be included as a variance area.

Prior to such review, it must be noted that the Dixieland application to the BLM was submitted in May 2011, the first application screening meeting took place on May 20th 2011 and the second on August 4th 2011, all prior to the publication of the Supplement to the PEIS. In your Answer to Questions section, you define "pending applications" as applications on file with the BLM before publication of the Supplement, including applications for lands within proposed SEZs filed before June 30, 2009. "New" applications are those applications filed within proposed SEZs after June 30, 2009, and any application filed after the publication of the Supplement. The application was processed in accordance with applicable BLM instructional memorandums and the application was formally accepted by the BLM Field Office at El Centro on October 7, 2011. Since the application was received and "on file" prior to the publication of the supplement, it should be considered a pending application; however, further clarification may be necessary.

In addition to being an "application on file", Mainstream requests that the Dixieland Project site be included as a variance area in the proposed Solar PEIS. Additional supporting factors include:

- The surrounding area is a hub for existing and permitted solar and geothermal electricity generation
    - Imperial Irrigation District ("IID") Dixieland Substation is one mile north
    - IID's proposed 230kV Transmission Line crosses the Dixieland Project site boundary (anticipated construction date of 2012/13)
    - SDG&E Imperial Valley Substation is located approximately six miles southeast of the project site
    - Union Pacific Railroad tracks share the northern site boundary
    - Foxglove Canal and Dixie Drain No. 4 share the eastern site boundary
    - The existing Southwest Powerlink and proposed Sunrise Powerlink are located approximately three miles south of the project site
    - BLM Classification – Limited with Type III Application accepted

- There are at least two other major solar projects planned on adjacent lands
    - Centinela Solar Project, south and west of the Dixieland site
    - Imperial Valley Solar Project, west of the Dixieland site

- In order to accommodate the flexibility described in the program objectives, the modified program alternative allows for utility-scale development in variance areas outside of the Solar Energy Zones and exclusion areas in accordance with a proposed variance ordinance. As the draft Solar PEIS document indicates, there are twenty-nine categories of lands that would be excluded from solar development. None of these categories are found at the proposed Dixieland Solar Project site. Moreover, the site is:
    - Project to accommodate a PV Array system of approximately 20MW total.
    - Site is not within the BLM-administered lands considered off-limits to development. Rather the site has been serialized by BLM as CACA053143
    - Lands have a slight east slope of approximately 1%
    - Solar isolation levels are greater than 7.0 kWh/m2/day
    - The Dixieland site is not in or adjacent to designated critical habitat, special management areas, wilderness study areas or Areas of Critical Environmental Concern (ACECs)
    - Preliminary biological assessments indicates that the site has no apparent critical habitat for any threatened or endangered species

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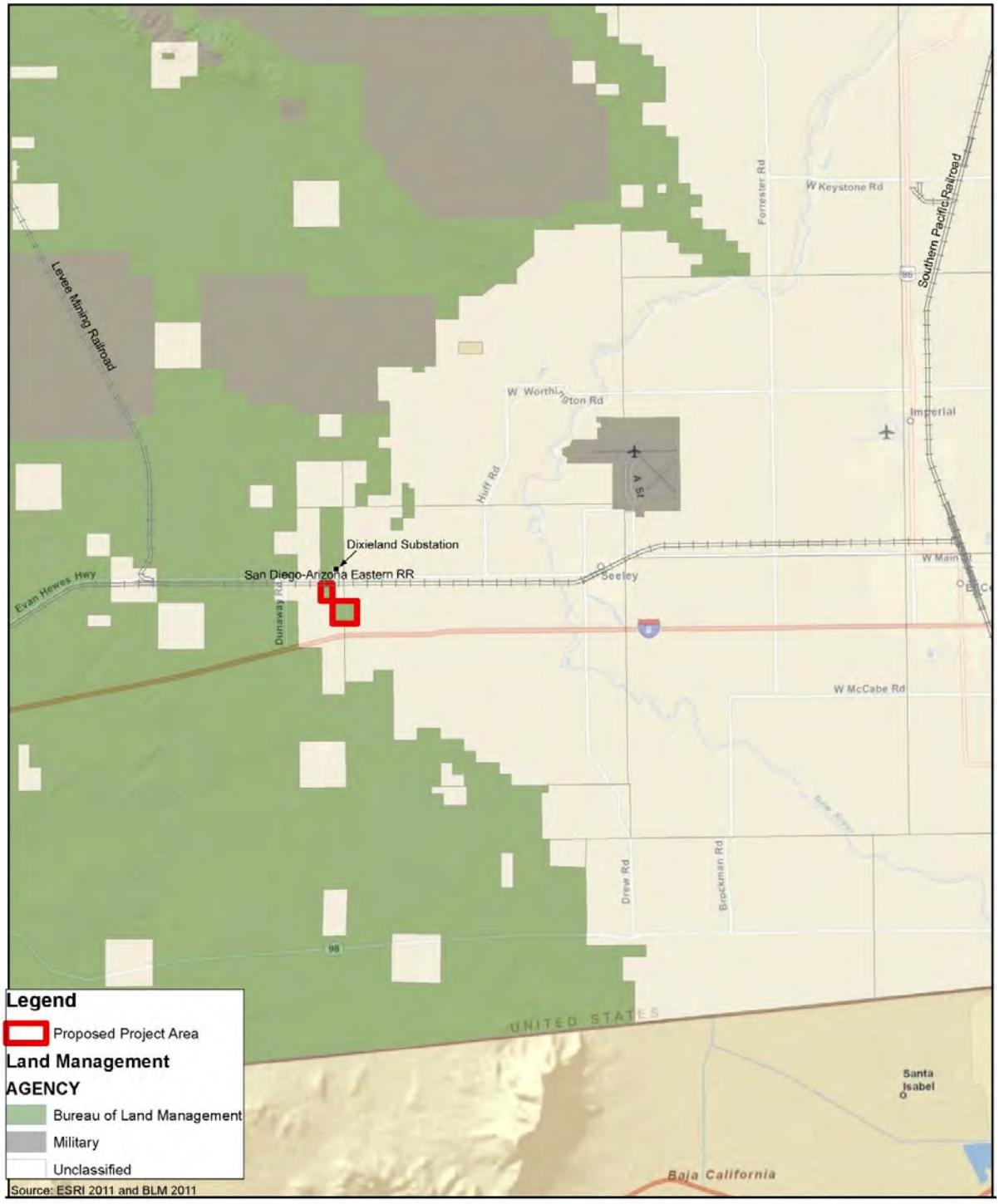
- The site is not a right-of-way exclusion areas or avoidance area
- The site is not a special recreational management area or other special use area
- Although not required for PV array installation, the site is adjacent to water supplies

According to the map published by the Argonne National Laboratory, dated October 2011, titled "BLM-Administered Lands in California Available for Application for Solar Energy ROW Authorizations under the Modified BLM Alternatives Considered in the Supplement", the Dixieland Project site appears not to have been included in Lands Available for Application – Modified Program Alternative (Variance Areas). For all the reasons stated above, including that the project application has already been accepted by the BLM, Mainstream believes the proposed PEIS can be enhanced with the inclusion of this Dixieland Project site.

We appreciate the opportunity to comment of the proposed Solar PEIS and are available at any time to discuss further the recommendations included in this transmittal. Should you have any questions or require further information, please do not hesitate to contact me.

Sincerely,

Patrick Maguire
Vice President Development


Legend
Proposed Project Area
Land Management
AGENCY
Bureau of Land Management
Military
Unclassified
Source: ESRI 2011 and BLM 2011
Dixieland Substation
San Diego-Arizona Eastern RR
Levee Mining Railroad
Southern Pacific Railroad
Forrester Rd
W Keystone Rd
W Worthington Rd
Imperial
Huff Rd
A St
Evan Hewes Hwy
Dunaway Rd
Seeley
W Main St
W McCabe Rd
Drew Rd
Brockman Rd
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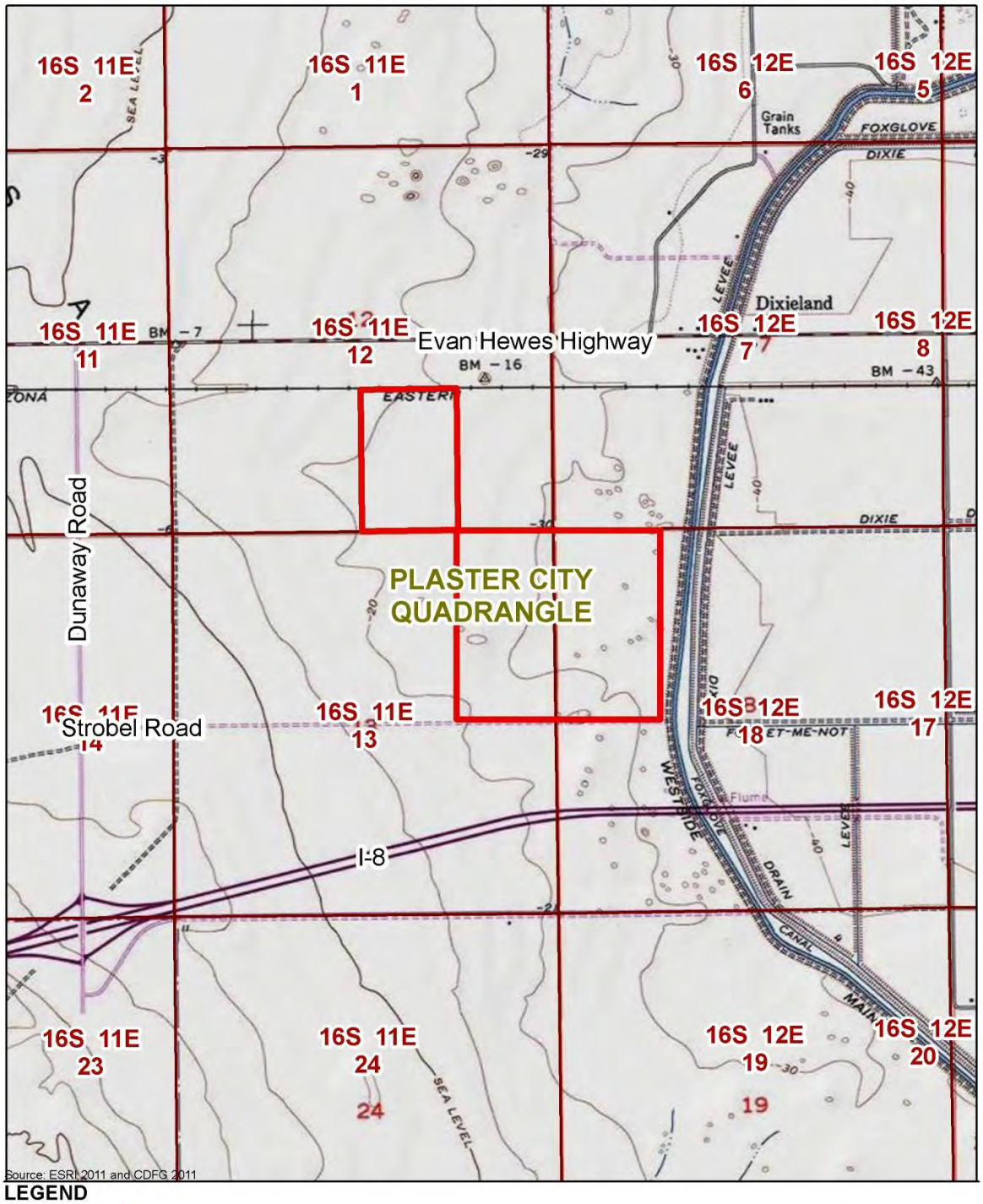

Source: ESRI 2011 and CDFG 2011

LEGEND

Proposed Project Area

0 0.125 0.25 0.5 0.75 1 Miles

RMT
ENVIRONMENT • ENERGY • ENGINEERING

Figure 4: Panoramic Views of the Project Site

Northern Project Parcel

Southern Project Parcel

Figure 5: Panoramic Views of the Project Site

Dixie Drain #4, Looking South with Southern Parcel on Right with Berm

Union Pacific Railroad on Northern Boundary of North Project Parcel

Thank you for your comment, Gary Werner.

The comment tracking number that has been assigned to your comment is SEDDsupp20124.

Comment Date: January 27, 2012 15:23:33PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20124

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Attachment: PEIS_-Supplement_-_PNTS_Comments_-27Jan2012.pdf

Comment Submitted:

Partnership for the National Trails System

222 S. Hamilton #13 Madison, WI 53703 Phone: (608) 249-7870
www.pnts.org Fax: (608) 257-3513

Sustaining Our Trail Resouces

January 27, 2012

VIA ELECTRONIC SUBMISSION (http://solareis.anl.gov/involve/comments/index.cfm)

Linda J. Resseguie
Solar Energy Draft PEIS
Argonne National Laboratory
9700 S. Cass Avenue
EVS/240
Argonne, IL 60439

Re: Comments on the Supplement to the Draft Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States (DOE/EIS-0403D-S

Dear Ms. Resseguie:

The Partnership for the National Trails System (PNTS) commends the efforts of the Bureau of Land Management (BLM) to respond to the many public comments on its draft solar programmatic environmental impact statement (Draft PEIS) by drafting a generally strong Supplement, which elevates protections for natural and cultural resources. We are pleased to see the withdrawal from consideration, or the substantial reduction of, several proposed solar energy zones (SEZs) which, if developed, would have impacted significant natural and cultural resources. We also commend the BLM for conducting thorough National Environmental Policy Act reviews of SEZs, requiring Class II or III cultural resource inventories of project areas proposed in variance applications, and requiring consultation under the National Historic Preservation Act as part of the analysis of new SEZs. Our comments on the Supplement focus on what we see as still inadequate protections for current and potential units of the National Trails System.

We believe, as many others do, that all federal agencies, including the BLM, should work with other public and private entities to achieve significant reduction of energy use through greatly improved efficiency and conservation as a top national priority. Stabilization and reduction of energy use by government, corporations, and individuals -- as has been achieved in California for 30 years -- should be done before embarking on building vast new energy production systems on public lands. We also believe that BLM should play a role, with other federal agencies, in promoting and facilitating "distributed energy production" – the generation of energy through local technologies close to where the energy is used – rather than relying solely on large-scale energy production and transmission systems. Energy policy should seek the elegance of minimizing rather than maximizing energy use; should seek to conserve rather than to expend resources as a first operating principle.

Interests of the Partnership

The Partnership for the National Trails System is a tax-exempt, non-profit federation of 34 non-profit organizations that work in direct partnership with Federal and state agencies to help sustain and manage America's 30 national scenic and historic trails. The Partnership exists to foster information exchange among the trail organizations, to provide skill-building training for volunteers and staff, to coordinate their public policy advocacy, and to advise Federal agency managers about issues relating to the National Trails System.

The Partnership was incorporated in 2001 and received tax-exempt 501(c)3 status from the Internal Revenue Service in 2003.

I. BLM should treat national scenic and historic trails as equal units of the National Landscape Conservation System.

We strongly applaud and support the decision to exclude all units of the National Landscape Conservation System (NLCS), including the national scenic and historic trails, from areas to be considered for solar energy development. Despite this decision the national scenic and historic trails are inadequately protected in the draft Solar PEIS.

When Congress designated the **National Landscape Conservation System** (Conservation System) it explicitly recognized that the system shall include each area that is "designated as a national scenic trail or national historic trail designated as a component of the National Trails System" 16 U.S.C. § 7202(b)(1)(D). Additionally, the Supplement acknowledges that national scenic and historic trails (NSHTs) are units of the Conservation System [Supplement at 1-10] and BLM Instruction Memorandum (IM) 2011-061 states that solar "development must… be consistent with protection of areas and resources of national interest, including the BLM National Landscape Conservation System." However, at the same time, the Supplement and the IM propose to lessen protections for NSHTs relative to other components of the Conservation System, a prescription we find inconsistent with Congress' intent. For instance, while both documents consider other units of the Conservation System to be areas of "High Potential for Conflict," they consider NSHTs to be areas of only "Medium Potential for Conflict" because of their "linear nature" [Supplement at I-10] and the idea that they "have resource conflicts that can potentially be resolved" [IM].

Recommendation:

- While the origin of this discrepancy between NSHTs and other units of the Conservation System is not the Supplement itself, we recommend that the BLM remedy this inconsistency in the treatment of units in the Supplement by elevating high potential route segments of national historic trails (NHTs) and national scenic trails (NSTs) to "High Potential for Conflict."

II. BLM should increase the width of the avoidance area for national scenic and historic trails.

The Supplement states that the standard avoidance width for NSHTs is 0.25 miles, except where a corridor of a different width has been established [Supplement at 2-16]. We commend BLM on establishing a minimum avoidance corridor for NSHTs, but given the importance of their landscape setting for the integrity and significance of NSHTs, and the dramatic visual impacts that utility scale solar developments have on resources that surround them, we believe BLM should add protections for trails beyond that narrow corridor. Such protections should be commensurate with the most

up-to-date strategies for protecting NSHTs, such as those included in the draft environmental impact statement/resource management plan (Draft EIS/RMP) revision recently published by the Lander Field Office of the BLM in Wyoming. For example, the preferred alternative in the Draft EIS/RMP prescribes specific physical and visual protections for trails at 0.25 mile, 1 mile, 3 miles, 5 miles, and more than 5 miles, depending on the development activity.

Recommendations:

- Using BLM's Visual Resource Management System, protections for NSHTs against impacts from utility scale solar energy development should include, at a minimum, limitation of visual contrasts to "weak contrast" for national scenic trails and for high potential route segments of national historic trails.
- BLM should consistently require mitigation measures that reduce visual impacts to current and potential (e.g., West Fork of the Old Spanish National Historic Trail) NSHTs. Such measures could include imposing limits on the height of power poles, promoting non-penetrating and low profile racking/panel photovoltaic systems, and, where appropriate, using low visibility fencing, such as black fencing in lieu of uncoated galvanized fencing, and golf netting.
- Because transmission lines servicing the solar installations can also cause direct and indirect impacts to trails, BLM should require applicants to align power poles within existing easements and rights-of-way for existing power lines, where feasible.
- Where applicable, BLM should require developers to explore agreements with adjacent landowners to eliminate transmission line crossing of public lands in locations where they could directly or indirectly impact national scenic trails and high potential route segments of national historic trails.

III. BLM should consider modifying additional SEZs to reduce impacts to NHTs.

As mentioned above, we commend BLM for removing or modifying several proposed SEZs to reduce impacts to significant resources. However, we believe that BLM should re-examine the extent of adverse impacts of some remaining SEZs to NHTs, given the NHTs' national significance and inclusion in the Conservation System, and modify those SEZs accordingly.

Recommendations:

We recommend that BLM modify the following SEZs to reduce impacts to national historic trails:

- *De Tilla Gulch*: We commend BLM for suggesting inventory and viewshed analysis to help determine potential impacts to the Old Spanish NHT and the West Fork of the Old Spanish Trail from this SEZ. Yet, we feel that the strong visual impacts to the trails that are guaranteed within approximately 5 miles of the SEZ remain unacceptable. Therefore, we recommend that BLM push, at a minimum, the southeastern boundaries of the SEZ back at least 2.5 miles, as well as implement strong mitigation measures to further reduce visual impacts.
- *Dry Lake:* We commend BLM for dramatically reducing the size of this proposed SEZ, in part to avoid impacts to significant cultural resources. However, we still recommend that BLM move the southeastern boundary of the SEZ to the west of I-15 to help reduce impacts to the Old Spanish Trail/Mormon Road site, which is listed in the National Register as a district.

IV. BLM should conduct a Class II cultural resources inventory of at least 10% of each currently proposed SEZ.

We strongly support BLM's recommendation for the use of Class II sample surveys to better understand cultural resources located within proposed SEZs. However, we feel that 5% minimum survey coverage, as planned for SEZs in Arizona, California, and Nevada [Supplement at 2-22] is inadequate. This inadequacy is illustrated by the fact that data collection efforts recommended to reduce uncertainty about potential impacts from several of the proposed SEZs (e.g., Brenda, Gillespie, Imperial East, Riverside East, Antonito Southeast, De Tilla Gulch, Dry Lake Valley North, Gold Point) involve acquiring a 10% sample of each SEZ [Supplement at C-19, C-36, C-51, C-77, C-96, C-112, C-203, C-218].

Recommendations:

- BLM should require consistent Class II sampling of, at a minimum, 10% of current SEZs. This information should be used to help guide solar development away from areas of significant cultural resources and/or to enact avoidance and mitigation strategies.
- BLM should require consistent Class II sampling of, at a minimum, 20% of future proposed SEZs to help ensure avoidance of areas of significant cultural resources. This increased percentage of inventory should be feasible with future funding allocations and longer planning time, and it will provide a more accurate model of the probable locations of significant cultural resources.

Conclusion

When planning for large-scale solar energy development on federal public lands, the BLM must consistently prioritize the protection of outstanding natural, historic, and cultural resources, including—but not limited to—significant concentrations of prehistoric and historic archaeological sites, national scenic and historic trails, and Native American traditional cultural properties and sacred sites.

We appreciate the opportunity to provide these comments and we look forward to participating further in the PEIS process. Please contact me at (608) 249-7870 with any questions or concerns regarding these comments.

Sincerely,

Executive Director
Partnership for the National Trails System

Thank you for your comment, Kathleen Zimmerman.

The comment tracking number that has been assigned to your comment is SEDDsupp20125.

Comment Date: January 27, 2012 15:24:35PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20125

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Country: USA
Privacy Preference: Don't withhold name or address from public record
Attachment: NWF comments on Solar DPEIS Supplement FINAL.pdf

Comment Submitted:

NATIONAL WILDLIFE FEDERATION

Rocky Mountain Regional Center
2995 Baseline Road, Suite 300 Boulder, CO 80303 www.nwf.org

January 27, 2012

Draft Solar Energy Programmatic EIS
Argonne National Laboratory
9700 South Cass Avenue -- EVS/240
Argonne, Illinois 60439

Delivered via electronic and regular mail

Re: Comments on the Supplement to the DRAFT Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States

To Whom It May Concern:

These comments are submitted on behalf of the National Wildlife Federation (NWF). NWF appreciates the opportunity to submit these comments to the Department of Energy and the Bureau of Land Management [hereinafter Agencies]. NWF is submitting these comments today via electronic mail and forwarding a copy separately by mail.

As an organization, NWF represents the power and commitment of four million members and supporters joined by affiliated organizations in 48 states and territories and the District of Columbia. NWF and its affiliates have a long history of working to conserve the wildlife and wild places in the West. Many members of NWF and its affiliates use the lands and resources that will be impacted by utility-scale solar energy generation facilities constructed on federal public lands; they also use and enjoy wildlife resources that may be impacted by construction of these facilities on other federal lands, as well as state, private and tribal lands.

NWF also recognizes that climate change poses an enormous threat to both the human environment and the earth's biologic diversity. For that reason, NWF has called for a rapid transition to energy sources other than fossil fuels that contribute to greenhouse gas (GHG) emissions and climate change. The generation of electricity via solar energy, including utility-scale facilities, is an important component of that transition. Without immediate and decisive steps to curb GHG emissions, the long-term survival of many wildlife species is in jeopardy.

INTRODUCTION

NWF supports the Agencies' decision to supplement the *Draft Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States* [hereinafter DPEIS] released last year. The Supplement clearly reflects a willingness to respond to comments submitted by both conservationists and industry proponents. It also demonstrates the complexity of both promoting such a land-intensive use and conserving vital fish and wildlife habitats. NWF believes the Agencies truly are committed to developing a strategy for siting utility-scale solar energy generation facilities that meets both of those goals.

As NWF stated in its comments on the DPEIS, NWF wholeheartedly endorses the designation of Solar Energy Zones (SEZs). The SEZs represent a new approach on the part of BLM, one where the agency more fully exercises its authority to promote and manage commercial activities on public lands. NWF believes that this approach will avoid the fragmentation of important wildlife habitats that has occurred as a result of other commercial activities on public lands, such as oil and gas drilling. The concentration of development in the SEZs promotes the consolidation of related infrastructure (e.g., roads, transmission lines) resulting in less total land disturbance and reduced costs to both industry and consumers. NWF also believes that this approach will increase support for renewable energy projects by reducing opposition from other public land users.

NWF is happy to see that the Supplement modifies the BLM's preferred alternative as identified in the DPEIS in several respects. The Supplement proposes to:

1) eliminate from consideration several SEZs that were unacceptable either because of potential impacts on environmental resources, including fish and wildlife, or because the SEZs were unworkable for industry;
2) re-configure several SEZs in order to avoid conflicts with environmental resources;
3) clarify incentives for projects constructed within SEZs;
4) expand the categories of environmental resources that would be protected from solar energy development;
5) require BLM to conduct site-specific environmental impact analyses when individual locations and proposed uses are identified;
6) improve consultation with Tribes; and
7) commit BLM to the preparation of regional mitigation plans to compensate for the unavoidable loss of some public lands resources.

In its comments on the DPEIS, NWF also urged BLM to abandon the provisions of the preferred alternative which made 22 million acres of public land available for utility-scale solar energy generation facilities outside the SEZs. The Supplement does modify the methodology by which lands outside designated SEZs would be made available to development. Developers seeking to site projects outside SEZs would be required to seek a "variance." Alternatively, the Supplement identifies criteria for the designation of additional SEZs. So, the Supplement no longer states that 22 million acres of public land

will be openly available to the construction of utility-scale solar energy generation facilities. However, counting the lands where either variances may be granted or new SEZs designated, there is still 18-20 million acres of public land "on the table."

NWF remains concerned that the variance process as outlined in the Supplement is not restrictive enough to preserve the integrity of the SEZs. The SEZs are intended to prevent a hodge-podge of projects and transmission lines across the landscape. The variance process could undermine that goal. Instead of sorting through requests for variances, NWF urges BLM to devote its limited resources to the ongoing processes in California, Arizona, Colorado, and Utah to designate additional SEZs.

SPECIFIC COMMENTS

The Variance Process

NWF understands the appeal of providing sufficient flexibility to accommodate the "perfect" project even though it would be constructed outside an SEZ. Unfortunately, the variance process as currently proposed does not limit its reach to utility-scale solar energy generation facilities proposed for "perfect" sites on already-disturbed lands with little or no fish and wildlife values but with ready access to transmission and plentiful water. The variance process merely states that BLM will "consider" a number of factors when evaluating variance applications. Those factors include "[d]ocumentation that the project will be located in an area with low resource values and where minimal conflict with adjacent lands is likely." However, nothing in the variance process described in the Supplement specifically prohibits BLM, after due consideration, from granting a variance for a solar farm next to a backcountry trout stream, a project that might require the construction of miles of transmission and roads through valuable fish and wildlife habitat. Industry proponents have assured NWF that they have no interest in seeking variances for such locations. So, there would be little harm in clarifying that variances will only be granted for projects that can be brought online quickly, where the applicant has sufficient capital and access to markets, and the project will have very limited effects on other public lands resources because the resources already are significantly and permanently impacted by other human activities and infrastructure at or near the site.

The Competitive Process

NWF supports BLM's commitment to establish a competitive bidding structure for rights-of-way on public lands to construct utility-scale solar energy generation facilities. BLM is obligated to secure fair market value for the use of public resources. However, the competitive bidding process for access to lands within the SEZs must not become a deterrent to development within the SEZs. NWF urges BLM to develop a competitive bidding system that is extremely "user-friendly." BLM might also consider a bidding structure where cash bonuses or other bid components could be paid out over time so that the successful bidder could devote more financial capital initially to designing and building out the projects.

Mitigation
The Supplement states that "regional mitigation plans" will be developed for each SEZ (Supplement at 2-24), but contains little information about what these mitigation plans will include. While NWF recognizes the difficulty of developing comprehensive mitigation plans in the context of a programmatic document, it would be useful to establish some criteria for the content of these plans.

Due to the nature of utility-scale solar energy generation facilities, the efficacy of mitigation measures is severely limited (*see* DPEIS Table 5-10-2 at 5-95). The only truly effective mitigation will be to close lands to this development. Little can be done on-site except to reclaim those resources disturbed during construction – roads and staging areas that are no longer necessary once the facility is up and running. Regional mitigation plans will most likely have to address off-site mitigation.

NWF believes that no off-site mitigation proposal should be accepted without a thorough assessment of: the availability of other habitat, the feasibility of long-term restoration/enhancement/protection of alternative habitat, and the adequacy of funding to sustain the alternative habitat for the life of the project (including time required for final reclamation standards to be achieved). NWF has seen too many examples where industry has offered to "throw some money" at the problem without any analysis of the extent of the wildlife impacts or the availability of effective mitigation remedies.

NWF is heartened to see that BLM intends to ensure that any mitigation lands are protected to provide enduring conservation benefits and that as part of its environmental review of future projects, BLM will evaluate the success of its previous mitigation efforts. However, BLM should also make clear that risk of mitigation failure must not be borne entirely by fish and wildlife. BLM should state that all regional mitigation plans will establish binding thresholds for fish and wildlife losses; that reaching the thresholds will have consequences for both new and existing projects; and that lack of monitoring data is not an excuse to continue existing projects and authorize new ones.

Tribal Consultation
The Supplement states that:

> Processes under way will build upon government-to-government consultation undertaken between the BLM and Indian Tribes regarding the Draft Solar PEIS. The BLM ***expects*** these actions will continue through completion of the Solar PEIS, signing of the ROD, and beyond, as the agency considers project-specific solar applications to be reviewed under the policies 18 established by the national solar program.

Supplement at 2-82, *emphasis added.* Government-to-government consultation is an obligation mandated by both statute and treaty. Rather than "expect" consultation to continue, BLM is obligated to "ensure" consultation continues.

BLM conducted an ethnographic study for the SEZs located in Nevada and Utah, including information related to traditional uses of plants and animals, trails, and sacred

sites, to enable BLM to minimize impacts on cultural resources. Prior to the preparation of the Final Solar PEIS, BLM states it will contact other tribes not included in the study to ensure the inclusion of tribal traditional uses and cultural resources in other SEZs in other states (Supplement at 2-82). NWF urges BLM to pursue and fulfill fully this objective.

BLM acknowledges that individual SEZ action plans contain data gaps, stating:

> The BLM will prioritize the collection of additional data and analysis in those SEZs that are most likely to be developed in the near future. Some of the items identified in the action plans will be completed by the BLM and presented in the Final Solar PEIS. Data collection not completed by the BLM (as part of the Final Solar PEIS or through other efforts) would likely be required of developers as part of site-specific tiered analysis for future projects.

Supplement at C-1. Appendix C also indicates that substantial data gaps exist in regards to cultural resources and cultural inventory assessments for the SEZs. BLM is obligated to ensure these inventories are conducted for site-specific projects and that government-to-government consultation with tribes is carried out. Consultation and cultural resource assessments should aim to avoid, or at the very least minimize, the impacts of solar projects to cultural resources.

Designated SEZs

In its comments on the DPEIS, NWF pointed out that several of the SEZs identified in the DPEIS included vital habitats for Greater sage-grouse and big game species. These observations were based upon GIS data supplied by state wildlife agencies. While a couple of these SEZs have been modified and no longer include these habitats, there are several that remain of concern to NWF.

De Tilla Gulch SEZ in Colorado, as originally proposed in the DPEIS, contains both elk severe winter range and pronghorn winter concentration areas (Supplement at C-101). The Supplement states that pronghorn seasonal ranges have been excluded but does not address the severe winter range for elk (*Id.* at C-102).

The Gold Point SEZ in Nevada contains habitat for the Greater sage-grouse. The Supplement states that "pre-disturbance surveys" will be conducted within this SEZ for sensitive species, including sage-grouse, (Supplement at C-211 to C-214) and that "suitable" habitats will be mapped. The Supplement does not indicate that these habitats will be excluded from development. The same is true of the Milford Flats South SEZ in Utah where the SEZ includes sage-grouse habitat and the proposed transmission corridor would cross brood-rearing habitat. The Wah Wah Valley SEZ in Utah still includes significant sage-grouse habitat.

Several of the proposed SEZs include lands that provide movement corridors for Desert bighorn sheep.[1] BLM acknowledges this important wildlife use; yet, with the exception of suggested limits on fencing, nothing in the SEZ-Specific Design Features for SEZs includes measures to ensure these routes retain their value as movement corridors. BLM must identify these corridors and commit to effective conservation measures. For all SEZs, requiring that migratory bottlenecks are not created within these corridors both on and off the SEZs should be part of the program components described in the DPEIS in Appendix A and in Specific Design Features.

CONCLUSION

As an organization, NWF wants the SEZ strategy for development on public lands to succeed. To be successful, NWF recognizes that the SEZs must work not just for conservation of fish and wildlife habitat but also for industry proponents and for BLM itself. Once the DPEIS is finalized NWF urges BLM to continue to collect site-specific information regarding resources at risk and potential impacts so that processing applications for projects within SEZs can be as streamlined as possible. The collection of this data can also help inform the designation of additional SEZs. NWF supports BLM's decision to focus some attention on the transmission issues associated with getting solar power onto the grid. Transmission access could be a serious roadblock to the viability of the SEZs and to individual projects. Both the collection of additional information on impacts and the availability of transmission will make the SEZs more workable for industry proponents.

NWF also urges BLM to tighten the variance process so that there remain adequate incentives to drive development to the SEZs and conserve other important public lands resources. Otherwise, fish and wildlife habitat will continue to be "nickel and dimed" away. This is bad for fish and wildlife and for the agency. BLM will continue to have to respond to applications seeking variances across the landscape instead of concentrating its limited resources on permitting projects inside the SEZs. Given that the SEZs identified in the Supplement provide more acreage than is necessary to meet projected demand, it makes no sense for BLM to waste time reviewing applications for projects that are both unwise and unnecessary.

Sincerely,

Kathleen C. Zimmerman
Senior Policy Advisor, Public Lands Program
National Wildlife Federation

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[1] *See, e.g.*, Dry Lake Valley North SEZ in Nevada (Supplement at C-198); Gold Point SEZ in Nevada (Supplement at C-213); Millers SEZ in Nevada (Supplement at C-232); Afton SEZ in New Mexico (Supplement at C-251).

Thank you for your comment, Rob Mrowka.

The comment tracking number that has been assigned to your comment is SEDDsupp20126.

Comment Date: January 27, 2012 15:33:25PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20126

First Name: Rob
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Attachment: CBD comments on the supplement to the Solar PDEIS - final.pdf

Comment Submitted:

I am submitting a 10-page letter and two attachments via the uploader contained on this page.

CENTER for BIOLOGICAL DIVERSITY Because life is good.

Shannon Stewart, BLM Solar PEIS Project Lead
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Argonne National Laboratory
9700 S. Cass Avenue
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Argonne, IL 60439

January 27, 2012

Electronically via: http://www.solareis.anl.gov/involve/comments/index.cfm

Subject: Center for Biological Diversity Comments on the Supplement to the Draft Solar PEIS

Dear Ms. Stewart:

Please accept and fully consider these comments on the Supplement to the Draft Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States ("Supplement") on behalf of The Center for Biological Diversity ("Center"). To avoid repetition, we incorporate by reference our previous comments submitted for Nevada via a Wilderness Society letter dated April 18, 2011 and for California our organizational letter dated May 2, 2011.

The Center is a not for profit international conservation organization dedicated to working through environmental advocacy, science, law and creative media to secure a future for all species, great or small, hovering on the brink of extinction. The development of renewable energy is a critical component of efforts to reduce greenhouse gas emissions, avoid the worst consequences of global warming, to comply with legislation and Executive Orders and to assist California and Nevada in meeting legislative mandates for emission reductions. The Center strongly supports the development of renewable energy production, and the generation of electricity from solar power, in particular. However, like any project, solar power projects should be thoughtfully planned to minimize impacts to the environment. In particular, renewable energy projects should avoid impacts to sensitive species and habitats, and should be sited in proximity to the areas of electricity end-use in order to reduce the need for extensive new transmission corridors and lines and the efficiency loss associated with extended energy transmission. Only by maintaining the highest environmental standards with regard to local impacts, and effects on species and habitat, can renewable energy production be truly sustainable.

The Center wishes to acknowledge the affirmative response the Bureau of Land Management ("BLM") and Department of Energy ("DOE") have made in the supplement in response to comments we and others submitted to the draft environmental impact statement ("DEIS"). By doing so, you strengthen our commitment to working with you in the planning and development of a viable renewable energy program on the federal public lands.

The BLM should continue to refine the Programmatic Environmental Impact Statement (PEIS) through the Final PEIS and Record of Decision (ROD), carrying forward the zone-based focus and most other elements of the Supplement, and sign the ROD by fall 2012.

While these comments focus on proposals for California and Nevada, many of our comments are wider reaching and apply to the entire six western state planning region.

1. Alternatives

The Center urges the BLM and DOE ("agencies") to select the "Modified SEZ Alternative" ("SEZ alternative"). We base our recommendation on several considerations.

First, the desert lands of the southwest are rich in natural resources and biological diversity as well as providing ecosystem services invaluable to the planet and human society. As such the footprint of industrialized renewable energy plants should be minimized to the maximum extent practical and sited with great care and abundant forethought and planning. Only the SEZ alternative would meet this concern and consideration.

The second comes from an examination of the needs for solar energy development acreage estimated in the agencies' "reasonably foreseeable development scenario"[1] and the acres of potentially developable BLM-administered lands under the alternative analyzed in the PDEIS.[2]

Considering all six states, the acreage in proposed SEZs exceeds the needs of the reasonable foreseeable development scenario by over 71,000 acres. At the same time, the agencies' preferred "modified program alternative" ("preferred alternative") would exceed the projected needs by over 20 million acres.

The SEZ alternative provides a more reasoned template for solar developers to search for appropriate sites for development while protecting pristine federal lands. The preferred alternative, while more restrictive than the "no action alternative", would continue the problems associated with the "fast track process" where solar developers staked out areas for development in a helter-skelter fashion, leading to major conflicts and impacts on native ecosystems and other land uses and users.

The Center realized that the preferred alternative is enlightened by the creation of exclusionary screens[3], a proposed "Variance process"[4], and stricter pre-development requirements found in BLM Instructional Memorandums, but we still feel that a development process focused on previously agreed upon SEZs would better serve the expeditious development of solar renewable energy, focus necessary transmission to load centers preventing transmission route proliferation as well as protect valuable and irreplaceable desert ecosystems. The option for development in variance areas undermines the intended focus on development in SEZs and exponentially complicates transmission planning.

[1] Table 1.6-1
[2] Table 2.3-1
[3] Table 2.2-1
[4] Section 2.2.2.3-1

The agencies' exclusionary screens and variance process, while a great improvement over the current no action scenario, still fail to address important ecological considerations and impacts of solar development on pristine desert lands. Areas of our concern include key desert tortoise habitat that is currently outside Desert Wildlife Management Areas ("DWMA") or Areas of Critical Environmental Concern ("ACEC"), including areas identified as desert tortoise connectivity areas; BLM Sonoran desert tortoise Category I and Category II management units[5] and Habitat Management Areas (also referred to as Wildlife Habitat Management Areas); Unusual Plant Assemblages (UPAs), sage grouse and critical big game habitat not currently identified for protections in Resource Management Plans; areas important for wildlife movements and habitat connectivity; areas with high concentrations of eagles and other raptors; and, lands containing habitat for state and federally listed plant and animal species, and other lands providing habitat for imperiled but unlisted plant and animal species.

The proposed variance process would entail a potential for a high degree of conflict over siting, command a disproportionately high demand of agency resources, complicate transmission planning and threaten the streamlining envisioned for development in SEZs.

Finally, the supplement outlines a process whereby new SEZs could be indentified and created should a need arise.[6] Rather than allow the solar prospecting to continue under the preferred alternative in the "variance areas", the Center feels that developer needs for lands outside the proposed SEZs should be addressed through a new SEZ identification process which instills a bigger picture approach versus the siting of individual developer projects.

2. Desert tortoise

Recent peer-reviewed scientific literature identifies that the effects of the envisioned industrial solar development in the southwest deserts may not be compatible with wildlife conservation, and that is especially true for the Agassiz's desert tortoise (the federally listed threatened Mojave Population).[7] Therefore the agencies should apply a precautionary principle and areas that have been identified by the U.S. Fish and Wildlife Service as essential connectivity areas for desert tortoise[8] should be given the highest level of protection as Areas of Critical Environmental Concern (ACECs). These ACECs should be codified as part of the land management plan amendments required by the PEIS.

With regards to the agencies' question on desert tortoise variance requirements posed in the supplement page 2-35, if variances were to be allowed, we would urge the agencies to select "Option2", strict restrictions for any projects proposed in variance areas within the range of both Mojave and Sonoran desert tortoises.

[5] Identified in: Bureau of Land Management. 1990. Strategy for desert tortoise habitat management on public lands in Arizona. Arizona State Office, Bureau of Land Management, Department of the Interior.
[6] Appendix D
[7] Lovich and Ennen 2011
[8] USFWS 2011

The organization, Basin and Range Watch, recently submitted a proposal for the establishment of an ACEC in the Ivanpah Valley to the BLM for their consideration. Since this supplement envisions amendments to existing Resource Management Plans, the Center wishes to formally endorse this proposal, at least in concept. The Ivanpah Valley has been besieged by ill-placed solar energy developments and proposals. At the same time, it is important habitat for a genetically distinct population of desert tortoises that cross the California-Nevada state line. The conservation and recovery efforts to protect this segment of the desert tortoise population would be advanced by the creation of this ACEC.

The Ivanpah Valley is a unique valley spanning the state line between California and Nevada. Because of this biologically arbitrary boundary, impacts to biological resources from renewable energy developments in different parts of the same valley are evaluated by different states. The Ivanpah Valley is important because it is home to a dense population of the federally threatened desert tortoise as well as rare plan communities. A small portion of the valley in California is designated as a desert tortoise Area of Critical Environmental Concern (ACEC) under the Northern and Eastern Mojave Plan. A portion of federally designated critical habitat is also identified in the southeastern part of the valley.

Surveys on both sides of the state line indicate an extant, robust population of desert tortoise. In fact, the U.S. Fish and Wildlife Service's (FWS) October 10, 2010 Biological Opinion on the Ivanpah Solar Electric Generating Station (ISEGS), which is located in the southwestern part of the valley, states at p. 63: "We recommend that the Bureau amend the California Desert Conservation Area Plan to prohibit large-scale development (e.g., solar energy facilities, wind development, etc.) within the area bounded by Interstate 15, the State line, and Clark Mountains." This recommendation was limited to the land on the California side of the border, because the local office of the consulting agencies' jurisdiction was in California.

As the BLM is well aware, the ISEGS project quickly reached its "take" limit of desert tortoises and had to re-initiate consultation with the Service, which resulted in a new Biological Opinion on June 10, 2011. In the new Biological Opinion, the FWS expanded its recommendation to include the whole of the Ivanpah Valley, stating "We recommend that the Bureau amend the necessary land use plans to prohibit large-scale development (e.g., solar energy facilities, wind development, etc.) within all remaining portions of the Ivanpah Valley to reduce fragmentation within the critical linkage between the Ivanpah Critical Habitat Unit and the Eldorado Critical Habitat Unit." (at pg. 92-93). This new recommendation recognizes that the whole valley is important to the survival of this population of desert tortoise, and that the linkage between the Ivanpah Critical Habitat Unit, which is in California, and the Eldorado Critical Habitat Unit, which is in Nevada, must be kept intact. In line with the direction already identified by the FWS, BLM-administered lands within the Ivanpah Valley should be included as an exclusion area for variance applications.

Although BLM is undertaking a new cumulative effects analysis for a portion of the Ivanpah Valley (and which does not include much of the valley in Nevada), it has not finished the analysis. Nor has the BLM developed either a comprehensive bi-state assessment or a long-term management plan for this important valley. Meanwhile, the entire Ivanpah Valley has been nominated as an ACEC, in order to provide further safeguards for the desert tortoise in this

important valley as well as a suite of very rare plants and significant cultural values present there. To avoid further degradation of the valley, we urge that it be excluded from variance applications.

3. Pending solar applications

The agencies' in their supplement propose to handle solar development applications outside of proposed SEZs and submitted before the date of publication of the supplement as pending applications under existing policies.[9] This results in 79 such "pending" applications. This also results in a continuation and perpetuation of a "solar land rush process" that results in poor siting decisions, unintended environmental impacts and often severe cumulative impacts. Such projects are not adequately evaluated as to how they fit into the landscape both environmentally as well as in terms of required transmission infrastructure in the SPEIS and should be considered as part of the base-line.

By essentially "grandfathering" in the proposed class of "pending" applications, the agencies complicate and compound the permitting and approval process, adding additional burdens to scarce agency resources and potentially slowing the permitting process for projects within SEZs and ultimately defeating the purpose of the PEIS.

As a case in point, the pending application process outlined in the supplement[10] artificially imposes an unnecessary process entailing multiple complex steps and conditions. The BLM admits that it has determined that, "in appropriate circumstances, it can rely on the broad discretion it has under FLPMA to deny ROW applications prior to completing the NEPA process if such applications do not meet due diligence requirements and/or environmental criteria. Such decisions must be made with regard for the public interest and be supported by reasoned analysis and an adequate administrative record. Decisions to deny pending applications must be assessed on a case-by-case basis. BLM's denial of an application constitutes a "final agency action" and is therefore subject to administrative appeal to the Interior Board of Land Appeals (IBLA)."[11]

A review of the applications deemed to be "pending"[12] reveals that over 685,000 acres are encumbered by this designation. A vast majority of the 79 pending applications were filed prior to 2010. Taken together, these two facts demonstrate the speculative approach taken in filing these applications and the likely lack of analysis and due diligence that went into them.

The Center requests that the agencies reconsider their current definition of "pending". We suggest a threshold for consideration under existing policies and procedures be the publishing in the Federal Register of a Notice of Intent for the proposed solar development project. Any project lacking a Notice prior to the date that the supplement was noticed in the Federal Register would fall under the decision coming out of the PDEIS process.

[9] Table 1.7-1
[10] Pages 1-10 – 1-12
[11] Page 1-10
[12] Appendix A

4. **Adherence to existing wildlife management policies should be affirmed**

The Solar PEIS should explicitly affirm that BLM land management policies, except where specifically modified in accordance with the Solar PEIS, will continue to guide land management and planning decisions. In particular, we point to current policies guiding the management of wildlife policies on public lands reflected in:

- Manual 6840 on Special Status Species Management for "sensitive" species – i.e., those at-risk, but not yet listed – which directs the BLM to "improve the condition of the species' habitat" or "minimize or eliminate threats affecting the status of the species";
- Manual 6500 on Wildlife and Fisheries Management which focuses on policy to "manage habitat with emphasis on ecosystems to ensure self-sustaining populations and a natural abundance and diversity of wildlife, fish, and plant resources on public lands" and further calls for the agency to "increase the amount and quality of habitat available"; and
- Handbook 4180 on BLM Rangeland Health Standards which states that "[h]abitats are, or are making significant progress towards being restored or maintained for Federal threatened and endangered species, Federal Proposed, Category 1 and 2 Federal candidate and other special status species."

In all these cases, the BLM's existing wildlife policy requires more than maintenance of the status quo. As such, these same policies apply to decisions affecting the siting, permitting, and development of solar projects on public lands; and the Solar PEIS should reiterate the importance of complying with agency wildlife management policies.

5. Comments on specific proposed SEZs

The Center appreciates the substantive changes made in the proposed SEZs in response to comments that were submitted on the PDEIS. Our previously stated concern about the lack of available ground water to support certain solar technologies remains for all proposed SEZs. We now offer these additional observations on the proposed SEZs as they appear in the supplement.

<u>California</u>

As part of our general concerns about water resources, which are highly important resources in the arid southwest and likely to be further impacted by climate change, we also request that the Amargosa River watershed in California be removed from development consideration because of the innumerable threatened and endangered species that rely upon this watershed for existence (including the endangered Amargosa vole, the critically endangered Devil's Hole pupfish, the endangered Amargosa niterwort, the threatened Ash Meadows gumplant, the endangered least Bell's vireo, the rare Amargosa toad, and the rare Tecopa bird's beak among others) and the Amargosa's federal designation as a Wild and Scenic River in this part of its reach.

We support the agencies' decision to delete both the Pisgah and Iron Mountain SEZs which were included in the original DPEIS. Both of these areas would have had significant conflicts with natural resource values.

The SPEIS proposes the large Riverside East SEZ and within that SEZ identifies "non-development areas". The non-development areas appear to capture parts of, but not the entire important sand transport corridor that originates in Joshua Tree National Park's Pinto basin and flows to the limits of the agricultural areas south of Blythe as well as the Mc Coy wash. Regarding the sand transport corridor, the agencies should exclude additional contiguous areas of the sand transport corridor and sand source areas, for a number of reasons. First, disruption of sand transport corridor functionality near corridor sources affects all downwind resources. Secondly, sand dune habitat is a rare resource on the landscape. The geological and geographical features that result in sand transport and dune formation are extremely limited. The species that have evolved to rely on this unique habitat are also quite rare and typically endemic only to dune systems. In fact the southern most range of the Mojave fringe-toed lizard occurs only in this area, and based on the fact that this population is living in the lowest elevation and most arid part of its range, likely has greater capacity to survive climate changes modeled for the southwest deserts and therefore should be protected. Thirdly, because of the uniqueness of the Aeolian habitat, impacts to sand transport systems are therefore comparatively greater than to other more common habitat types. Impacts to sand transport systems are also much more challenging to mitigate because of the limited habitat type and complex Aeolian requirements that form and maintain the sand transport and dune habitat. Lastly, any facility put in or even adjacent to a sand transport corridor will suffer significant impacts from sand abrasion, require regular clearing of sand from structures, and generally increasing maintenance and operational costs.[13]. Therefore we request that the EIS take a second hard look at the sand transport corridor in the Riverside East SEZ and exclude all areas that help to maintain functionality of that important corridor as development areas. In addition, the microphyll woodlands as identified and mapped in the BLM's Northern and Eastern Colorado Plan (NECO) need to be more closely examined for conservation beyond the McCoy Wash.

As a general matter, significant conservation investments have been made in the California deserts, including the largest nonprofit land acquisition in U.S. history donated to the American people by the Wildlands Conservancy[14]. To BLM alone, over 482,000 acres were donated for conservation purposes. In addition other private lands have been acquired and donated to BLM as mitigation for impacts to rare desert species and habitats. These types of lands should be removed from development consideration because they were purposefully donated to BLM as conservation parcels.

The document states that "BLM will rely on the California DRECP planning effort... and the California West Chocolate Mountains Renewable Energy Evaluation Area (REEA) effort to identify new or expanded SEZs in these planning areas in the near term." (DEIS at 2-28). We encourage the agencies to craft a FPEIS that indeed allows the flexibility of incorporating the DRECP planning effort into California BLM land use plans as an amendment.

Numerous issues that the Center brought up in our California-specific comments on the DEIS remain unaddressed in the supplement and we refer you to those issues from our previous comments including:

[13] The lifespan of these projects also will likely be decreased.
[14] http://wildlandsconservancy.org/conservation_california.html

- Environmental baseline still not adequately described;
- Multiple Use Classes of the land proposed for SEZ and variance lands are not identified nor are the impacts of loss of multiple use in favor of a single use for industrial purposes
- The effects of the disturbance of desert pavement and air quality issues;
- The effects of the proposal on Reserved Water Rights in the California Desert
- Clarification of the Special Recreation Management Areas (SRMAs) issues
- Cumulative Impacts Analysis
- Alternatives Analysis

We request that these issues be addressed.

Nevada

The Center supports the elimination of the Delamar and East Mormon Mountain SEZs.

We offer the following addition comments on some of the remaining SEZs.

Amargosa SEZ
The Center appreciates the positive approach the agencies took in addressing the concerns the Center raised in previous comments. The new boundaries do a much better job at protecting desert ecosystems and rare species.

We remain concerned that nay development in the Amargosa watershed proceed with utmost caution and consideration of the innumerable threatened and endangered species that rely upon this watershed for existence (including the endangered Amargosa vole, the critically endangered Devil's Hole pupfish, the endangered Amargosa niterwort, the threatened Ash Meadows gumplant, the endangered least Bell's vireo, the rare Amargosa toad, and the rare Tecopa bird's beak among others).

Gold Point SEZ
In our comments on the DEIS, we raised the concern about the lengthy proposed transmission corridor which do not appear to have been addressed in the supplement. The assumed new transmission corridor would cross extremely dense Joshua tree woodland and scenic remote BLM areas used for hiking, camping, and other recreational activities, as well as potentially impact the historic mining town of Goldfield. The BLM should include analysis of potential impacts associated with these issues in the FPEIS, as well as measures to avoid, minimize or mitigate such impacts. We offer the suggestion that the transmission line follow the existing roadway that passes through the SEZ.

Millers SEZ
The action plan for the SEZ should include surveys for Tecopa bird's beak, an alkali flat obligate plant that could occur in the southern part of the SEZ or further south, and could be affected by development. It should also include surveys for Wong's pyrig, a springsnail that could occur south of the SEZ and be indirectly affected by groundwater modification.

Further, special considerations are needed in the SEZ's design to avoid and mitigate for impacts on migrating neo-tropical birds that traditionally use the area as a stopping point.

6. The BLM should closely coordinate the PEIS with other BLM planning efforts including the Las Vegas-Pahrump Resource Management Plan revision

As noted in the Supplement, in addition to the PEIS, the BLM is also undertaking efforts to identify renewable energy priority areas such as new SEZs in other ongoing planning efforts, including the Las Vegas-Pahrump RMP revision currently underway. (Supplement at p. 2-32) The BLM should take advantage of these opportunities to use more localized planning efforts to identify low-conflict priority areas for solar development, and the agency should ensure that these efforts are closely coordinated with the PEIS.

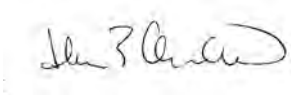
7. The BLM should provide a 60 day public comment period on the Final PEIS

There will be a significant amount of new information in the Final PEIS, including updated SEZ-specific design features, SEZ action plans, cumulative impacts analysis and monitoring and adaptive management protocols. For this reason, the BLM should provide a 60 day public comment period on the Final PEIS. While we continue to encourage the BLM to complete the PEIS in a thorough and timely manner, it is very important that the public be given the opportunity to provide meaningful input on this new information in order to satisfy the requirements of the National Environmental Policy Act. Further, this comment period should not substantially delay the timeline for completion of the PEIS, because BLM's regulations obligate the BLM to provide a 30-day protest period and a concurrent 60-day governor consistency review of land use plan amendments. 40 C.F.R. §§ 1610.5-2; 1610.5-3. The proposed 60-day public comment period would encompass these same timeframes.

In conclusion, the Center thanks the agencies for proposing thoughtful approaches to solar energy development on public lands that will focus appropriate large-scale solar energy development needed to help alleviate the effects of climate change to areas with lower conflicts and adverse impacts to desert ecosystems. This approach will help ensure that the natural and cultural resources of the federal public lands are protected for future generations. We look forward to working with the agencies as you finalize the PEIS over the coming months.

Thank you for your thorough consideration of these comments.

Sincerely yours in conservation,



Rob Mrowka
Ecologist/Nevada Conservation Advocate

Ileene Anderson
Biologist/Desert Program Director

Attachments: (sent separately)

Lovich, J. E. and J.R. Ennen 2011. Wildlife Conservation and Solar Energy Development in the Desert Southwest, United States. BioScience 61 (12): 982-992.

U.S. Fish and Wildlife Service (USFWS) 2011. BLM Solar Energy Development Program with USFWS-Recommended Desert Tortoise Linkages between Critical Habitat/DWMA Units. (Map) Pgs. 1

Thank you for your comment, Rob Mrowka.

The comment tracking number that has been assigned to your comment is SEDDsupp20127.

Comment Date: January 27, 2012 15:35:31PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20127

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Privacy Preference: Don't withhold name or address from public record
Attachment: Lovich Ennen 2011 Wildlife Conservation Solar Energy Development in the Desert SW.pdf

Comment Submitted:

document 2 of 3

Wildlife Conservation and Solar Energy Development in the Desert Southwest, United States

JEFFREY E. LOVICH AND JOSHUA R. ENNEN

Large areas of public land are currently being permitted or evaluated for utility-scale solar energy development (USSED) in the southwestern United States, including areas with high biodiversity and protected species. However, peer-reviewed studies of the effects of USSED on wildlife are lacking. The potential effects of the construction and the eventual decommissioning of solar energy facilities include the direct mortality of wildlife; environmental impacts of fugitive dust and dust suppressants; destruction and modification of habitat, including the impacts of roads; and off-site impacts related to construction material acquisition, processing, and transportation. The potential effects of the operation and maintenance of the facilities include habitat fragmentation and barriers to gene flow, increased noise, electromagnetic field generation, microclimate alteration, pollution, water consumption, and fire. Facility design effects, the efficacy of site-selection criteria, and the cumulative effects of USSED on regional wildlife populations are unknown. Currently available peer-reviewed data are insufficient to allow a rigorous assessment of the impact of USSED on wildlife.

Keywords: solar energy development, Mojave Desert, Sonoran Desert, wildlife, desert tortoises

The United States is poised to develop new renewable energy facilities at an unprecedented rate, including in potentially large areas of public land in the Southwest. This quantum leap is driven by escalating costs and demand for traditional energy sources from fossil fuels and by concerns over global climate change. Attention is focused largely on renewable forms of energy, especially solar energy. The potential for utility-scale solar energy development (USSED) and operation (USSEDO) is particularly high in the southwestern United States, where solar energy potential is high (USDOI and USDOE 2011a) and is already being harnessed in some areas. However, the potential for USSEDO conflicts with natural resources, especially wildlife, is also high, given the exceptional biodiversity (Mittermeier et al. 2002) and sensitivity (Lovich and Bainbridge 1999) of arid Southwest ecosystems, especially the Mojave (Randall et al. 2010) and Sonoran Deserts, which are already stressed by climate and human changes (CBI 2010). In addition, the desert Southwest is identified as a "hotspot" for threatened and endangered species in the United States (Flather et al. 1998). For these reasons, planning efforts should consider ways to minimize USSEDO impacts on wildlife (CBI 2010). Paradoxically, the implementation of large-scale solar energy development as an "environmentally friendly" alternative to conventional energy sources may actually increase environmental degradation on a local and on a regional scale (Bezdek 1993, Abbasi and Abbasi 2000) with concomitant negative effects on wildlife.

A logical first step in evaluating the effects of USSEDO on wildlife is to assess the existing scientific knowledge. As renewable energy development proceeds rapidly worldwide, information is slowly accumulating on the effects of USSEDO on the environment (for reviews, see Harte and Jassby 1978, Pimentel et al. 1994, Abbasi and Abbasi 2000). Gill (2005) noted that although the number of peer-reviewed publications on renewable energy has increased dramatically since 1991, only 7.6% of all publications on the topic covered environmental impacts, only 4.0% included discussions of ecological implications, and less than 1.0% contained information on environmental risks. A great deal of information on USSEDO exists in environmental compliance documents and other unpublished, non-peer-reviewed "gray" literature sources. Published scientific information on the effects on wildlife of any form of renewable energy development, including that of wind energy, is scant (Kuvlesky et al. 2007). The vast majority of the published research on wildlife and renewable energy development has been focused on the effects of wind energy development on birds (Drewitt and Langston 2006) and bats (Kunz et al. 2007) because of their sensitivity to aerial impacts. In contrast, almost no information is available on the effects of solar energy development on wildlife.

From a conservation standpoint, one of the most important species in the desert Southwest is Agassiz's desert

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tortoise (*Gopherus agassizii*; figure 1). Distributed north and west of the Colorado River, the species was listed as *threatened* under the US Endangered Species Act in 1990. Because of its protected status, Agassiz's desert tortoise acts as an "umbrella species," extending protection to other plants and animals within its range (Tracy and Brussard, 1994). The newly described Morafka's desert tortoise (*Gopherus morafkai*; Murphy et al. 2011) is another species of significant conservation concern in the desert Southwest, found east of the Colorado River. Both tortoises are important as ecological engineers who construct burrows that provide shelter to many other animal species, which allows them to escape the temperature extremes of the desert (Ernst and Lovich 2009). The importance of these tortoises is thus greatly disproportionate to their intrinsic value as species. By virtue of their protected status, Agassiz's desert tortoises have a significant impact on regulatory issues in the listed portion of their range, yet little is known about the effects of USSEDO on the species, even a quarter century after the recognition of that deficiency (Pearson 1986). Large areas of habitat occupied by Agassiz's desert tortoise in particular have potential for development of USSED (figure 2).

Figure 1. Agassiz's desert tortoise (*Gopherus agassizii*). Large areas of desert tortoise habitat are developed or being evaluated for renewable energy development, including for wind and solar energy. Photograph: Jeffrey E. Lovich.

In this article, we review the state of knowledge about the known and potential effects, both direct and indirect, of USSEDO on wildlife (table 1). Our review is based on information published primarily in peer-reviewed scientific journals for both energy and wildlife professionals. Agassiz's desert tortoise is periodically highlighted in our review because of its protected status, wide distribution in areas considered for USSEDO in the desert Southwest, and well-studied status (Ernst and Lovich 2009). In addition, we identify gaps in our understanding of the effects of USSEDO on wildlife and suggest questions that will guide future research toward a goal of mitigating or minimizing the negative effects on wildlife.

Background on proposed energy-development potential in the southwestern United States

The blueprint for evaluating and permitting the development of solar energy on public land in the region, as is required under the US National Environmental Policy Act (USEPA 2010), began in a draft environmental impact statement (EIS) prepared by two federal agencies (USDOI and USDOE 2011a). The purpose of the EIS is to "develop a new Solar Energy Program to further support utility-scale solar energy development on BLM [US Bureau of Land

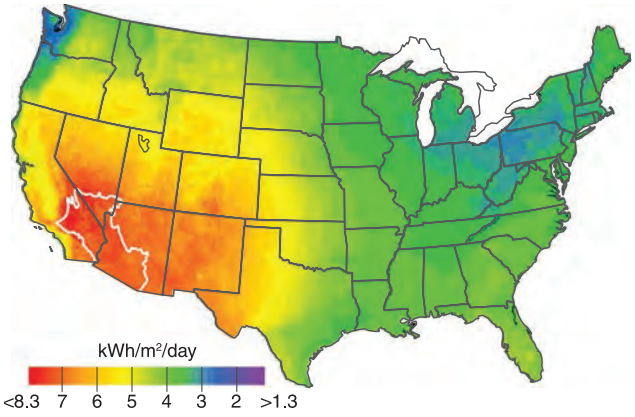

Figure 2. Concentrating solar energy potential (in kilowatt-hours per square meter per day [kWh/m²/day]) of the United States. The map shows the annual average direct normal solar resource data based on a 10-kilometer satellite-modeled data set for the period from 1998 to 2005. Refer to NREL (2011) for additional details and data sources. The white outline defines the approximate composite ranges of Agassiz's (west of the Colorado River) and Morafka's (east of the Colorado River) desert tortoises (Murphy et al. 2011) in the United States, both species of significant conservation concern. This figure was prepared by the National Renewable Energy Laboratory for the US Department of Energy (NREL 2011). The image was authored by an employee of the Alliance for Sustainable Energy, LLC, under Contract no. DE-AC36-08GO28308 with the US Department of Energy. Reprinted with permission from NREL 2011.

Table 1. List of known and potential impacts of utility-scale solar energy development on wildlife in the desert Southwest.

Impacts due to facility construction and decommissioning	Impacts due to facility presence, operation, and maintenance
Destruction and modification of wildlife habitat	Habitat fragmentation and barriers to movement and gene flow
Direct mortality of wildlife	Noise effects
Dust and dust-suppression effects	Electromagnetic field effects
Road effects	Microclimate effects
Off-site impacts	Pollution effects from spills
Destruction and modification of wildlife habitat	Water consumption effects
	Fire effects
	Light pollution effects, including polarized light
	Habitat fragmentation and barriers to movement and gene flow
	Noise effects

Management] -administered lands… and to ensure consistent application of measures to avoid, minimize, or mitigate the adverse impacts of such development" (p. ES-2). As of February 2010, the BLM had 127 active applications for solar facilities on lands that the BLM administers. According to USDOI and USDOE (2011a), all of the BLM-administered land in six states (California, Arizona, Utah, Nevada, New Mexico, and Colorado) was considered initially, for a total of 178 million hectares (ha). Not all of that land is compatible with solar energy development, so three alternative configurations are listed by USDOI and USDOI (2011a) for consideration, ranging from 274,244 to 39,972,558 ha. The larger figure is listed under the *no action alternative* where BLM would continue to use existing policy and guidance to evaluate applications. Of the area being considered under the two action alternatives, approximately 9 million ha meet the criteria established under the BLM's preferred action alternative to support solar development. Twenty-five criteria were used to exclude certain areas of public land from solar development and include environmental, social, and economic factors. The preferred alternative also included the identification of proposed *solar energy zones* (SEZs), defined as "area[s] with few impediments to utility-scale production of solar energy" (USDOI and USDOE 2011a, p. ES-7). By themselves, these SEZs constitute the nonpreferred action alternative of 274,244 ha listed above. Maps of SEZs are available at *http://solareis.anl.gov/documents/dpeis/index.cfm*.

Several sensitive, threatened, or endangered species are being considered within the EIS, but Agassiz's desert tortoise is one of only four species noted whose very presence at a site may be sufficient to exclude USSED in special cases (see table ES.2-2 in USDOI and USDOE 2011a). The potential effects of USSEDO are not trivial for tortoises or other wildlife species. Within the area covered in the draft EIS by USDOI and USDOE (2011a), it is estimated that approximately 161,943 ha of Agassiz's desert tortoise habitat will be directly affected. However, when including direct and indirect impacts on habitat (excluding transmission lines and roads that would add additional impacts; see Lovich and Bainbridge 1999, Kristan and Boarman 2007), it is estimated that approximately 769,230 ha will be affected. Some SEZs are adjacent to critical habitat designated for the recovery of Agassiz's desert tortoise, and this proximity is considered part of the indirect impacts.

On 28 October 2011, while this paper was in press, the BLM and US Department of Energy released a supplement to the EIS (USDOI and USDOE 2011b, 2011c) after receiving more than 80,500 comments. The no action alternative remains the same as in the EIS. The new preferred alternative (slightly reduced to 8,225,179 ha as the modified program alternative) eliminates or adjusts SEZs (now reduced to 115,335 ha in 17 zones as the modified SEZ alternative) to ensure that they are not in high-conflict areas and provides incentives for their use. The new plan also proposes a process to accommodate additional solar energy development outside of SEZs and to revisit ongoing state-based planning efforts to allow consideration of additional SEZs in the future.

The impacts of USSED on wildlife: Effects due to construction and decommissioning

The construction and eventual decommissioning of solar energy facilities will have impacts on wildlife, including rare and endangered species, and on their habitats in the desert (Harte and Jassby 1978). These activities involve significant ground disturbance and direct (e.g., mortality) and indirect (e.g., habitat loss, degradation, modification) impacts on wildlife and their habitat (Kuvlesky et al. 2007). Solar energy facilities require large land areas to harness sunlight and convert it to electrical energy. According to Wilshire and colleagues (2008), photovoltaic panels with a 10% conversion efficiency would need to cover an area of about 32,000 square kilometers, or an area a little smaller than the state of Maryland, to meet the current electricity demands of the United States. Many of the areas being considered for the development of solar energy in the Mojave and Sonoran Deserts are, at present, relatively undisturbed (USDOI and USDOE 2011a).

The extent of surface disturbance of USSED is related to the cooling technology used. Because of the scarcity of water in the desert Southwest region, dry-cooling systems, which consume 90%–95% less water than wet-cooling systems (EPRI 2002), are becoming a more viable option for concentrating solar facilities. Although wet-cooling systems are more economical and efficient, they consume larger amounts of water per kilowatt-hour (Torcellini et al. 2003). Unlike wet-cooling systems, dry-cooling systems use ambient air, instead of water, to cool the exhaust steam from the turbines. However, to achieve a heat-rejection efficiency similar to that in a wet-cooling system, Khalil and colleagues (2006) estimated that a direct dry-cooling system will require a larger footprint and would thus affect more wildlife habitat.

Although we found no information in the scientific literature about the direct effects of USSED on wildlife, the ground-disturbance impacts are expected to be similar to those caused by other human activities in the desert (Lovich and Bainbridge 1999).

Dust and dust suppressants. USSED transforms the landscape substantially through site preparation, including the construction of roads and other infrastructure. In addition, many solar facilities require vegetation removal and grading. These construction activities produce dust emissions, especially in arid environments (Munson et al. 2011), which already have the potential for natural dust emission. Dust can have dramatic effects on ecological processes at all scales (reviewed by Field et al. 2010). At the smallest scale, wind erosion, which powers dust emission, can alter the fertility and water-retention capabilities of the soil. Physiologically, dust can adversely influence the gas exchange, photosynthesis, and water usage of Mojave Desert shrubs (Sharifi et al. 1997). Depending on particle size, wind speed, and other factors, dust emission can physically damage plant species through root exposure, burial, and abrasions to their leaves and stems. The physiological and physical damage to plant species inflicted by dust emissions could ultimately reduce the plants' primary production and could indirectly affect wildlife food plants and habitat quality.

From an operational perspective, dust particles reduce mirror and panel efficiency in converting solar energy into heat or electricity. To combat dust, solar energy facilities apply various dust suppressants to surfaces with exposed soil (e.g., graded areas, areas with vegetation removed, roads). There are eight categories of common dust suppressants used for industrial applications: water, salts and brines, organic nonpetroleum products, synthetic polymers, organic petroleum, electrochemical substances, clay additives, and mulch and fiber mixtures (reviewed in Piechota et al. 2004). In a study conducted in the Mojave Desert in which the hydrological impacts of dust suppressants were compared, Singh and colleagues (2003) reported that changes did occur in the volume, rate, and timing of runoff when dust suppressants were used. In particular, petroleum-based and acrylic-polymer dust suppressants drastically influenced the hydrology of disturbed areas by increasing runoff volume and changing its timing. When it is applied to disturbed desert soils, magnesium chloride ($MgCl_2$), a commonly used salt-based dust depressant, does not increase runoff volume but does, however, increase the total suspended solids loads in runoff (Singh et al. 2003).

Others have highlighted the fact that there is a dearth of scientific research and literature on the effects of dust suppressants on wildlife, including the most commonly used category of dust depressant: brines and salts (Piechota et al. 2004, Goodrich et al. 2008). However, the application of $MgCl_2$ to roads was correlated with a higher frequency of plant damage (Goodrich et al. 2008). Because chloride salts, including $MgCl_2$, are not confined to the point of application but have the ability to be transported in runoff (White and Broadly 2001), the potential exists for a loss of primary production associated with plant damage in the habitats surrounding a solar facility, which could directly affect wildlife habitat.

Mortality of wildlife. We are not aware of any published studies documenting the direct effects of USSED on the survival of wildlife. However, subterranean animals can be affected by USSED, including species that hibernate underground. In the Sonoran Desert portion of California, Cowles (1941) observed that most reptiles in the Coachella Valley hibernated at depths of less than 33 centimeters (cm), with many at considerably shallower depths. Included in his observations were flat-tailed horned lizards (*Phrynosoma mcallii*)—a species of special concern in the region because of solar energy development (USDOI and USDOE 2011a)—and the federally protected Coachella Valley fringe-toed lizard (*Uma inornata*). Even lightweight vehicles like motorcycles are capable of causing greatly increased soil density (soil compaction) at a depth of 30–60 cm as their tires pass over the surface (Webb 1983). These observations suggest that vehicular activities in the desert have the potential to kill or entrap large numbers of subterranean animals (Stebbins 1995) through compressive forces or burrow collapse. Similar or greater impacts would be expected from the heavy equipment associated with the construction activities at an energy facility.

Destruction and modification of wildlife habitat. Despite the absence of published, peer-reviewed information on the effects of USSED on wildlife and their habitats, a considerable body of literature exists on the effects of other ground-disturbing activities on both ecological patterns and processes that are broadly comparable. Ground-disturbing activities affect a variety of processes in the desert, including soil density, water infiltration rate, vulnerability to erosion, secondary plant succession, invasion by exotic plant species, and stability of cryptobiotic soil crusts (for reviews, see Lovich and Bainbridge 1999, Webb et al. 2009). All of these processes have the ability—individually and together—to alter habitat quality, often to the detriment of wildlife. Any disturbance and alteration to the desert landscape, including the construction and decommissioning of utility-scale solar energy facilities, has the potential to increase soil erosion. Erosion can physically and physiologically affect plant species and can thus adversely influence primary production (Sharifi et al. 1997, Field et al. 2010) and food availability for wildlife.

Solar energy facilities require substantial site preparation (including the removal of vegetation) that alters topography and, thus, drainage patterns to divert the surface flow associated with rainfall away from facility infrastructure (Abbasi and Abbasi 2000). Channeling runoff away from plant communities can have dramatic negative effects on water availability and habitat quality in the desert, as was shown by Schlesinger and colleagues (1989). Areas deprived

of runoff from sheet flow support less biomass of perennial and annual plants relative to adjacent areas with uninterrupted water-flow patterns.

The impacts of roads. Roads are required in order to provide access to solar energy infrastructure. Both paved and unpaved roads have well-documented negative effects on wildlife (Forman and Alexander 1998), and similar effects are expected in utility-scale solar energy facilities. Although road mortality is most easily detected on the actual roadway, the effects of roads extend far beyond their physical surface. In a study of the effects of roads on Agassiz's desert tortoise populations in southern Nevada, von Seckendorff Hoff and Marlow (2002) examined transects along roads with traffic volumes varying from 25 to 5000 vehicles per day. Tortoises and tortoise sign (e.g., burrows, shells, scat) decreased with their proximity to a road. On roads with high traffic volumes, tortoises and tortoise sign were reduced as far as 4000 meters from the roadside. Roads with lower traffic volumes had fewer far-reaching effects.

Another effect of roads in the desert is the edge enhancement of plants and arthropod herbivores (Lightfoot and Whitford 1991). Perennial plants along the roadside are often larger than those farther away, and annual plant germination is often greatest along the shoulders of roads. It is possible that increased runoff due to impervious pavement or compacted soil contributes to this heterogeneity of vegetation in relationship to a road. Agassiz's desert tortoises may select locations for burrow construction that are close to roads, perhaps because of this increased productivity of food plants (Lovich and Daniels 2000). Although this situation suggests potentially beneficial impacts for herbivorous species of wildlife, such as tortoises, it increases their chance of being killed by vehicle strikes, as was shown by von Seckendorff Hoff and Marlow (2002).

Off-site impacts. Direct impacts on wildlife and habitat can occur well outside the actual footprint of the energy facility. Extraction of large amounts of raw materials for the construction of solar energy facilities (e.g., aggregate, cement, steel, glass); transportation and processing of those materials; the need for large amounts of water for cooling some installations; and the potential for the production of toxic wastes, including coolants, antifreeze, rust inhibitors, and heavy metals, can affect wildlife adjacent to or far from the location of the facility (Abbasi and Abbasi 2000). Abbasi and Abbasi (2000) summarized data suggesting that the material requirements for large-scale solar facilities exceed those for conventional fossil-fuel plants on a cost-per-unit-of-energy basis. In addition, water used for steam production at one solar energy facility in the Mojave Desert of California contained selenium, and the wastewater was pumped into evaporation ponds that attracted birds that fed on invertebrates. Although selenium toxicity was not considered a threat on the basis of the results of one study, the possibility exists for harmful bioaccumulation of this toxic micronutrient (Herbst 2006). In recognition of the hazard, Pimentel and colleagues (1994) suggested that fencing should be used to keep wildlife away from these toxic ponds.

The impacts of USSED on wildlife: Effects due to operation and maintenance

This category includes the effects related to the presence and operation of the solar facility, not the physical construction and decommissioning of the same. Some of the effects (e.g., mortality of wildlife and impacts caused by roads) are similar to those discussed previously for construction and decommissioning and are not discussed further.

Habitat fragmentation. Until relatively recently, the desert Southwest was characterized by large blocks of continuous and interconnected habitat. Roads and urban development continue to contribute to habitat fragmentation in this landscape. Large-scale energy development has the potential to add to and exacerbate the situation, presenting potential barriers to movement and genetic exchange in wildlife populations, including those of bighorn sheep (*Ovis canadensis*), deer (*Odocoileus* spp.), tortoises, and other species of concern and social significance. Research conducted on the effects of oil and gas exploration and development (OGED) on wildlife in the Intermountain West provides a possible analog to USSEDO, since comparable data are not available for the desert Southwest. The potential effects on mule deer (*Odocoileus hemionus*) and other wildlife species include impediments to free movement, the creation of migration bottlenecks, and a reduction in effective winter range size. Mule deer responded immediately to OGED by moving away from disturbances, with no sign of acclimation during the three years of study by Sawyer and colleagues (2009). Some deer avoidance resulted in their use of less-preferred and presumably less-suitable habitats.

Despite a lack of data on the direct contributions of USSEDO to habitat fragmentation, USSEDO has the potential to be an impediment to gene flow for some species. Although the extent of this impact is, as yet, largely unquantified in the desert, compelling evidence for the effects of human-caused habitat fragmentation on diverse wildlife species has already been demonstrated in the adjacent coastal region of southern California (Delaney et al. 2010).

Noise effects. Industrial noise can have impacts on wildlife, including changes to their habitat use and activity patterns, increases in stress, weakened immune systems, reduced reproductive success, altered foraging behavior, increased predation risk, degraded communication with conspecifics, and damaged hearing (Barber et al. 2009, Pater et al. 2009). Changes in sound level of only a few decibels can elicit substantial animal responses. Most noise associated with USSEDO is likely to be generated during the construction phase (Suter 2002), but noise can also be produced during operation and maintenance activities. Brattstrom and Bondello (1983) documented the effects of noise on Mojave

Desert wildlife on the basis of experiments involving off-highway vehicles. Noise from some of these vehicles can reach 110 decibels—near the threshold of human pain and certainly within the range expected for various construction, operation, and maintenance activities (Suter 2002) associated with USSEDO. This level of noise caused hearing loss in animals, such as kangaroo rats (*Dipodomys* spp.), desert iguanas (*Dipsosaurus dorsalis*), and fringe-toed lizards (*Uma* spp.). In addition, it interfered with the ability of kangaroo rats to detect predators, such as rattlesnakes (*Crotalus* spp.), and caused an unnatural emergence of aestivating spadefoot toads (*Scaphiopus* spp.), which would most likely result in their deaths. Because of impacts on wildlife, Brattstrom and Bondello (1983) recommended that "all undisturbed desert habitats, critical habitats, and all ranges of threatened, endangered, or otherwise protected desert species" (p. 204) should be protected from loud noise.

Although many consider solar energy production a "quiet" endeavor, noise is associated with their operation. For example, facilities at which wet-cooling systems are used will have noises generated by fans and pumps. As for facilities with dry-cooling systems, only noise from fans will be produced during operation (EPRI 2002). Because of the larger size requirements of dry-cooling systems, there will be more noise production associated with an increase in the number of fans.

Electromagnetic field generation. When electricity is passed through cables, it generates electric and magnetic fields. USSEDO requires a large distribution system of buried and overhead cables to transmit energy from the point of production to the end user. Electromagnetic fields (EMFs) produced as energy flows through system cables are a concern from the standpoint of both human and wildlife health, yet little information is available to assess the potential impact of the EMFs associated with USSEDO on wildlife. Concerns about EMFs have persisted for a long time, in part because of controversy over whether they're the actual cause of problems and disagreement about the underlying mechanisms for possible effects. For example, there is presently a lack of widely accepted agreement about the biological mechanisms that can explain the consistent associations between extremely low-frequency EMF exposure from overhead power lines and childhood leukemia, although there is no shortage of theories (Gee 2009).

Some conclude that the effects of EMFs on wildlife will be minor because of reviews of the often conflicting and inconclusive literature on the topic (Petersen and Malm 2006). Others suggest that EMFs are a possible source of harm for diverse species of wildlife and contribute to the decline of some mammal populations. Balmori (2010) listed possible impacts of chronic exposure to athermal electromagnetic radiation, which included damage to the nervous system, disruption of circadian rhythm, changes in heart function, impairment of immunity and fertility, and genetic and developmental problems. He concluded that enough evidence exists to confirm harm to wildlife but suggested that further study is urgently needed. Other authors suggest that the generally inconsistent epidemiological evidence in support of the effects of EMFs should not be cause for inaction. Instead, they argue that the precautionary principle should be applied in order to prevent a recurrence of the "late lessons from early warnings" scenario that has been repeated throughout history (Gee 2009).

Magnetic information is used for orientation by diverse species, from insects (Sharma and Kumar 2010) to reptiles (Perry A et al. 1985). Despite recognition of this phenomenon, the direct effects of USSEDO-produced EMFs on wildlife orientation remains unknown.

Microclimate effects. The alteration of a landscape through the removal of vegetation and the construction of structures by humans not only has the potential of increasing animal mortality but also changes the characteristics of the environment in a way that affects wildlife. The potential for microclimate effects unique to solar facilities was discussed by Pimentel and colleagues (1994) and by Harte and Jassby (1978). It has been estimated that a concentrating solar facility can increase the albedo of a desert environment by 30%–56%, which could influence local temperature and precipitation patterns through changes in wind speed and evapotranspiration. Depending on their design, large concentrating solar facilities may also have the ability to produce significant amounts of unused heat that could be carried downwind into adjacent wildlife habitat with the potential to create localized drought conditions. The heat produced by central-tower solar facilities can burn or incinerate birds and flying insects as they pass through the concentrated beams of reflected light (McCrary et al. 1986, Pimentel et al. 1994, Tsoutsos et al. 2005, Wilshire et al. 2008).

A dry-cooled solar facility—in particular, one with a concentrating-trough system—could reject heated air from the cooling process with temperatures 25–35 degrees Fahrenheit higher than the ambient temperature (EPRI 2002). This could affect the microclimate on site or those in adjacent habitats. To our knowledge, no research is available to assess the effects of USSEDO on temperature or that of any other climatic variable on wildlife. However, organisms whose sex is determined by incubation temperatures, such as both species of desert tortoises, may be especially sensitive to temperature changes, because small temperature changes have the potential to alter hatchling sex ratios (Hulin et al. 2009).

Pollutants from spills. USSEDO, especially at wet-cooled solar facilities, has a potential risk for hazardous chemical spills on site, associated with the toxicants used in cooling systems, antifreeze agents, rust inhibitors, herbicides, and heavy metals (Abbasi and Abbasi 2000, Tsoutsos et al. 2005). Wet-cooling solar systems must use treatment chemicals (e.g., chlorine, bromine, selenium) and acids and bases (e.g., sulfuric acid, sodium hydroxide, hydrated lime) for the prevention of fouling and scaling and for pH control of the water used in their recirculating systems (EPRI 2002).

Solar facilities at which a recirculating system is used also have treatment and disposal issues associated with water discharge, known as *blowdown*, which is water with a high concentration of dissolved and suspended materials created by the numerous evaporation cycles in the closed system (EPRI 2002). These discharges may contain chemicals used to prevent fouling and scaling. The potentially tainted water is usually stored in evaporative ponds, which further concentrates the toxicants (Herbst 2006). Because water is an attraction for desert wildlife, numerous species could be adversely affected. The adverse effects of the aforementioned substances and similar ones on wildlife are well documented in the literature, and a full review is outside the scope of this article. However, with the decreased likelihood of wet-cooling systems for solar facilities in the desert, the risk of hazardous spills and discharges on site will be less in the future, because dry-cooling systems eliminate most of the associated water-treatment processes (EPRI 2002). However, there are still risks of spills associated with a dry-cooling system. More research is needed on the adverse effects of chemical spills and tainted-water discharges specifically related to USSEDO on wildlife.

Water consumption (wet-cooled solar). The southwestern United States is a water-poor region, and water use is highly regulated throughout the area. Because of this water limitation, the type of cooling systems installed at solar facilities is limited as well. For example, a once-through cooling system—a form of wet cooling—is generally not feasible in arid environments, because there are few permanent bodies of water (i.e., rivers, oceans, and lakes) from which to draw cool water and then into which to release hot water. Likewise, other wet-cooling options, such as recirculating systems and hybrid systems, are becoming less popular because of water shortage issues in the arid region. Therefore, the popularity of the less-efficient and less-economical dry-cooling systems is increasing on public lands. Water will also be needed at solar facilities to periodically wash dust from the mirrors or panels. Although there are numerous reports in which the costs and benefits were compared both environmentally and economically (EPRI 2002, Khalil et al. 2006) between wet- and dry-cooled solar facilities, to our knowledge no one has actually quantified the effects of water use and consumption on desert wildlife in relation to the operation of these facilities.

Fire risks. Any system that produces electricity and heat has a potential risk of fire, and renewable energy facilities are no exception. Concentrating solar energy facilities harness the sun's energy to heat oils, gases, or liquid sodium, depending on the system design (e.g., heliostat power, trough, dish). With temperatures reaching more than 300 degrees Celsius in most concentrated solar systems, spills and leaks from the coolant system increase the risk of fires (Tsoutsos et al. 2005). Even though all vegetation is usually removed from the site during construction, which reduces the risk of a fire propagating on and off site, the increase of human activity in a desert region increases the potential for fire, especially along major highways and in the densely populated western Mojave Desert (Brooks and Matchett 2006).

The Southwest deserts are not fire-adapted ecosystems: fire was historically uncommon in these regions (Brooks and Esque 2002). However, with the establishment of numerous flammable invasive annual plants in the desert Southwest (Brown and Minnich 1986), coupled with an increase in anthropogenic ignitions, fire has become more common in the deserts, which adversely affects wildlife (Esque et al. 2003). For Agassiz's desert tortoise, fire can translate into direct mortality at renewable energy facilities (Lovich and Daniels 2000) and can cause reductions in food and habitat quality. To our knowledge, however, there is no scientific literature related to the effects of USSEDO-caused fire on wildlife.

Light pollution. Two types of light pollution could be produced by solar energy facilities: ecological light pollution (ELP; Longcore and Rich 2004) and polarized light pollution (PLP; Horváth et al. 2009). The latter, PLP, could be produced at high levels at facilities using photovoltaic solar panels, because dark surfaces polarize light. ELP can also be produced at solar facilities in the form of reflected light. The reflected light from USSEDO has been suggested as a possible hazard to eyesight (Abbasi and Abbasi 2000). ELP could adversely affect the physiology, behavior, and population ecology of wildlife, which could include the alteration of predation, competition, and reproduction (for reviews, see Longcore and Rich 2004, Perry G et al. 2008). For example, the foraging behavior of some species can be adversely affected by light pollution (for a review, see Longcore and Rich 2004). The literature is limited regarding the impact of artificial lighting on amphibians and reptiles (Perry G et al. 2008), and, to our knowledge, there are no published studies in which the impacts on wildlife of light pollution produced by USSEDO have been assessed. However, light pollution is considered by G. Perry and colleagues (2008) to be a serious threat to reptiles, amphibians, and entire ecological communities that requires consideration during project planning. G. Perry and colleagues (2008) further recommended the removal of unnecessary lighting so that the lighting conditions of nearby habitats would be as close as possible to their natural state.

Numerous anthropogenic products—usually those that are dark in color (e.g., oil spills, glass panes, automobiles, plastics, paints, asphalt roads)—can unnaturally polarize light, which can have adverse effects on wildlife (for a review, see Horváth et al. 2009). For example, numerous animal species use polarized light for orientation and navigation purposes (Horváth and Varjú 2004). Therefore, the potential exists for PLP to disrupt the orientation and migration abilities of desert wildlife, including those of sensitive species. In the review by Horváth and colleagues (2009), which was focused mostly on insects but included a few avian references, they highlighted the fact that anthropogenic products that produce PLP can appear to be water bodies to wildlife and can become ecological traps for insects and, to a lesser degree, avian species. Therefore,

utility-scale solar energy facilities at which photovoltaic technology is used in the desert Southwest could create a direct effect on insects (i.e., ecological trap), which could have profound but unquantified effects on the ecological community surrounding the solar facility. In addition, there may be indirect effects on wildlife through the limitation of plant food resources, especially if pollinators are negatively affected. As was stated by Horváth and colleagues (2009), the population- and community-level effects of PLP can only be speculated on because of the paucity of data.

Unanswered questions and research needs

In our review of the peer-reviewed scientific literature, we found only one peer-reviewed publication on the specific effects of utility-scale solar energy facility operation on wildlife (McCrary et al. 1986) and none on utility-scale solar energy facility construction or decommissioning. Although it is possible that we missed other peer-reviewed publications, our preliminary assessment demonstrates that very little critically reviewed information is available on this topic. The dearth of published, peer-reviewed scientific information provides an opportunity to identify the fundamental research questions for which resource managers need answers. Without those answers, resource managers will be unable to effectively minimize the negative effects of USSEDO on wildlife, especially before permitting widespread development of this technology on relatively undisturbed public land.

Before-and-after studies. Carefully controlled studies are required in order to tease out the direct and indirect effects of USSEDO on wildlife. Pre- and postconstruction evaluations are necessary to identify the effects of renewable energy facilities and to compare results across studies (Kunz et al. 2007). In their review of wind energy development and wildlife, with an emphasis on birds, Kuvlesky and colleagues (2007) noted that experimental designs and data-collection standards were typically inconsistent among studies. This fact alone contributes measurably to the reported variability among studies or renders comparisons difficult, if not impossible. Additional studies should emphasize the need for carefully controlled before-after-control-impact (BACI) studies (Kuvlesky et al. 2007) with replication (if possible) and a detailed description of site conditions. The potential payoff for supporting BACI studies now could be significant: They could provide answers for how to mitigate the negative impacts on wildlife in a cost-effective and timely manner.

What are the cumulative effects of large numbers of dispersed or concentrated energy facilities? Large portions of the desert Southwest have the potential for solar energy development. Although certain areas are targeted for large facilities because of resource availability and engineering requirements (e.g., their proximity to existing transmission corridors), other areas may receive smaller, more widely scattered facilities. A major unanswered question is what the cumulative impacts of these facilities on wildlife are. Would it be better for wildlife if development is concentrated or if it is scattered in smaller, dispersed facilities? Modeling based on existing data would be highly suspect because of the deficiency of detailed site-level published information identified in our analysis. Except for those on habitat destruction and alteration related to other human endeavors, there are no published articles on the population genetic consequences of habitat fragmentation related to USSED, which makes this a high priority for future research.

What density or design of development maximizes energy benefits while minimizing negative effects on wildlife? We are not aware of any published peer-reviewed studies in which the impacts on wildlife of different USSED densities or designs have been assessed. For example, would it benefit wildlife to leave strips of undisturbed habitat between rows of concentrating solar arrays? Research projects in which various densities, arrays, or designs of energy-development infrastructure are considered would be extremely valuable. BACI studies would be very useful for addressing this deficiency.

What are the best sites for energy farms with respect to the needs of wildlife? The large areas of public land available for renewable energy development in the desert Southwest encompass a wide variety of habitats. Although this provides a large number of choices for USSED, not all areas have the same energy potential because of resource availability and the limitations associated with engineering requirements, as was noted above. Detailed information on wildlife distribution and habitat requirements are crucially needed for proper site location and for the design of renewable energy developments (Tsoutsos et al. 2005). Public-resource-management agencies have access to rich geospatial data sets based on many years of inventories and resource-management planning. These data could be used to identify areas of high value for both energy development and wildlife. Areas with overlapping high values could be carefully studied through risk assessment when it appears that conflicts are likely. Previously degraded wildlife habitats, such as old mine sites, overgrazed pastures, and abandoned crop fields, may be good places to concentrate USSED to minimize its impacts on wildlife (CBI 2010).

Can the impacts of solar energy development on wildlife be mitigated? The construction of solar energy facilities can cause direct mortality of wildlife. In addition, building these facilities results in the destruction and fragmentation of wildlife habitat and may increase the possibility of fire, as was discussed above. Beyond these effects, essentially nothing is known about the operational effects of solar energy facilities on wildlife. Current mitigation strategies for desert tortoises and other protected species include few alternatives other than translocation of the animals from the footprint of the development into other areas. Although this strategy may be appealing at first glance, animal translocation has a checkered history of success, especially for reptiles and amphibians (Germano and Bishop 2008, CBI 2010). Translocation

has yet to be demonstrated as a viable long-term solution that would mitigate the destruction of Agassiz's desert tortoise habitat (Ernst and Lovich 2009, CBI 2010).

Conclusions

All energy production has associated social and environmental costs (Budnitz and Holdren 1976, Bezdek 1993). In their review of the adverse environmental effects of renewable energy development, Abbasi and Abbasi (2000) stated that "renewable energy sources are not the panacea they are popularly perceived to be; indeed, in some cases, their adverse environmental impacts can be as strongly negative as the impacts of conventional energy sources" (p. 121). Therefore, responsible, efficient energy production requires both the minimization of environmental costs and the maximization of benefits to society—factors that are not mutually exclusive. Stevens and colleagues (1991) and Martín-López and colleagues (2008) suggested that the analyses of costs and benefits should include both wildlife use and existence values. On the basis of our review of the existing peer-reviewed scientific literature, it appears that insufficient evidence is available to determine whether solar energy development, as it is envisioned for the desert Southwest, is compatible with wildlife conservation. This is especially true for threatened species such as Agassiz's desert tortoise. The many other unanswered questions that remain after reviewing the available evidence provide opportunities for future research, as was outlined above.

The shift toward renewable energy is widely perceived by the public as a "green movement" intended to reduce greenhouse-gas emissions and acid rain and to curb global climate change (Abbasi and Abbasi 2000). However, as was noted by Harte and Jassby (1978), just because an energy technology is simple, thermodynamically optimal, renewable, or inexpensive does not mean that it will be benign from an ecological perspective. The issue of wildlife impacts is much more complex than is widely appreciated, especially when the various scales of impact (e.g., local, regional, global) are considered. Our analysis shows that, on a local scale, so little is known about the effects USSEDO on wildlife that extrapolation to larger scales with any degree of confidence is currently limited by an inadequate amount of scientific data. Therefore, without additional research to fill the significant information void, accurate assessment of the potential impacts of solar energy development on wildlife is largely theoretical but needs to be empirical and well-founded on supporting science.

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Thank you for your comment, Rob Mrowka.

The comment tracking number that has been assigned to your comment is SEDDsupp20128.

Comment Date: January 27, 2012 15:37:09PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20128

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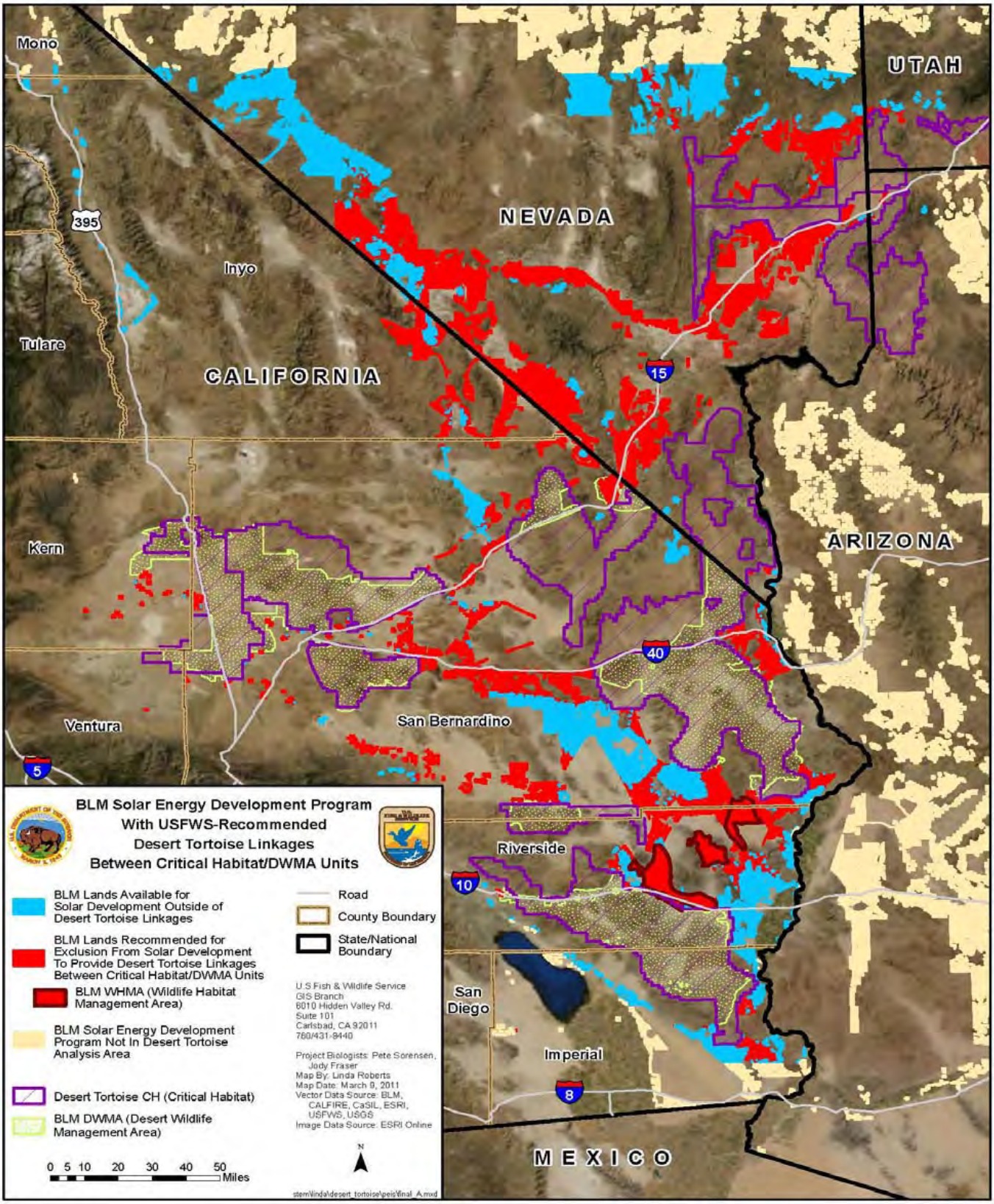
Attachment: USFWS 2011 Map of DT connectivity areas.pdf

Comment Submitted:

doc 3 of 3


Mono
UTAH
NEVADA
395
Inyo
Tulare
CALIFORNIA
15
Kern
ARIZONA
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Ventura
San Bernardino
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Riverside
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San Diego
Imperial
8
MEXICO
BLM Solar Energy Development Program
With USFWS-Recommended
Desert Tortoise Linkages
Between Critical Habitat/DWMA Units
BLM Lands Available for Solar Development Outside of Desert Tortoise Linkages
BLM Lands Recommended for Exclusion From Solar Development To Provide Desert Tortoise Linkages Between Critical Habitat/DWMA Units
BLM WHMA (Wildlife Habitat Management Area)
BLM Solar Energy Development Program Not In Desert Tortoise Analysis Area
Desert Tortoise CH (Critical Habitat)
BLM DWMA (Desert Wildlife Management Area)
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State/National Boundary
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U.S Fish & Wildlife Service
GIS Branch
6010 Hidden Valley Rd.
Suite 101
Carlsbad, CA 92011
760/431-9440
Project Biologists: Pete Sorensen, Jody Fraser
Map By: Linda Roberts
Map Date: March 9, 2011
Vector Data Source: BLM, CALFIRE, CaSIL, ESRI, USFWS, USGS
Image Data Source: ESRI Online
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Thank you for your comment, Andrew Wang.

The comment tracking number that has been assigned to your comment is SEDDsupp20129.

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Comment Submitted:

SOLARRESERVE®

January 27, 2012 Via Internet

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Subject: Comments by SolarReserve on the Supplemental Draft Solar PEIS

Recognizing the considerable efforts invested by multiple stakeholders in the development of the Solar Programmatic Environmental Impact Statement and its Supplemental Draft (Solar PEIS), and further recognizing BLM's goals to complete the process in 2012, SolarReserve appreciates the opportunity to provide our comments below.

By way of introduction, SolarReserve, LLC – headquartered in Santa Monica, California – is an experienced and entrepreneurial company developing large-scale solar energy projects worldwide. It holds the exclusive worldwide license to the molten salt, concentrating solar power (CSP) tower technology developed by Pratt & Whitney Rocketdyne, a subsidiary of United Technologies Corporation. Since its formation in late 2007, SolarReserve's team of power project professionals have assembled a CSP development portfolio of more than 25 projects featuring its licensed solar technology with potential output of more than 3,000 MW in the United States and Europe; with early stage activities in other international markets including the Middle East, North and South Africa, Australia, China, India and Latin America. SolarReserve is also developing more than 1,500 MW of photovoltaic projects across the United States and internationally. SolarReserve's experienced management team has previously developed and financed more than $15 billion in renewable and conventional energy projects in more than a dozen countries around the world.

SolarReserve's molten salt CSP tower technology was successfully demonstrated in California under a U.S. Department of Energy-sponsored pilot project in the late 1990s. The 10 MW *Solar Two* pilot facility utilized a molten salt receiver designed, engineered and assembled by Rocketdyne, now a part of United Technologies Corporation. SolarReserve's lead project, the 110 MW *Crescent Dunes Solar Energy Project* located on BLM land near Tonopah, Nevada started construction in September of 2011. SolarReserve is also in the final stages of NEPA compliance for the *Quartzsite Solar Energy Project* on BLM land in Western Arizona.

Our comments are as follows:

Solar Energy Zones

SolarReserve agrees that a designated number of acres set aside for large solar development and properly incentivized with streamlined NEPA compliance requirements, including as examples certainty around consultation under Section 106 of the National Historic Preservation Act and certainty around impact mitigation expectations, will stimulate such development. Given the near term lack of electrical demand in the Desert Southwest and the California-centric demand for renewable energy driven by an aggressive 33% Renewable Portfolio Standard, SolarReserve views the current SEZ acres as a combination of inadequately small and located the wrong places (i.e., distant from California load centers and not designated using appropriate transmission considerations). SolarReserve therefore urges for additional new SEZs to be co-located with transmission

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existing or in development, as such capacity represents one of the single largest hurdles in our work. In addition, we request that the variance process and the new SEZ designation process to be more clearly defined and "workable" in that it should incorporate flexibilty toward new project siting outside of SEZs as market conditions ultimately evolve and improve.

Pending Applications

Given the significant number of existing applications defined as "pending" within the Solar PEIS framework, SolarReserve requests that BLM continue to process these applications under existing policies and Instructional Memoranda, and not to subject them to the forthcoming PEIS Record of Decision. One stark example of this potential treatment is the case of our pending Final EIS and Record of Decision for the *Quartzsite Solar Energy Project* which has already been designated as a BLM Priority Project for 2012 in Arizona. *Quartzsite* has undergone various significant processes for NEPA compliance since 2009 and it would be highly inappropriate at this stage to re-subject the project to future Solar PEIS considerations and requirements.

Technology Restrictions

SolarReserve views as inappropriate the proposed restrictions of 10 feet in height and implementation of only solar PV technology in SEZs. Even with current technology, some types of tracking solar PV technology exceed 10 feet in height. Given that SolarReserve's CSP technology requires a roughly 650 feet high tower, this would mean an automatic exclusion in every case. Moreover, as BLM already understands very well, a determination of visual impact is a highly subjective effort that is required to consider a multitude of factors. Therefore, SolarReserve requests the elimination of both height and technology restrictions, and for associated visual impact evaluations to continue to be made on a case-by-case basis so long as the development is not proposed for an area with existing Visual Resource Management Class 1 or 2 designations.

SolarReserve strives to foster continued strong working relationships within every level of the BLM and DOI as well as with our stakeholder partners. Together with our colleagues in the still nascent utility-scale solar industry, we understand the historic nature and significant positive long-term impacts that the Solar PEIS can generate for a meaningful contribution of clean renewable power generation on public land in the United States…if properly implemented with well-considered and balanced input. Please contact me if you have any questions as this PEIS moves toward completion in 2012.

Sincerely,

Andrew Wang
Director, Development
SolarReserve, LLC
(310) 315-2225
Andrew.Wang@SolarReserve.com

Thank you for your comment, Alex Daue.

The comment tracking number that has been assigned to your comment is SEDDsupp20130.

Comment Date: January 27, 2012 15:39:10PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20130

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Attachment: Supplement to Solar DPEIS Comments - Arizona (TWS and partners 1-27-12).pdf

Comment Submitted:

TWS et. al Arizona comments.

January 27, 2012

Delivered via electronic submission to the BLM Solar PEIS website and U.S. mail (with attachments).

Shannon Stewart, BLM Solar PEIS Project Lead
Solar Energy PEIS
Argonne National Laboratory
9700 S. Cass Avenue
EVS/240
Argonne, IL 60439

Re: Comments on the Supplement to the Draft Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States (Arizona portion)

Dear Ms. Stewart:

Please accept and fully consider these comments on the Arizona portion of the Supplement to the Draft Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States (Supplement) on behalf of The Wilderness Society, Sierra Club – Grand Canyon (Arizona) Chapter, Sonoran Institute, Arizona Wilderness Coalition, Defenders of Wildlife, Sky Island Alliance and the Coalition for Sonoran Desert Protection. Please note that these comments are specific to the Arizona portion of the Supplement – some of the signatory groups are also submitting separate comment letters addressing the other states included in the PEIS as well as overarching policy issues.

Overview

We appreciate the overall direction of the Supplement with its additional focus on guiding solar projects to low-conflict Solar Energy Zones (SEZs) in the Modified Solar Energy Development Alternative. The Department of Interior (DOI) and the Bureau of Land Management (BLM) have shown a strong commitment to zone-based development in both the Supplement and in public statements since the publication of the Supplement. We believe that this focus is critical for both the protection of wildlands and wildlife habitat and for meeting our climate and clean energy goals through the success of responsible and well-sited solar development on public lands. **The BLM should continue to refine the Programmatic Environmental Impact Statement (PEIS) through the Final PEIS and Record of Decision (ROD), carrying forward the zone-based focus and most other elements of the Supplement, and sign the ROD by fall 2012.**

We also appreciate that the BLM has addressed many of the specific recommendations we made on the Draft PEIS regarding the Arizona SEZs in the SEZ action plans in the Supplement. Completing the proposed additional analyses, pre-construction surveys, mapping and other reviews identified in the SEZ action plans will be very important for

the success of low-impact solar development in the SEZs, and the BLM should ensure that these efforts are completed prior to development.

Our comment letter addresses several issues, including the following key issues:

- **Exclusion areas:** The Supplement should be strengthened by adding the following lands to the exclusion list: Citizens' Proposed Wilderness areas, BLM-identified lands with wilderness characteristics that are not managed to protect those characteristics, Sonoran desert tortoise management units (Categories I, II and key areas within Category III, as detailed below); lands in Pima County's Conservation Lands System and Preserve System; lands identified in Pinal County's Open Space Plan; lands in modeled multi-species "Arizona Wildlife Linkages"; lands in proposed 2002 cactus ferruginous pygmy owl critical habitat; and lands in the San Pedro-Wilcox Watershed.
- **Changes to SEZs and proposed SEZ action plans:** We support most of the changes to the SEZs and the SEZ action plans that are included in the Supplement. Key recommendations from our comments on the Draft PEIS that still need to be addressed are highlighted in this letter.
- **Coordination with the Restoration Design Energy Project (RDEP):** The BLM should move forward with the RDEP process in a timely manner and provide the identification and analysis of lands that can be utilized for new solar energy zones or as lands suitable for variance projects consistent with the BLM's Solar PEIS.
- **Visual Resource Management in SEZs:** Given the rapidly evolving nature of solar technologies, the BLM should address visual resource impacts on a project-by-project basis in the SEZs, rather than using the proscriptive height and technology restrictions proposed in the Supplement.

I. The BLM should strengthen the exclusion areas in the Final PEIS.

We appreciate the set of exclusion areas included in the Draft PEIS and the Supplement to limit impacts to sensitive natural and cultural resources. The additional exclusion areas added in the Supplement will also help limit impacts and facilitate responsible solar development. **However, the BLM should also exclude the following areas from development[1]:**

- Citizens' Proposed Wilderness Areas: 174,151 acres.[2] We commend the BLM for significantly reducing the number of acres from the 510,888 acres that were proposed to be open for application in the Draft PEIS. However, all Citizens' Proposed Wilderness (CPW) areas should be excluded from development. Examples of areas that have undergone an exhaustive inventory for opportunities of solitude, primitive recreation, naturalness, and other supplemental wilderness values are described below. These areas, among 28 other CPW Areas (see Attachment 1) represent areas where more than 1,000 acres of the area are in

[1] Detailed rationales for excluding these areas from solar development were included in our May 2, 2011 comment letter on the Draft PEIS, and are incorporated here by reference.
[2] A spreadsheet detailing these areas is included as Attachment 1. GIS data for Citizen's Proposed Wilderness areas are included as Attachment 2.

conflict with the Supplement's identified variance application areas. A number of these areas are currently being considered for legislative enactment as wilderness, therefore reducing conflict with future potential solar development is imperative.

- Yellow Medicine Butte: 7,877 acres of conflict (43% of the unit). The Yellow Medicine Butte CPW unit includes a rugged, volcanic mountain surrounded by an unfragmented expanse of the Lower Colorado Subdivision of the Sonoran Desert. Resting between the Eagletail Mountains Wilderness and Woolsey Peak Wilderness that were protected in 1990, this large unit currently hosts one of the most important desert bighorn sheep populations in the vicinity while providing core and connective habitat for other sensitive species. Accessed by the primitive Agua Caliente Road, visitors enjoy a true desert wilderness experience with a high degree of solitude from developed areas to the north and east.
- Cortez Peak: 10,183 acres of conflict (37% of the unit). Cortez Peak CPW consist of a northwest-southeast trending ridge of volcanic mountains, including deep, intertwined canyons that offer topographic screening and premium opportunities for solitude. The influence of humankind is slight given its remote character within the larger Gila Bend Mountains. Similar to Yellow Medicine Butte CPW and other proximate units, the area provides core and connective habitat for sensitive species, as well as premium opportunities for wilderness experiences by those who visit the area. Flat lands within this unit have significant and irreplaceable values.
- Face Mountain: 20,824 acres of conflict (61% of the unit). Face Mountain is the signature geologic feature within this large CPW, including significant flatlands filled with iconic flora and diverse wilderness recreation opportunities. Hidden inner valleys of pristine Sonoran Desert lie in between the ridgelines, offering visitors a unique wilderness experience of naturalness, solitude, and primitive recreation. Developable flatlands in this unit lie in primarily in the northern portion of the unit, which is critical to sustain the viability of wildlife passage through the Gila Bend Mountains.
- East Belmont Mountains: 17,974 acres of conflict (33% of the unit). This unit is exceptional in that it has retained substantial wilderness characteristics despite its proximity to the greater Phoenix metro area. The proposed unit possesses both outstanding opportunities for solitude and primitive/unconfined recreation as visitors are immediately overcome by the topographical and biological variety. This unit provides critical connection to the Hassayampa River to the east and features several large ephemeral washes that supplement the incredible diversity of the area.

- <u>BLM-identified lands with wilderness characteristics not managed to protect those characteristics</u>;
- <u>San Pedro-Wilcox Watershed (USGS Hydrologic Unit Code 150502):</u> 29,917 acres;
- <u>Kaibab-Paunsagunt Wildlife Corridor</u>: In our comments on the Draft Solar PEIS, we recommended that lands in the Kaibab-Paunsagunt Wildlife Corridor be added

to the exclusion list, as utility scale solar development in this important migratory corridor could easily fragment it and disrupt seasonal deer herd movements, which could not only have detrimental impacts to the deer populations that utilize this area heavily, but could also inhibit genetic exchange between them. Unfortunately, the Supplement did not add this biologically important area to the exclusion list. We again reiterate the importance of adding this area to the exclusion list. Specifically, the area in question that should be added to the exclusion list is north of the Kaibab National Forest's northern boundary and east of Kanab Creek. We also note that this corridor extends into southern Utah and the BLM should consult with the Arizona and Utah Game and Fish Departments to ensure that solar development does not impair the functionality of the corridor.

- Pygmy-owl Proposed Critical Habitat (2002)[3]: We are encouraged that the amount of land identified as available for solar development between the Draft Solar PEIS SEDP Alternative and the Supplement's variance application areas located in the 2002 FWS proposed pygmy owl critical habitat was significantly reduced, from approximately 110,775 acres to 7,523 acres. We reiterate the importance of adding the remainder of these lands, crucial to pygmy owl conservation and recovery, to the exclusion list.
- Sonoran desert tortoise habitat: We note that a recent settlement agreement has the Sonoran desert tortoise on track for a listing decision by the US Fish and Wildlife Service in 2015. If listed as threatened or endangered, a critical habitat designation will also be forthcoming. Therefore, lands identified as important habitat for this declining species should not be identified for possible utility scale solar development. We are encouraged that the amount of land identified as suitable for solar development between the Draft Solar PEIS SEDP Alternative and the Supplement's variance application areas conflicting with mapped Sonoran desert tortoise habitat was reduced from approximately 1,188,911 to 880,875 acres, a 26% reduction. However, there is still a high level of conflict with known habitat of this already-declining and reclusive reptile. Potential future solar development in these areas under the Modified SEDP Alternative's variance application areas could encircle, fragment and thus isolate desert tortoise populations – further contributing to their decline. We recommend removing habitat classified by BLM habitat suitability models as Category I "essential" (28,674 acres in conflict) or Category II "may be essential" (301,513 acres in conflict) from further consideration for solar development in order to avert accelerating their decline, and to also remove modeled or otherwise documented tortoise linkages, including areas in Category III habitat, that serve to maintain a connected metapopulation.
- Pinal County Open Space and Trails Master Plan: We appreciate that in the Supplement the BLM has removed a significant area between Interstate 10 and State Highway 79 from further consideration for solar development. In addition to being proposed open space in Pinal County's Open Space Plan, this area also aligns with Unit 4 of the US Fish and Wildlife Service's proposed cactus ferruginous pygmy owl critical habitat. However, all of the other lands identified

[3] A spreadsheet detailing these areas and numerous other sensitive and protected areas described in this section is included as Attachment 3.

in the Draft PEIS continue to be identified as variance application areas in the Supplement, and additional lands were added that also conflict with the open space plan. Additional areas of conflict include:
    - Existing Open Space: 16,058 acres
    - Proposed Open Space: 62,024 acres
    - Proposed Regional Park: 30,044 acres
- Pima County:
    - Sonoran Desert Conservation Plan: As stated on the Sonoran Desert Conservation Plan website, "The Sonoran Desert Conservation Plan is guiding regional efforts to conserve the best lands and most precious resources for future generations of Pima County residents to enjoy. The Plan combines short-term actions with long-range land-use decisions in Pima County, one of the most biologically diverse counties in the U.S. From cactus-studded deserts to conifer forests, the diverse landscape of Pima County is the home to a million residents from diverse ethnic and cultural backgrounds, and contains a rich diversity of plant and animal life."[4] Lands in the county's Maeveen Marie Behan Conservation Lands System and Open Space Preserve system have been identified via the best available science to protect habitat for multiple threatened and endangered species. Areas within the Maeveen Marie Behan Conservation Lands System that should be excluded from solar development:
        - Important Riparian Areas: 426 acres
        - Biological Core Areas: 3,277 acres
        - Special Species Management Areas: 5,350 acres
        - Multiple Use Management Areas: 8,812 acres
        - Open Space Preserve System: 3,533 acres
    - Ranches purchased for conservation purposes: Stemming from its desire to preserve biologically important lands, as well as ranch conservation, Pima County has purchased ranches throughout the county, most of them within the Conservation Lands System. These purchases typically include some private acreage, as well as state and BLM grazing leases. The County has purchased the private acreage as fee simple lands and continues to hold the leases for the grazing rights on state and BLM lands. BLM lands associated with these ranches that should be excluded from solar development include:
        - Rancho Seco: 2,134 acres[5]
        - Diamond Bell Ranch: 473 acres
        - Buckelew Farms: 188 acres
- Arizona Wildlife Linkages: Following an initial workshop at the Phoenix Zoo in April 2004, nine public agencies and nonprofit organizations, including AZGFD, ADOT, FHWA, USFS, BLM, NAU, Sky Island Alliance, and the Wildlands Network initiated a collaborative effort to proactively address wildlife connectivity in Arizona. They identified and mapped large blocks of protected habitat threatened by fragmentation and prioritized areas for further study. Their

[4] Available at: http://www.pima.gov/cmo/sdcp/
[5] Descriptions of Rancho Seco, Diamond Bell Ranch and Buckelew Farms are included as Attachment 4.

report, Arizona's Wildlife Linkages Assessment, can be downloaded from ADOT's website at:
http://www.azdot.gov/inside_adot/OES/AZ_WildLife_Linkages/assessment.asp

Funded by Arizona Game & Fish Department, a team of conservation biologists and GIS Analysts at Northern Arizona University created detailed linkage designs for 16 priority areas highlighted in the Wildlife Linkages Assessment. These plans identified and mapped multi-species corridors that will best maintain wildlife movement between wildland blocks, as well as highlight specific planning and road mitigation measures required to maintain connectivity in these corridors. Among the focal species selected and/or modeled for these linkages include the following BLM sensitive species: Black-footed ferret, Desert bighorn sheep, Hualapai Mexican vole, Jaguar, Arizona chuckwalla, Banded gila monster, Chiricahua leopard frog, Mojave desert tortoise, Rosy boa, Southwestern willow flycatcher, Western burrowing owl, Western yellow-billed cuckoo, Bonytail chub, Desert sucker, Desert pupfish, Gila topminnow, Longfin dace, and Razorback sucker, as well as other wildlife of conservation concern. Shapefiles delineating the spatial extent of these linkages and reports describing them in detail can be downloaded at: http://corridordesign.org/linkages/arizona

By its nature, utility-scale solar development has the potential to fragment and disrupt the functionality of these wildlife linkages. Within the 16 modeled linkages described above, the Draft Solar PEIS SEDP Alternative identified 45,745 acres in conflict. The Supplemental's variance application areas identify 25,834 acres in conflict with these linkages, an encouraging 43.5% decrease in conflict. The linkage reports noted above state,"This Linkage Design Plan is a science-based starting point for conservation actions. The plan can be used as a resource for regional land managers to understand their critical role in sustaining biodiversity and ecosystem processes. Relevant aspects of this plan can be folded into management plans of agencies managing public lands" (Beier et al. 2006-2008). As such, we encourage the BLM to add the remainder of lands in conflict with these linkages to the exclusion list for the Final Solar PEIS. Linkages with variance application areas in conflict include: Mount Perkins – Warm Springs, Hualapai Mtns – Cerbat Mtns, Hualapai – Peacock, Wickenburg – Hassayampa, Gila Bend – Sonoran Desert Monument - Sierra Estrella Mtns, Rincon – Santa Ritas – Whetstones and a small portion of the Tumacacori – Santa Ritas linkage astride Sopori Wash.

Subsequent to the 16 linkage models and reports described above, the AZGFD, in cooperation with county planners, local wildlife experts and non-profit conservation organizations, has been working to further refine wildlife linkage maps and to conduct additional wildlife linkage models in Coconino, Maricopa, Pinal and Pima Counties. We encourage the BLM to

add these linkages to the exclusion list as well. These additional completed linkage models may be made available by request to the AZGFD.

II. Changes to SEZs and SEZ action plans.

In addition to the specific recommendations relating to individual SEZs below, we recommend that the BLM include in the Final PEIS a chart for each of the SEZs that identifies not only the additional data that are needed but who is responsible for compiling the data and completing each item listed, as well as a timetable for completion of the individual tasks.

Brenda SEZ

We are generally supportive of the changes to and proposed action plan for the Brenda SEZ. The proposed mapping and survey efforts will be particularly important for supporting responsible development within the SEZ. Key recommendations from our comments on the Draft PEIS that were not adequately considered and adopted in the Supplement are discussed below.[6] **Provided that BLM completes the proposed action plan prior to development and addresses the recommendations below, we support designation of the proposed Brenda SEZ as a SEZ in the Final PEIS.**

- Avoidance of sensitive washes including Bouse Wash and Tyson Wash: We appreciate that the BLM has identified 31 acres of non-development area within the Bouse Wash on the northeastern corner of the SEZ. We support the additional mapping and survey efforts for washes and riparian areas included in the Supplement. Because of their important ecological function in the Sonoran Desert, the Final PEIS should also specify that washes and riparian areas will be avoided to minimize impacts to wildlife habitat.

Bullard Wash SEZ

We appreciate and support the BLM's removal of the Bullard Wash SEZ from consideration as a SEZ in the Supplement. As detailed in our May 2, 2011 comments, the diverse plant and wildlife community on site and the potential significant impacts on special status species from solar development there make it inappropriate as a SEZ.

The Supplement proposes that Bullard Wash be retained as an area open to variance applications. We recommend that the northern portion of the SEZ be added to the exclusion areas because of the significant sensitive natural resources present there.

Gillespie SEZ

We are generally supportive of the changes to and proposed action plan for the Gillespie SEZ. The proposed mapping and survey efforts will be particularly important for

[6] Detailed rationales for all SEZ-related recommendations were included in our May 2, 2011 comment letter on the Draft PEIS, and are incorporated here by reference.

supporting responsible development within the SEZ. Key recommendations from our comments on the Draft PEIS that were not adequately considered or adopted in the Supplement are discussed below. **Provided that BLM completes the proposed action plan prior to development and addresses the recommendations below, we support designation of the proposed Gillespie SEZ as a SEZ in the Final PEIS.**

- Remove the southern portion of the SEZ: In our comments on the Draft PEIS, we recommended that the portion of the SEZ south of Agua Caliente Road be removed to protect a complicated system of washes and associated wildlife habitat and hydrologic features there. The Supplement does not include this change, so we recommend that this change be made in the Final PEIS in order to assure that the SEZ is strong and solar development is compatible.
- Minimizing impacts to Special Status Species: We support the proposed pre-construction surveys and mapping included in the Supplement, and recommend that impacts be minimized and mitigated at the project-specific level through design and construction changes.

III. Coordination with the Restoration Design Energy Project.

We believe the Restoration Design Energy Project (RDEP) holds great promise for facilitating responsible solar development on BLM lands in Arizona. Lands identified through RDEP's state wide assessment will be used to identify new solar energy zones and serve as lands available for "variance" projects, both of which are consistent with the Supplement to the BLM's Solar PEIS. Our support for this project is predicated on RDEP's intent (to facilitate solar and wind development at multiple scales across federal, state, and private lands) and its approach (focusing on lands previously disturbed, or with limited environmental values, that are close to transmission infrastructure and demand centers).

As we noted in our previous comments on Solar PEIS, it is premature for us to endorse the RDEP (the project has yet to release a draft EIS), though we are encouraged by the following project elements that we believe should be part of any process that the BLM agrees to pursue to identify additional zones in Arizona:

- A focus on disturbed lands that may be suitable for renewably energy development (not limited to solar) at various scales (i.e., utility- and community-scale projects).
- A state-wide-level suitability assessment that includes federal (BLM and US Forest Service), state trust, and private lands and sets the stage for renewable energy development that extends across land ownerships and jurisdictions.
- Extensive consultations with cooperating agencies that result in a more comprehensive inventory of lands with known sensitive resources that are excluded from development.
- The development of a reasonable (renewable energy) development forecast for the next 20 years (measured in gigawatt hours and acres) tied to the state's renewable energy standard and export potential.

- Consideration of the following key factors in the ultimate selection of lands that may be included in the final alternative:
    - proximity to existing and approved transmission corridors,
    - avoidance of areas determined to host significant wilderness, wildlife, and other important environmental values,
    - avoidance of areas identified as essential for wildlife connectivity,
    - impacts on water quality and quantity,
    - proximity to load or demand centers, and
    - opportunities for land tenure adjustments that facilitate protection of lands with high conservation values.
- A pro-active stakeholder engagement and consultation process that includes numerous opportunities for input prior to the release of a draft EIS.
- Provision for appropriate incentives for developers, including the amendment of all affected Resource Management Plans, to propose projects on lands ultimately identified as potentially suitable.

To ensure the BLM moves forward with the RDEP process in a timely manner, and provides the identification and analysis of lands that can be utilized for the identification of new solar energy zones or lands suitable for variance projects consistent with the BLM's Solar PEIS, we offer the following recommendations:

- RDEP's planning outcomes should result in the identification of new solar energy zones or lands suitable for variance projects, based on "landscape-level planning" and "best available science" as outlined in the Solar PEIS.
- The final identification and evaluation of these zones and "variance" lands should happen with due dispatch, no later than the end of 2012.
- A robust suite of incentives are provided for both zones and "Renewable Energy Development Area" lands.
- The AZ BLM Office should be provided the necessary resources to achieve the above recommendations and assure the appropriate level of analysis and public engagement.

IV. Visual resource management in the SEZs.

The Supplement includes restrictions on project height and technology for the Gillespie SEZ to protect visual resources near the SEZ, requiring projects to be lower than 10' and only use PV technology or technology with comparable or lower reflectivity. We support the BLM addressing visual resource impacts from solar development. However, given the rapidly evolving nature of solar technologies, the BLM should not put in place proscriptive height and technology restrictions for applications in the SEZs. Instead, visual resource impacts should be addressed on a project-by-project basis.

V. Cumulative impacts analysis.

The Supplement states that the cumulative impacts analyses included in the Draft PEIS are currently being updated based on changes in the Supplement, and that updated

analyses will be included in the Final PEIS. In order to fully support designation of the SEZs in Arizona, the BLM should ensure completion of robust cumulative impacts analyses and include them in the Final PEIS.

VI. The BLM should provide a 60-day public comment period on the Final PEIS.

There will be a significant amount of new information in the Final PEIS, including updated SEZ-specific design features, SEZ action plans, cumulative impacts analysis and monitoring and adaptive management protocols. For this reason, the BLM should provide a 60-day public comment period on the Final PEIS. While we continue to encourage the BLM to complete the PEIS in a thorough and timely manner, it is very important that the public be able to thoroughly review the Final PEIS and be given the opportunity to provide meaningful input on this new information in order to satisfy the requirements of the National Environmental Policy Act. Further, this comment period should not substantially delay the timeline for completion of the PEIS, because BLM's regulations obligate the BLM to provide a 30-day protest period and a concurrent 60-day governor consistency review of land use plan amendments. 40 C.F.R. §§ 1610.5-2; 1610.5-3. The proposed 60-day public comment period will run during these same timeframes.

Conclusion

We thank DOI and the BLM for proposing an approach to solar energy development on public lands in Arizona that will focus appropriate large-scale solar energy development needed to help alleviate the effects of climate change in low-conflict zones in order to limit environmental impacts. This approach will help ensure that the natural and cultural resources of Arizona are protected for future generations. We look forward to working with the BLM as the agency finalizes the PEIS over the coming months.

Thank you for your thorough consideration of these comments.

Sincerely,

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Attachments:

- Attachment 1 - Overlap of BLM proposed variance application areas and Citizens' Proposed Wilderness Areas
- Attachment 2 - GIS data for Citizens' Proposed Wilderness Areas
- Attachment 3 - Overlap of BLM proposed variance application areas and protected and sensitive areas
- Attachment 4 - Desriptions of Rancho Seco, Diamond Bell Ranch and Buckelew Farms

References:

Beier, P., D. Majka, and T. Bayless. 2006-2008. Arizona Missing Linkages: Reports to Arizona Game and Fish Department. School of Forestry, Northern Arizona University.

Thank you for your comment, Alex Daue.

The comment tracking number that has been assigned to your comment is SEDDsupp20131.

Comment Date: January 27, 2012 15:42:12PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20131

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Attachment: Supplement to Solar DPEIS Comments - Colorado (TWS and partners 1-27-12).pdf

Comment Submitted:

TWS et. al Colorado comments.

January 27, 2012

Delivered via electronic submission to the BLM Solar PEIS website and U.S. mail (with attachments).

Shannon Stewart, BLM Solar PEIS Project Lead
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Re: Comments on the Supplement to the Draft Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States (Colorado portion)

Dear Ms. Stewart:

Please accept and fully consider these comments on the Colorado portion of the Supplement to the Draft Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States (Supplement) on behalf of The Wilderness Society, Rocky Mountain Wild, Colorado Environmental Coalition, Rocky Mountain Recreation Initiative, Audubon Colorado and High Country Citizens' Alliance. Please note that these comments are specific to the Colorado portion of the Supplement – some of the signatory groups are also submitting separate comment letters addressing the other states included in the PEIS as well as overarching policy issues.

Overview

We appreciate the overall direction of the Supplement with its additional focus on guiding solar projects to low-conflict Solar Energy Zones (SEZs) in the Modified Solar Energy Development Alternative. The Department of Interior (DOI) and the Bureau of Land Management (BLM) have shown a strong commitment to zone-based development in both the Supplement and in public statements since the publication of the Supplement. We believe that this focus is critical for both the protection of wildlands and wildlife habitat and for meeting our climate and clean energy goals through the success of responsible solar development on public lands. **The BLM should continue to refine the Programmatic Environmental Impact Statement (PEIS) through the Final PEIS and Record of Decision (ROD), carrying forward the zone-based focus and most other elements of the Supplement, and sign the ROD by fall 2012.**

We also appreciate that the BLM has addressed many of the specific recommendations we made on the Draft PEIS regarding the Colorado SEZs in the SEZ action plans in the Supplement. Completing the proposed additional analyses, pre-construction surveys, mapping and other reviews identified in the SEZ action plans will be very important for the success of low-impact solar development in the SEZs, and the BLM should ensure that these efforts are completed prior to development.

Our comment letter addresses several issues, including the following key issues:

- **Exclusion areas:** The Supplement should be strengthened by adding Citizens' Proposed Wilderness areas, BLM-identified lands with wilderness characteristics that are not managed to protect those characteristics and the other areas listed below to the exclusion list.
- **Changes to SEZs and proposed SEZ action plans:** We support most of the changes to the SEZs and the SEZ action plans included in the Supplement. Key recommendations from our comments on the Draft PEIS that still need to be addressed are highlighted in this letter.
- **Visual Resource Management in SEZs:** Given the rapidly evolving nature of solar technologies, the BLM should address visual resource impacts on a project-by-project basis in the SEZs, rather than using the proscriptive height and technology restrictions proposed in the Supplement.

I. BLM should strengthen the exclusion areas in the Final PEIS.

We appreciate the set of exclusion areas included in the Draft PEIS and the Supplement to limit impacts to sensitive natural and cultural resources. The additional exclusion areas added in the Supplement will also help limit impacts and facilitate responsible solar development. **However, the BLM should also exclude the following areas from development[1]:**

- Citizens' Proposed Wilderness areas: 2,569 acres[2]
- BLM-identified lands with wilderness characteristics not managed to protect those characteristics
- Sensitive and protected areas (note that these are listed in order of importance)[3]:
    - Roadless areas: 772 acres
    - Areas of Critical Environmental Concern: 503 acres. These areas should have been excluded from development by the exclusion screens included in the Draft PEIS and the Supplement. (Supplement p. 2-16)
    - Colorado Natural Heritage Program Potential Conservation Areas (PCAs): 13,722 acres
    - Colorado Natural Areas Program areas: 230 acres
    - Colorado State Wildlife Areas: 895 acres
    - Land Trust COMaP v8 2010 areas: 35 acres
    - Miscellaneous Protected Areas GAP PAD-US 2010: 22 acres
    - National Monument COMaP v8 2010: 117 acres
    - State Land Board Trust Lands COSLB: 895 acres
    - The Nature Conservancy Land GAP PAD-US 2010: 28 acres
    - Wild Connections Conservation Plan Proposed Wilderness WCCP 2006: 9 acres

[1] Detailed rationales for excluding these areas from solar development were included in our April 18, 2011 comment letter on the Draft PEIS, and are incorporated here by reference.
[2] A spreadsheet detailing these areas is included as Attachment 1. GIS data for these areas are included as Attachment 2.
[3] A spreadsheet detailing these and other sensitive and protected areas is included as Attachment 3.

    - Wildland Network Design Core Conservation Areas SREP: 5,856 acres
- Species-specific conflicts (note that these are listed in order of importance):[4]
    - Gunnison sage-grouse habitat: 18,268 acres. This habitat is the most important habitat for BLM to exclude from solar development.
    - Lynx habitat: 479 acres
    - Cutthroat trout habitat: 787 acres
    - Columbia sharp-tailed grouse habitat: 11 acres
    - Gunnison's prairie dog habitat: 11,807 acres
    - Colorado Natural Heritage Program element occurrences: these element occurrences would not be protected by excluding the PCAs recommended for exclusion above, and should also be specifically excluded.
        - One occurrence of Colorado wild buckwheat (*Eriogonum brandegeei*) is in the Gunnison Basin PCA that intersects a single parcel in the proposed variance application lands.
        - Three occurrences of Degener beardtongue (*Penstemon degeneri*) that intersect 8 parcels in the Solar PEIS. One of the occurrences is in the Wilson Creek PCA which was drawn specifically to protect Degener beardtongue among other things. However the other two occurrences are not within a PCA.
        - One occurrence of Gray's townsend-daisy (*Townsendia glabella*) intersects a single parcel in the Solar PEIS. The Greenie Mountain Foothills PCA is nearby but it does not intersect the parcel and it was not drawn to protect Gray's townsend-daisy.
        - One occurrence of roundtail chub (*Gila robusta*) is in the Dove Creek PCA where the occurrence intersects a single parcel in the Solar PEIS.

II. Changes to SEZs and SEZ action plans.

In addition to the specific recommendations relating to individual SEZs below, we recommend that the BLM include in the Final PEIS a chart for each of the SEZs that identifies not only the additional data that is needed but who is responsible for compiling the data and completing each item listed, as well as a timetable for completion of the individual tasks.

Antonito Southeast SEZ

We are generally supportive of the proposed action plan for the Antonito Southeast SEZ. The proposed mapping and survey efforts will be particularly important for supporting responsible development within the SEZ. Key recommendations from our comments on the Draft PEIS that were not adopted in the Supplement are discussed below.[5] **Provided that BLM completes the proposed action plan prior to development and addresses**

[4] Attachment 3 also details these areas.
[5] Detailed rationales for all SEZ-related recommendations were included in our April 18, 2011 comment letter on the Draft PEIS, and are incorporated here by reference.

the recommendations below, we support designation of the proposed Antonito Southeast SEZ as a SEZ in the Final PEIS.

- Gunnison's prairie dog: We appreciate that BLM has included pre-disturbance surveys and mapping of colonies in the SEZ. The Final PEIS should specify that active colonies will be avoided, and potential offsite mitigation within areas of high species viability should be pursued if significant impacts are expected.
- Elk and pronghorn winter range: We appreciate that BLM has included pre-disturbance surveys to determine habitat use and migration paths. The Final PEIS should specify that movement corridors outside of project footprints will be preserved.

De Tilla Gulch SEZ

We are generally supportive of the changes to and proposed action plan for the De Tilla Gulch SEZ. The proposed mapping and survey efforts will be particularly important for supporting responsible development within the SEZ. Key recommendations from our comments on the Draft PEIS that are not addressed in the Supplement are included below. **Provided that BLM completes the proposed action plan prior to development and addresses the recommendations below, we support designation of the proposed De Tilla Gulch SEZ as a SEZ in the Final PEIS.**

- Gunnison's prairie dog: We appreciate that BLM has adjusted the boundary of the SEZ to avoid the active colony on the northwest side of the SEZ and included pre-disturbance surveys and mapping of colonies in the SEZ. We also support designating the area removed from the SEZ as an exclusion area. The Final PEIS should specify that active colonies will be avoided, and potential offsite mitigation within areas of high species viability should be pursued if significant impacts are expected.
- Elk, mule deer and pronghorn winter range: We appreciate that BLM has included pre-disturbance surveys to determine habitat use and migration paths. The Final PEIS should specify that movement corridors outside of project footprints will be preserved.

Fourmile East SEZ

We are generally supportive of the changes to and proposed action plan for the Fourmile East SEZ, including the boundary adjustment to avoid impacts to the Old Spanish National Historic Trail. In addition, the proposed mapping and survey efforts will be particularly important for supporting responsible development within the SEZ. Key recommendations from our comments on the Draft PEIS that are not addressed in the Supplement are included below. **Provided that BLM completes the proposed action plan prior to development and addresses the recommendations below, we support designation of the proposed Fourmile East SEZ as a SEZ in the Final PEIS.**

- Gunnison's prairie dog: We appreciate that BLM has included pre-disturbance surveys and mapping of colonies in the SEZ. The Final PEIS should specify that active colonies will be avoided, and potential offsite mitigation within areas of high species viability should be pursued if significant impacts are expected.

Los Mogotes East SEZ

We are generally supportive of the changes to and proposed action plan for the Los Mogotes East SEZ. The proposed mapping and survey efforts will be particularly important for supporting responsible development within the SEZ. Key recommendations from our comments on the Draft PEIS that are not addressed in the Supplement are included below. **Provided that BLM completes the proposed action plan prior to development and addresses the recommendations below, we support designation of the proposed Los Mogotes East SEZ as a SEZ in the Final PEIS.**

- Gunnison's prairie dog: We appreciate that BLM has adjusted the boundary of the SEZ to avoid the colony of unknown status on the west side of the SEZ and included pre-disturbance surveys and mapping of colonies in the SEZ. The Final PEIS should specify that active colonies will be avoided, and potential offsite mitigation within areas of high species viability should be pursued if significant impacts are expected.
- Elk, mule deer and pronghorn winter range: We appreciate that BLM has included pre-disturbance surveys to determine habitat use and migration paths. The Final PEIS should specify that movement corridors outside of project footprints will be preserved.

III. Visual resource management in the SEZs.

The Supplement includes restrictions on project height and technology for all four Colorado SEZs to protect visual resources near the SEZs, requiring projects to be lower than 10' and only use PV technology. We support the BLM addressing visual resource impacts from solar development. However, given the rapidly evolving nature of solar technologies, the BLM should not put in place proscriptive height and technology restrictions for applications in the SEZs. Instead, visual resource impacts should be addressed on a project-by-project basis.

IV. Cumulative impacts analysis.

The Supplement states that the cumulative impacts analyses included in the Draft PEIS are currently being updated based on changes in the Supplement, and that updated analyses will be included in the Final PEIS. In order to fully support designation of the SEZs in Colorado, the BLM should ensure completion of robust cumulative impacts analyses and include them in the Final PEIS.

V. The BLM should closely coordinate the PEIS with other BLM planning efforts including the Grand Junction Resource Management Plan revision.

As noted in the Supplement, in addition to the PEIS, the BLM is also undertaking efforts to identify renewable energy priority areas such as new SEZs in other ongoing planning efforts, including the Grand Junction RMP revision currently underway. (Supplement at p. 2-32) The BLM should take advantage of these opportunities to use more localized planning efforts to identify low-conflict priority areas for solar development, and the agency should ensure that these efforts are closely coordinated with the PEIS.

VI. The BLM should provide a 60 day public comment period on the Final PEIS.

There will be a significant amount of new information in the Final PEIS, including updated SEZ-specific design features, SEZ action plans, cumulative impacts analysis and monitoring and adaptive management protocols. For this reason, the BLM should provide a 60 day public comment period on the Final PEIS. While we continue to encourage the BLM to complete the PEIS in a thorough and timely manner, it is very important that the public be given the opportunity to provide meaningful input on this new information in order to satisfy the requirements of the National Environmental Policy Act. Further, this comment period should not substantially delay the timeline for completion of the PEIS, because BLM's regulations obligate the BLM to provide a 30-day protest period and a concurrent 60-day governor consistency review of land use plan amendments. 40 C.F.R. §§ 1610.5-2; 1610.5-3. The proposed 60-day public comment period will run during these same timeframes.

Conclusion

We thank DOI and the BLM for proposing an approach to solar energy development on public lands in Colorado that will focus appropriate large-scale solar energy development needed to help alleviate the effects of climate change in low-conflict zones. This approach will help ensure that the natural and cultural resources of Colorado are protected for future generations. We look forward to working with the BLM as the agency finalizes the PEIS over the coming months.

Thank you for your thorough consideration of these comments.

Sincerely,

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Attachments

- Attachment 1 - Overlap of BLM proposed variance application areas and Citizens' Proposed Wilderness areas
- Attachment 2 – GIS data for Citizens' Proposed Wilderness areas
- Attachment 3 – Overlap of BLM proposed variance application areas and sensitive and protected areas and species habitat

Thank you for your comment, Alex Daue.

The comment tracking number that has been assigned to your comment is SEDDsupp20132.

Comment Date: January 27, 2012 15:44:45PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20132

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Attachment: Supplement to Solar DPEIS Comments - New Mexico (TWS and partners 1-27-12).pdf

Comment Submitted:

TWS et. al New Mexico comments.

January 27, 2012

Delivered via electronic submission to the BLM Solar PEIS website and U.S. mail (with attachments).

Shannon Stewart, BLM Solar PEIS Project Lead
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Re: Comments on the Supplement to the Draft Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States (New Mexico portion)

Dear Ms. Stewart:

Please accept and fully consider these comments on the New Mexico portion of the Supplement to the Draft Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States (Supplement) on behalf of The Wilderness Society, Defenders of Wildlife, New Mexico Wilderness Alliance and Western Environmental Law Center. Please note that these comments are specific to the New Mexico portion of the Supplement – some of the signatory groups are also submitting separate comment letters addressing the other states included in the PEIS as well as overarching policy issues.

Overview

We appreciate the overall direction of the Supplement with its additional focus on guiding solar projects to low-conflict Solar Energy Zones (SEZs) in the Modified Solar Energy Development Alternative. The Department of Interior (DOI) and the Bureau of Land Management (BLM) have shown a strong commitment to zone-based development in both the Supplement and in public statements since the publication of the Supplement. We believe that this focus is critical for both the protection of wildlands and wildlife habitat and for meeting our climate and clean energy goals through the success of responsible solar development on public lands. **The BLM should continue to refine the Programmatic Environmental Impact Statement (PEIS) through the Final PEIS and Record of Decision (ROD), carrying forward the zone-based focus and most other elements of the Supplement, and sign the ROD by fall 2012.**

We also appreciate that the BLM has addressed many of the specific recommendations we made on the Draft PEIS regarding the New Mexico SEZs in the SEZ action plans in the Supplement. Completing the proposed additional analyses, pre-construction surveys, mapping and other reviews identified in the SEZ action plans will be very important for the success of low-impact solar development in the SEZs, and the BLM should ensure

that these efforts are completed prior to development. There are, however, several important issues raised in our (April 18, 2011) comments on the Draft EIS that were not adequately addressed in the Supplement. Of particular concern is the Supplement's continued inclusion of environmentally sensitive lands as lands open to "variance applications", which we suggested in our comments on the Draft PEIS should be excluded in order to avoid foreseeable conflicts.

Our comment letter addresses several issues, including the following key issues:

- **Exclusion areas:** The Supplement should be strengthened by adding Citizens' Proposed Wilderness areas, BLM-identified lands with wilderness characteristics that are not managed to protect those characteristics, BLM- validated Northern aplomado falcon high and moderately suitable habitats, relict Chihuahuan desert grasslands and lands identified by the BLM as high priorities for grassland restoration to the exclusion list.
- **Changes to SEZs and proposed SEZ action plans:** We support most of the changes to the SEZs and the SEZ action plans included in the Supplement. Key recommendations from our comments on the Draft PEIS that still need to be addressed are highlighted in this letter.
- **Visual Resource Management in SEZs:** Given the rapidly evolving nature of solar technologies, the BLM should address visual resource impacts on a project-by-project basis in the SEZs, rather than using the proscriptive height and technology restrictions proposed in the Supplement.

I. BLM should strengthen the exclusion areas in the Final PEIS.

We appreciate the set of exclusion areas included in the Draft PEIS and the Supplement to limit impacts to sensitive natural and cultural resources. The additional exclusion areas added in the Supplement will also help limit impacts and facilitate responsible solar development. **However, the BLM should also exclude the following areas from development[1]:**

- Citizens' Proposed Wilderness areas: 134 areas with 515,371 acres of overlap.[2] Within these 134 areas, there are 59 Citizens' Proposed Wilderness (CPW) units that have greater than 5,000 acres of variance application areas in conflict and/or have variance application areas that comprise 20% or more of the respective unit. These wilderness quality lands fall within the following complexes: Animas Mountains, Cabezon Country, Cedar Mountains, Continental Divide, Cookes Range, El Malpais, Greater Big Hatches, Greater Bisti/De-Na-Zin, Greater Cerro Pomo, Greater Potrillos, Guadalupe Mountains, Jornada del Muerto, Magdalena Mountains, Nutt Grasslands, Organ Mountains, Peloncillo Mountains, Petaca Pinta Complex, Pyramid Mountains, Quebradas, Robledos – Las Uvas and San Mateo Mountains.

[1] Detailed rationales for excluding these areas from solar development were included in our April 18, 2011 comment letter on the Draft PEIS, and are incorporated here by reference.

[2] A spreadsheet detailing these areas is included as Attachment 1. GIS data for Citizen's Proposed Wilderness areas are included as Attachment 2.

In addition, some of the Citizens' Proposed Wilderness areas with the highest levels of conflict are currently being considered by Congress for designation within the National Wilderness Preservation System. S.1024 has been introduced and referred to Committee, and would protect parts of the Robledos, the Organs, the Potrillos, and the Sierra de las Uvas; all of which could be threatened by development in the PEIS.[3] These areas have long been acknowledged to be of Wilderness quality, a fact that the legislation's existence confirms. We believe the BLM should more carefully consider both Congress's expressed intent and Citizen's Proposed Wilderness, and exclude these areas from solar development.

- BLM-identified lands with wilderness characteristics not managed to protect those characteristics;
- BLM-validated Northern aplomado falcon highly and moderately suitable habitat: 3,809 acres, including 2,513 acres of highly suitable habitat and 1,296 acres of moderately suitable habitat; and
- Lands with relict Chihuahuan desert grasslands or those identified by the BLM as priority areas for grassland restoration.

II. Changes to SEZs and SEZ action plans.

In addition to the specific recommendations relating to the Afton SEZ below, we recommend that the BLM include in the Final PEIS a chart for the Afton SEZ that identifies not only the additional data that is needed but who is responsible for compiling the data and completing each item listed, as well as a timetable for completion of the individual tasks.

Afton SEZ

We are generally supportive of the proposed action plan for the Afton SEZ. The proposed mapping and survey efforts will be particularly important for supporting responsible development within the SEZ. Key recommendations from our comments on the Draft PEIS that were not adopted in the Supplement are discussed below.[4] **Provided that BLM completes the proposed action plan prior to development and addresses the recommendations below, we support designation of the proposed Afton SEZ as a SEZ in the Final PEIS.**

- Minimizing impacts to Special Status Species: While there is likely limited habitat for Special Status Species in the SEZ, the proposed pre-disturbance surveys and mapping efforts in the Supplement will be critical to limiting impacts. Where Special Status Species habitat is found, the Final PEIS should include measures to avoid, minimize and mitigate impacts.

III. Visual resource management in the SEZs.

[3] S. 1024 is included as Attachment 3, and can also be viewed online at http://www.govtrack.us/congress/billtext.xpd?bill=s112-1024

[4] Detailed rationales for all SEZ-related recommendations were included in our April 18, 2011 comment letter on the Draft PEIS, and are incorporated here by reference.

The Supplement includes restrictions on numerous SEZs to protect visual resources near the SEZs, requiring projects to be lower than 10' and only use PV technology. It is not clear in the Supplement what restrictions are proposed for the Afton SEZ. We support the BLM addressing visual resource impacts from solar development. However, given the rapidly evolving nature of solar technologies, the BLM should not put in place proscriptive height and technology restrictions for applications in the SEZs. Instead, visual resource impacts should be addressed on a project-by-project basis.

IV. Cumulative impacts analysis.

The Supplement states that the cumulative impacts analyses included in the Draft PEIS are currently being updated based on changes in the Supplement, and that updated analyses will be included in the Final PEIS. In order to fully support designation of the Afton SEZ in New Mexico, the BLM should ensure completion of a robust cumulative impacts analysis for this SEZ and include it in the Final PEIS.

V. The BLM should provide a 60 day public comment period on the Final PEIS.

There will be a significant amount of new information in the Final PEIS, including updated SEZ-specific design features, SEZ action plans, cumulative impacts analysis and monitoring and adaptive management protocols. For this reason, the BLM should provide a 60 day public comment period on the Final PEIS. While we continue to encourage the BLM to complete the PEIS in a thorough and timely manner, it is very important that the public be given the opportunity to provide meaningful input on this new information in order to satisfy the requirements of the National Environmental Policy Act. Further, this comment period should not substantially delay the timeline for completion of the PEIS, because BLM's regulations obligate the BLM to provide a 30-day protest period and a concurrent 60-day governor consistency review of land use plan amendments. 40 C.F.R. §§ 1610.5-2; 1610.5-3. The proposed 60-day public comment period will run during these same timeframes.

Conclusion

We thank DOI and the BLM for proposing an approach to solar energy development on public lands in New Mexico that will focus appropriate large-scale solar energy development needed to help alleviate the effects of climate change in low-conflict zones. This approach will help ensure that the natural and cultural resources of New Mexico are protected for future generations. We look forward to working with the BLM as the agency finalizes the PEIS over the coming months.

Thank you for your thorough consideration of these comments.

Sincerely,

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Attachments

- Attachment 1 - Overlap of BLM proposed variance application areas and Citizens' Proposed Wilderness areas
- Attachment 2 - GIS data for Citizens' Proposed Wilderness areas
- Attachment 3 - S. 1024

Thank you for your comment, Nancy Karl.

The comment tracking number that has been assigned to your comment is SEDDsupp20133.

Comment Date: January 27, 2012 15:47:01PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20133

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Privacy Preference: Don't withhold name or address from public record
Attachment: MDLT.BLM.PEIS.Comments.Jan2012.pdf

Comment Submitted:

Mojave Desert Land Trust
Preserving land to enjoy forever
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January 26, 2012

Solar Energy Draft PEIS
Argonne National Laboratory
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Argonne, IL 60439

RE: Comments on the Supplement to the Draft Solar Programmatic Environmental Impact Statement

Ladies and Gentleman,

Founded in 2005, Mojave Desert Land Trust (MDLT) is a non-profit 501(c)(3) organization whose mission is to protect the ecosystems, scenic and cultural resources of the California Desert. We accomplish our mission primarily through the acquisition of privately held lands within key conserved areas – Desert National Parks, Desert Wildlife Management Areas, and designated Wilderness areas.

During the last 5 years, MDLT has grown to become a landscape scale conservation partner to the National Park Service (NPS), Bureau of Land Management (BLM), Department of Defense (DOD) and the California Department of Fish & Game.

To date, MDLT has invested more than $18.6 million of private funding to acquire 36,400 acres of land within desert national parks, designated wilderness areas and wildlife linkages. As a major stakeholder of lands within the California desert, we must express our opposition to the Bureau of Land Management's (BLM) Preferred Alternative in the Supplement to the Draft Solar Programmatic Environmental Impact Statement (Supplement) to consider variance lands for utility scale solar development.

MDLT's considerable investment, along with the conveyance to the United States of more than 13,800 acres valued at $6.2 million, has been completed to support and work in concert with the BLM's and National Park Service's protection of wildlife habitat for threatened and endangered species, and to facilitate better management of large conserved areas (DWMA's, national parks and wilderness areas). MDLT has made a significant, positive impact on the checkerboard of inholdings within designated Wilderness Areas within the California Desert Conservation Area that includes Desert Wildlife Management Areas (DWMA), the Mojave National Preserve,

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Joshua Tree National Park and within the linkages that are vital to connecting these ecosystems. *To date, we have acquired more than 840 parcels to stitch these ecosystems back together.*

The BLM's consideration of variance lands for solar energy development beyond the previously defined Solar Energy Zones would have a significant impact on MDLT's conservation investments to date as well as on the wildlife linkages that must be maintained to connect large conserved areas in which we've made these investments.

In addition to our land acquisitions, MDLT has additionally invested in the restoration of thousands of acres of habitat, managing volunteer and paid field experts to conduct thousands of hours of work to ensure these lands are appropriately cleaned up and the habitats are on a path to restoration. The final goal in this effort is to make them suitable for conveyance to the United States and the public, and for their preservation in perpetuity. Large scale solar developments on variance lands would directly impact these investments and their preservation.

We must go on record to strongly oppose the variance lands for consideration in the Supplement. The sacrifice of nearly 1.5 million areas of public recreational lands for the convenience or profit of corporate interests that should be looking to rooftop solar applications or degraded lands for their projects, and allowing significant impacts to the millions of dollars and years of investments by conservation organizations who are good-faith and accountable partners with the BLM and other agencies, would be an unsuitable approach to serving the partnerships and the public who live and work in the California desert.

The Desert Renewable Energy Conservation Plan (DRECP) has undertaken the process by which new solar energy zones, both private and public land, will be identified. Hence, we see no need for a variance process to be a part of the solar energy program to meet renewable energy goals and request this process be dropped from consideration.

Respectfully,

Nancy Karl
Executive Director

Thank you for your comment, Alex Daue.

The comment tracking number that has been assigned to your comment is SEDDsupp20134.

Comment Date: January 27, 2012 15:49:54PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20134

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Attachment: Supplement to Solar DPEIS Comments - Utah (TWS and partners 1-27-12).pdf

Comment Submitted:

TWS et. al Utah comments.

January 27, 2012

Delivered via electronic submission to the BLM Solar PEIS website and U.S. mail (with attachments).

Shannon Stewart, BLM Solar PEIS Project Lead
Solar Energy PEIS
Argonne National Laboratory
9700 S. Cass Avenue
EVS/240
Argonne, IL 60439

Re: Comments on the Supplement to the Draft Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States (Utah portion)

Dear Ms. Stewart:

Please accept and fully consider these comments on the Utah portion of the Supplement to the Draft Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States (Supplement) on behalf of The Wilderness Society, Southern Utah Wilderness Alliance, Wild Utah Project and the Grand Canyon Trust. Please note that these comments are specific to the Utah portion of the Supplement – some of the signatory groups are also submitting separate comment letters addressing the other states included in the PEIS as well as overarching policy issues.

Overview

We appreciate the overall direction of the Supplement with its additional focus on guiding solar projects to low-conflict Solar Energy Zones (SEZs) in the Modified Solar Energy Development Alternative. The Department of Interior (DOI) and the Bureau of Land Management (BLM) have shown a strong commitment to zone-based development in both the Supplement and in public statements since the publication of the Supplement. We believe that this focus is critical for both the protection of wildlands and wildlife habitat and for meeting our climate and clean energy goals through the success of responsible solar development on public lands. **The BLM should continue to refine the Programmatic Environmental Impact Statement (PEIS) through the Final PEIS and Record of Decision (ROD), carrying forward the zone-based focus and most other elements of the Supplement, and sign the ROD by fall 2012.**

We also appreciate that the BLM has addressed many of the specific recommendations we made on the Draft PEIS regarding the Utah SEZs in the SEZ action plans in the Supplement. Completing the proposed additional analyses, pre-construction surveys, mapping and other reviews identified in the SEZ action plans will be very important for the success of low-impact solar development in the SEZs, and the BLM should ensure that these efforts are completed prior to development.

Our comment letter addresses several issues, including the following key issues:

- **Exclusion areas:** The Supplement should be strengthened by adding Citizens' Proposed Wilderness areas, BLM-identified lands with wilderness characteristics that are not managed to protect those characteristics, Greater sage-grouse habitat and the other areas listed below to the exclusion list.
- **Changes to SEZs and proposed SEZ action plans:** We support most of the changes to the SEZs and the SEZ action plans included in the Supplement. Key recommendations from our comments on the Draft PEIS that still need to be addressed are highlighted in this letter.

I. BLM should strengthen the exclusion areas in the Final PEIS.

We appreciate the set of exclusion areas included in the Draft PEIS and the Supplement to limit impacts to sensitive natural and cultural resources. The additional exclusion areas added in the Supplement will also help limit impacts and facilitate responsible solar development. **However, the BLM should also exclude the following areas from development[1]:**

- Citizens' Proposed Wilderness areas: lands proposed in the Supplement to be open to variance applications overlap with 116 units totaling 436,439 acres.[2] The examples of units with overlap with lands proposed to be open to variance applications described below underscore the importance of excluding all Citizens' Proposed Wilderness areas:

  Tule Valley and Tule Valley South proposed wilderness units: The Tule Valley and Tule Valley South proposed wilderness units make up one of Utah's few remaining intact basins in the state's west desert and "basin and range" complex. Today, Tule Valley is much the same as it has been for centuries, a remote and untrammeled basin pockmarked with hot springs, significant cultural sites, and home to *Rana pretiosa* (spotted frog) – a state sensitive species. The area is bounded by a few dirt roads but otherwise there are few signs of current human activity.

  Dirty Devil proposed wilderness unit: The Dirty Devil proposed wilderness unit is one of the west's most iconic landscapes with its incised redrock canyons, fantastic views, and unique history (Billy the Kid and his gang escaped into the Dirty Devil complex on several occasions to evade detection). On certain years, at peak runoff, river runners flock to the Dirty Devil river to run this remote and wild river. The proposed wilderness unit is also prized for its canyoneering, remote camping, and untrammeled vistas. BLM has confirmed on multiple occasions that this area has wilderness characteristics.

[1]Detailed rationales for excluding these areas from solar development were included in our April 18, 2011 comment letter on the Draft PEIS, and are incorporated here by reference.

[2]A spreadsheet detailing these areas is included as Attachment 1. Note that there may be other conflicts not identified in this analysis – due to limitations in accuracy of the available GIS data, we have excluded any areas smaller than one acre. GIS data for Citizens' Proposed Wilderness areas are included as Attachment 2.

Flat Tops proposed wilderness unit: The Flat Tops proposed wilderness unit is located just north of and forms a natural extension to the Dirty Devil proposed wilderness unit. However, unlike the Dirty Devil region, the Flat Tops consist of two significant mesas and surrounding undisturbed deserts and vegetated sand dunes. The area lies just east of Utah's famed Goblin Valley state park and Temple Mountain and west of the Maze District of Canyonlands National Park. BLM has confirmed on multiple occasions that this area has wilderness characteristics.

Mount Ellen proposed wilderness unit: The Mount Ellen proposed wilderness unit is contiguous to and an extension of the Mount Ellen- Blue Hills Wilderness Study Area (WSA). The unit's diverse terrain, steep slopes, isolated basins, dense forest, and barren alpine ridge tops all contribute to provide outstanding opportunities for solitude and primitive and unconfined recreation. Visitors come to this unit to experience solitude, enjoy the vistas into nearby Capitol Reef National Park, and catch sight of and enjoy viewing the largest free-roaming bison herd in Utah. The area is also popular with bison hunters. BLM has confirmed on multiple occasions that this area has wilderness characteristics.

Mount Pennell proposed wilderness unit: The Mount Pennell proposed wilderness unit is a diverse combination of high-elevation piñon and juniper woodlands, incised sandstone canyons, expansive mesas, colorful badlands, and rugged benchlands, providing outstanding opportunities for both solitude and primitive and unconfined recreation. There are extensive opportunities for such dispersed, undeveloped recreation activities as hunting, wildlife observation, photography, nature study, camping, and hiking. Extensive scenic vistas, rugged canyons, stark badlands, rolling and broken benchlands, and wooded high country combine to provide an ideal setting for visitors to experience primitive, unconfined recreation.

The combination of badlands, mesas, and canyons offer an impressive landscape of geologic diversity, linking the Henry Mountains with the Waterpocket Fold area. The bison herd in the Henry Mountains is one of the few free-roaming herds in the nation. The badlands and benchlands also provide habitat for the endangered Wright's fishhook cactus and a number of other candidate plant species.

See Utah Wilderness Inventory, 72 (1999). BLM has confirmed on multiple occasions that this area has wilderness characteristics.

Painted Rock proposed wilderness unit: Located in western Utah's basin and range country, the Painted Rock proposed wilderness unit consists of a horseshoe shaped mountain complex with notable different hues. The unit is extremely remote and connects visitors with the King

Top wilderness study area and Crystal Peak Area of Critical Environmental Concern (ACEC) and northern WahWah Mountains.

Nokai Dome proposed wilderness unit: All three of the large and remote Nokai Dome inventory units retain their generally natural appearance and have wilderness characteristics. Unit 3, with its series of major canyons, colorful badlands, and impressive 1,000-foot cliffs, provides outstanding opportunities for solitude and primitive and unconfined recreation. All of the units provide outstanding opportunities for solitude and primitive and unconfined recreation, either on their own or when considered in conjunction with the contiguous portion of the Glen Canyon National Recreation Area (NRA) that has been proposed for wilderness. BLM has confirmed that this area has wilderness characteristics.

Red Rock Plateau proposed wilderness unit: The eastern edge of the Red Rock Plateau and Copper Point proposed wilderness units are most often viewed by travelers as they drive the Highway 95 Bicentennial Scenic Byway, between the Glen Canyon National Recreation Area and Natural Bridges National Monument, which recognizes the area‘s outstanding natural beauty as well as its historic, cultural and recreational importance.

The crown jewel of this wilderness is the expansive Mancos Mesa, which is dissected east to west by the 20-mile long Moqui Canyon. Mancos Mesa‘s 180-square mile mesa top, bounded on every side by 1,000- to 1,500-foot-high cliffs, is the largest isolated slickrock mesa in southern Utah. Navajo Sandstone dominates the westward-sloping mesa, with elevations ranging from nearly 7,000 feet to 4,500 feet. Expanses of slickrock domes in shades of vermillion intermingle with sand dunes vegetated with ancient juniper trees, sagebrush, Mormon tea, and Indian ricegrass. Cottonwood trees and riparian vegetation can be found tucked away in canyons, fed by natural seeps and springs. Highly eroded and multi-hued badlands found beneath the rim complete the diversity of this outstanding wilderness. The Redrock Plateau and Copper Point proposed wilderness units also shelters extensive archaeological remains spanning thousands of years of prehistory and several different cultures. BLM has confirmed that this area has wilderness characteristics.

WahWah Mountains (North, Central and South) proposed wilderness units: The WahWah Mountains provide beautiful views of rugged mountain topography. There are spectacular scenic vistas in all directions from the higher elevations. Vegetation types transition from cold desert vegetation to ponderosa pine forests. This varied vegetation provides habitat for pronghorn antelope, mule deer, a variety of birds, small mammals, and reptiles. The North WahWah Mountains proposed wilderness unit extends the outstanding opportunities for solitude and

primitive recreation found within the contiguous WahWah Mountains Wilderness Study Area (WSA). The WSA's values include Crystal Peak, a mountain of white volcanic tuff visible for 50 miles; bristlecone pine, which grows in the higher portions of the WSA; and endangered, threatened, or candidate animal species. BLM has confirmed that much of this area has wilderness characteristics.

Snake Valley proposed wilderness unit: The Utah Wilderness Coalition Snake Valley proposed wilderness unit is located north of Utah State Highway 50, in far-western Utah, and is entirely within Millard County and adjacent to the community of Gandy. Great Basin National Park is roughly 20 miles from this proposed wilderness unit and can easily be viewed from within the unit. This proposed wilderness unit and the larger Snake Valley are unique and diverse, and are one of the last wild basin valleys within the "Basin and Range" topography in the state of Utah.

Particularly striking natural features of this remarkable landscape include vast expanses of desert washes and vegetation, a large lake in wetter periods and a shimmering white playa flat in drier times, expanses of large vegetated dunes and dune systems, and an exceptionally rare and productive wetland and marsh area that is dotted by several large ponds. These marsh and wetland areas are highly unique and provide visual contrast within this desert basin; they are rare ecosystems in western Utah. Foote Spring and Twin Springs feed the stream that flows through these marshes and the wetland area. Not only are these wetlands extremely beautiful in this desert area of the basin and range landscape, they also provide crucial habitat for many Utah state sensitive species, including the least chub and spotted frog.

- <u>BLM-identified lands with wilderness characteristics not managed to protect those characteristics;</u>
- <u>Potential Areas of Critical Environmental Concern (ACECs):</u> these areas were found to meet the relevance and importance criteria in recent Resource Management Plan revisions but were not designated or only had portions of the full area meeting the relevance and importance criteria designated;
    - Moab Field Office: Bookcliffs Wildlife Area – 5 acres;
    - Richfield Field Office: 5 areas totaling 20,228 acres;
        - Badlands: 1,692 acres
        - Dirty Devil/North Wash: 606 acres
        - Kingston Canyon: 94 acres
        - Lower Muddy Creek: 31 acres
        - Henry Mountains: 17,804 acres

            Henry Mountains Scenic and Wildlife Potential ACEC: The Richfield ARMP and ROD acknowledged that the Henry Mountains Scenic and Wildlife Potential ACEC offers several relevant and important values, including: scenic, wildlife, special status species, and ecological

values. In deciding not the designate this area as an ACEC, the Richfield ARMP and ROD states that these values will be protected through other means such as VRM II, limiting ORV use to designated trails, wildlife protective stipulations, and Special Recreation Management Area designations. In several instances BLM relies on implementation plans to provide additional, specific protection measures, however those plans have yet to be written or even initiated. Thus we urge BLM to defer making lands within this potential ACEC available for solar applications until these additional planning efforts have been completed to ensure that these resources are given the full protections envisioned by the ROD.

- Wild and Scenic River segments: These segments were determined eligible for Wild and Scenic River status by the Monticello field office but were not carried forward for a suitability determination.
    - Monticello Field Office:
        - White Canyon: 3170ft. BLM's Monticello field office identified White Canyon as eligible for designation under the Wild and Scenic Rivers Act as a "scenic" river, citing it's scenic and recreation 'outstandingly remarkable values.'
        - Lime Creek: 4363 ft. BLM's Monticello field office identified Lime Creek as eligible for designation under the Wild and Scenic Rivers Act as a "scenic" river, citing its cultural and recreation 'outstandingly remarkable values.'
        - Comb Wash: 1077 ft. BLM's Monticello field office identified Comb Wash as eligible for designation under the Wild and Scenic Rivers Act as a "recreational" river, citing its cultural 'outstandingly remarkable values.'
- Greater sage-grouse habitat: the Supplement states that "To meet the objectives of BLM's sage-grouse conservation policy, the Solar PEIS has excluded specifically identified sage-grouse habitat (currently occupied, brooding, and winter habitat) located on BLM public lands in Nevada and Utah". (Supplement at p. 2-18). We appreciate that BLM has added this important exclusion area to protect the Greater sage-grouse. However, the lands proposed to be open for variance applications in the Supplement include substantial acreage of Greater sage-grouse habitat, which should be excluded from development. Specifically, remaining occupied habitat and 75% and 100% breeding densities should all be excluded in Utah given the small number of birds in the state. Acres of overlap with Greater sage-grouse habitat proposed to be open for variance applications in the Supplement are:
    - Occupied habitat: 9,141 acres[3]
    - 75% breeding density: 9,682 acres[4]

[3] Data source: Utah Division of Wildlife Resources, available at: http://dwrcdc.nr.utah.gov/ucdc/downloadgis/Data/Habitat/Birds/GreaterSG2011.zip

- 100% breeding density: 61,600 acres
- Additional wildlife analyses the BLM should use to determine areas open for variance applications: we have attached additional wildlife analyses completed by Wild Utah Project that BLM should use in determining areas open for variance applications and required design features for project applications in sensitive wildlife habitat areas. *See* Attachment 3.

II. Changes to SEZs and SEZ action plans.

In addition to the specific recommendations relating to the Utah SEZs below, we recommend that the BLM include in the Final PEIS a chart for the SEZ that identifies not only the additional data that is needed but who is responsible for compiling the data and completing each item listed, as well as a timetable for completion of the individual tasks.

Escalante Valley SEZ

We are generally supportive of the proposed action plan for the Escalante Valley SEZ. The proposed mapping and survey efforts will be particularly important for supporting responsible development within the SEZ. Key recommendations from our comments on the Draft PEIS that were not adopted in the Supplement are discussed below.[5] **Provided that BLM completes the proposed action plan prior to development and addresses the recommendations below, we support designation of the proposed Escalante Valley SEZ as a SEZ in the Final PEIS.**

- Minimizing impacts to Special Status Species: We appreciate the BLM identifying a non-development area in the southwest corner of the SEZ to avoid impacts to the dry lakebed there. We also support the pre-disturbance surveys identified in the Supplement. Where Special Status Species habitat is found, the Final PEIS should include measures to avoid, minimize and mitigate impacts.
- Minimizing impacts related to vegetation removal, soil disturbance and dust: We support the habitat and vegetation mapping efforts identified in the Supplement, and recommend that additional specific design features be included in the Final PEIS to minimize impacts.
- Ecological reference area: As stated in our April 18, 2011 comments on the Draft PEIS, we recommend that BLM identify a 1,000 hectare ecological reference area as part of the SEZ to provide a control area for researching impacts of utility-scale solar development and inform future efforts to minimize and mitigate impacts.

Milford Flats South SEZ

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[4] Data source for 75% and 100% breeding densities: Doherty, K. E., J. D. Tack, J. S. Evans, D. E. Naugle. 2010b. Mapping Breeding Densities of Greater Sage-grouse: A Tool for Range-wide Conservation Planning. Prepared for Bureau of Land Management. BLM Completion Report: Inter Agency Agreement #L10PG00911. (Sep. 24, 2010).

[5] Detailed rationales for all SEZ-related recommendations were included in our April 18, 2011 comment letter on the Draft PEIS, and are incorporated here by reference.

We are generally supportive of the proposed action plan for the Milford Flats South SEZ. The proposed mapping and survey efforts will be particularly important for supporting responsible development within the SEZ. Key recommendations from our comments on the Draft PEIS that were not adopted in the Supplement are discussed below. **Provided that BLM completes the proposed action plan prior to development and addresses the recommendations below, we support designation of the proposed Milford Flats South SEZ as a SEZ in the Final PEIS.**

- Minimizing impacts to Special Status Species: We appreciate the BLM identifying a non-development area composing the Minersville Canal, which will avoid impacts to species with habitat along the canal. We also support the pre-disturbance surveys identified in the Supplement, as well as the proposed mapping of playa habitat, woodland habitat, and rocky cliffs and outcrops, which are all habitat types that may contain Special Status Species. Given the potential for Special Status Species habitat within these habitat types, these areas should be avoided. Where Special Status Species habitat is found, the Final PEIS should include measures to avoid, minimize and mitigate impacts.
- Minimizing impacts related to vegetation removal, soil disturbance and dust: We support the habitat and vegetation mapping efforts identified in the Supplement, and recommend that additional specific design features be included in the Final PEIS to minimize impacts.
- Ecological reference area: As stated in our April 18, 2011 comments on the Draft PEIS, we recommend that BLM identify a 1,000 hectare ecological reference area as part of the SEZ to provide a control area for researching impacts of utility-scale solar development and inform future efforts to minimize and mitigate impacts.

WahWah Valley SEZ

As detailed in our April 18, 2011 comments on the Draft PEIS, the remote nature of the WahWah Valley SEZ and the lack of an underlying Resource Management Plan (RMP) for the area make it the least appropriate of the proposed Utah SEZs. **For these reasons, we recommend that the BLM prioritize the designation of the Milford Flats South and Escalante Valley SEZs and de-prioritize the designation of the WahWah Valley SEZ until an RMP is completed for the area.**

Though we recommend that this SEZ be de-prioritized until completion of an RMP for the area, we are generally supportive of the proposed action plan for the WahWah Valley SEZ. The proposed mapping and survey efforts will be particularly important for supporting responsible development within the SEZ. Key recommendations from our comments on the Draft PEIS that were not adopted in the Supplement are discussed below.

- Minimizing impacts to Special Status Species: We appreciate the BLM identifying a non-development area along WahWah Wash, which will avoid impacts to species with habitat along the wash. We also support the pre-disturbance surveys identified in the Supplement, as well as the proposed

mapping of dry wash, playa, and greasewood flat habitats, which are all habitat types that may contain Special Status Species. Where Special Status Species habitat is found, the Final PEIS should include measures to avoid, minimize and mitigate impacts.

- Ecological reference area: As stated in our April 18, 2011 comments on the Draft PEIS, we recommend that BLM identify a 1,000 hectare ecological reference area as part of the SEZ to provide a control area for researching impacts of utility-scale solar development and inform future efforts to minimize and mitigate impacts.

III. Cumulative impacts analysis.

The Supplement states that the cumulative impacts analyses included in the Draft PEIS are currently being updated based on changes in the Supplement, and that updated analyses will be included in the Final PEIS. In order to fully support designation of the SEZs in Utah, the BLM should ensure completion of robust cumulative impacts analyses and include them in the Final PEIS.

IV. The BLM should provide a 60 day public comment period on the Final PEIS.

There will be a significant amount of new information in the Final PEIS, including updated SEZ-specific design features, SEZ action plans, cumulative impacts analysis and monitoring and adaptive management protocols. For this reason, the BLM should provide a 60 day public comment period on the Final PEIS. While we continue to encourage the BLM to complete the PEIS in a thorough and timely manner, it is very important that the public be given the opportunity to provide meaningful input on this new information in order to satisfy the requirements of the National Environmental Policy Act. Further, this comment period should not substantially delay the timeline for completion of the PEIS, because BLM's regulations obligate the BLM to provide a 30-day protest period and a concurrent 60-day governor consistency review of land use plan amendments. 40 C.F.R. §§ 1610.5-2; 1610.5-3.The proposed 60-day public comment period will run during these same timeframes.

Conclusion

We thank DOI and the BLM for proposing an approach to solar energy development on public lands in Utah that will focus appropriate large-scale solar energy development needed to help alleviate the effects of climate change in low-conflict zones. This approach will help ensure that the natural and cultural resources of Utah are protected for future generations. We look forward to working with the BLM as the agency finalizes the PEIS over the coming months.

Thank you for your thorough consideration of these comments.

Sincerely,

Alex Daue, Renewable Energy Associate
The Wilderness Society
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Attachments

- Attachment 1 - Overlap of BLM proposed variance application areas and Citizens' Proposed Wilderness units
- Attachment 2: GIS data for Citizens' Proposed Wilderness units
- Attachment 3: Wild Utah Project wildlife habitat analysis and recommendations

Thank you for your comment, Erin Lieberman.

The comment tracking number that has been assigned to your comment is SEDDsupp20135.

Comment Date: January 27, 2012 15:52:57PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20135

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Attachment: 012712_DoW_Solar_Comments.xlsx.xlsx

Comment Submitted:

Friday, January 27, 2012

Draft Solar Energy Programmatic EIS
Argonne National Laboratory
9700 S. Cass Avenue – EVS/240
Argonne, IL 60439

To Whom It May Concern:

Please find attached more than 35,000 comments from Defenders of Wildlife supporters regarding the Bureau of Land Management and Department of Energy's Supplement to the Draft Solar Programmatic Environmental Impact Statement (BLM/DES 11–49, DOE/EIS–0403D–S). Many of these individuals signed on to a version of the text below, however some chose to personalize their comments.

As a supporter of Defenders of Wildlife and someone who wishes to make solar energy development in the U.S. "smart from the start," I encourage you to strengthen protections for wildlife and natural resources in the Draft Solar PEIS.

First, I commend you for putting a stronger emphasis on solar energy zones--areas identified with few if any wildlife and natural resource conflicts. I encourage you to ensure that projects located in solar energy zones will be prioritized for development.

Although the Bureau of Land Management did the right thing by removing some highly sensitive areas from further consideration as zones (the Pisgah and Iron Mountain Zones in California), the agency has left open the possibility that solar development on some of these lands might still occur through the "variance process."

But variances should be extremely limited so that they are only used in rare instances where the conservation benefits are clear and can be documented. Variances should be the exception, not the rule.

To protect imperiled species like desert tortoises and bighorn sheep, the agency should exclude areas that have already been deemed unsuitable because of likely wildlife and resource conflicts.

America's degraded lands, like brownfields and old mining sites are not now included in most solar zones. They should be. Such areas are appropriate additional lands that should be available for development.

By developing degraded areas such as these -- rather than more sensitive and ecologically rich sites -- we can preserve important wildlife habitat and protect valuable natural resources.

America is transitioning from a society reliant on fossil fuels to one built on clean, renewable energy. But to make sure this is truly widllife-friendly energy development, we must make sure the process is smart from the start by:

1. Supporting solar development in designated solar energy zones--areas where conflicts with wildlife and other important natural resources can be avoided or minimized;
2. Limiting variances for projects outside of zones. Make them the exception, not the rule; and
3. Requiring developers to avoid, minimize and effectively mitigate any unavoidable effects on wildlife by promoting "wildlife-friendly" solar development.

I believe the changes listed above will greatly enhance your proposal and better protect America's rich natural heritage. Thank you for considering my comments.

Please accept these individuals' comments with regard to the U.S. Fish and Wildlife Service's proposed plan and our thanks for your agency's collaboration in ensuring that the voices of these concerned citizens are heard.

Sincerely,

Jim Lyons
Senior Director, Renewable Energy
Defenders of Wildlife
Phone: 202-772-3202
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Thank you for your comment, Patrick Donnelly-Shores.

The comment tracking number that has been assigned to your comment is SEDDsupp20110.

Comment Date: January 27, 2012 11:22:11AM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20110

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Attachment:

Comment Submitted:

This is an addendum to the paper I submitted as my comment to the original Draft PEIS, summarizing a critique of the Supplement. In summary: the SEZPA is the correct one to adopt. Especially given the flexibility built in by the potential of adopting new SEZs, there is no reason to chose the SEDPA. Please do not.

The Supplement shows BLM clearly responding to the huge outpouring of interest from the public to the PEIS. However, it isn't clear that truly substantive changes were made to the PEIS as a whole. Some of the most politically troublesome lands were eliminated from consideration, be they SEZs in particularly vulnerable or remote areas, or SEDPA lands which were the most sensitive and had attracted the most attention. And certain procedures such as Variances and SEZ-identification were enhanced, if for no other reason than to clarify National BLM priorities to a disparate group of state offices.
Despite these improvements, however, BLM still kept the SEDPA as its preferred alternative, declaring over 20 million acres of Public Land open to solar development, against the wishes of almost every commenter at the Sacramento public meeting referenced above, and at other public meetings, transcripts of which were made available on the Solar PEIS website. Estimates in the PEIS indicate that more than enough capacity would be available within the SEZs to meet the RFDS. It remains unclear as to why BLM continues to prefer the SEDPA, given the flexibility that has been built into the PEIS, and the fact that the document is not the exclusive authority governing the permitting of solar projects.

Thank you for your comment, Nada Culver.

The comment tracking number that has been assigned to your comment is SEDDsupp20111.

Comment Date: January 27, 2012 11:26:35AM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20111

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Privacy Preference: Don't withhold name or address from public record
Attachment: TWS et al Comments on Supplement to Solar DPEIS 1-17-12.pdf

Comment Submitted:

This is the second of our two submissions. Thank you for your consideration.

January 27, 2012

Solar Energy Draft PEIS
Argonne National Laboratory
9700 S. Cass Avenue
EVS/240
Argonne, IL 60439

Re: Comments on Supplement to Draft Solar PEIS

To Whom It May Concern:

Please accept these comments on the Supplement to the Draft Solar Programmatic Environmental Impact Statement (PEIS). We appreciate the Bureau of Land Management providing this additional information and an opportunity for public comment.

At the outset, we want to express our appreciation that the Supplement includes: (1) a revised preferred alternative that is zone-based and sets out a more comprehensive program; (2) a commitment to completing the PEIS in 2012; and (3) an acknowledgment of BLM's and the Department of Interior's authority and discretion to deny applications for rights-of-way on the public lands. We believe these elements will help the Department implement a responsible solar energy program in a timely manner.

The detailed comments set out below represent our best effort to improve the proposed framework in the Draft PEIS and Supplement, as well as to support generation of solar energy in the right places on the public lands.

BLM should add critical exclusion areas in the Final PEIS.

We appreciate the set of proposed exclusion areas set out in the Draft PEIS and the Supplement that will limit impacts to sensitive natural and cultural resources; clear exclusion areas are a key element of avoiding and reducing both environmental consequences and opposition. The additional exclusion areas included in the Supplement will further help limit impacts and controversy, and facilitate responsible solar development. **However, the list of exclusion areas (Table 2.2-1) should be modified to include additional sensitive resources, especially citizen-proposed wilderness and all BLM-identified lands with wilderness characteristics, including those that the BLM is not currently managing to protect those characteristics.** BLM's current guidance on inventory and management of lands with wilderness characteristics, Instruction Memorandum (IM) 2011-154, reiterates the agency's obligations under FLPMA "to conduct and maintain inventories" and "to consider identified lands with wilderness characteristics in land use plans and when analyzing project-specific solar applications under the National Environmental Policy Act," as well as providing guidance on considering alternatives to protect wilderness characteristics. IM 2011-154

was issued in July, 2011, after issuance of the Draft PEIS. The Final PEIS should both exclude these areas and acknowledge the new guidance.[1]

The Final PEIS should also include **desert tortoise connectivity areas[2], BLM Sonoran desert tortoise Category I and Category II management units[3] and Habitat Management Areas** (also referred to as Wildlife Habitat Management Areas) in the list of areas excluded from development and incorporate additional sensitive resources in the specific to states in the exclusion areas, such as those found in parts of the California Desert Conservation Area. These resources are identified and discussed in detail in separate, state-specific comments being submitted on the Supplement by some of our organizations. We also note that the BLM should incorporate data generated through the various interagency state and regional Crucial Habitat Assessment Tool development processes that are being managed by the Western Governors Association, which will assist in identifying crucial habitat and wildlife corridors, both of which are subject to protection under this PEIS[4].

Program and policy elements should be explicitly incorporated into RMP Amendments through the Solar PEIS ROD.

We appreciate that Appendix E to the Supplement reiterates that land use plans will be amended to identify exclusion areas, SEZs, and variance areas, and will also incorporate design features that mitigate impacts on environmental and cultural resources. We also support the agency's commitment to evaluating land use plans currently undergoing revision or amendment to address inconsistencies with the Solar PEIS. Pursuant to BLM's Land Use Planning Handbook, amendments are appropriate for incorporating new or revised policies that change terms, conditions or decisions from the existing plan. H-1601-1.VII.B.

In the Solar PEIS ROD, BLM should fully incorporate the changes in land use allocations and terms for approving solar energy development into the amendments, so that the **land use plan amendments include**:

- Language of the current instruction memoranda, especially those issued in fiscal year 2011 IMs; and

[1] Additional detailed rationales for excluding these areas from solar development and maps and GIS data of their locations were included in our May 1, 2011 comment letter on the Draft PEIS, and are incorporated herein by reference.

[2] The BLM's proposed connectivity habitats shown on Figure 2.2-2 (SPEIS at p. 2-36) should be replaced with the connectivity (or "linkage") habitats recommended by the FWS in its comments on the Draft PEIS. See comments of U.S. Fish and Wildlife Service, Draft PEIS, May 6, 2011, Figure B-2. It is important to understand that agency's recommendations identified lands to be included in a "…*minimum linkage design necessary for the conservation and recovery of the Mojave population of the desert tortoise*…" FWS DPEIS comments, Figure B-2 (emphasis added).

[3] Identified in: Bureau of Land Management. 1990. Strategy for desert tortoise habitat management on public lands in Arizona. Arizona State Office, Bureau of Land Management, Department of the Interior.

[4] *See also* Instruction Memorandum No. 2012-039, which instructs land managers to use prioritized wildlife and habitat information and data developed through state- and regional-level CHATs as a principal source to inform land use planning, as well as related natural resource decisions on public lands.

- The policy elements discussed in Appendix III to our comments on the Draft PEIS.[5]

BLM should not rely on IMs to implement policy, since IMs are explicitly intended to be temporary and do not clearly amend the terms of all RMPs, but rather should fully incorporate terms for approving solar energy development into land use plans through amendments.

In addition, the Solar PEIS ROD should incorporate a **process for updating affected plans through ongoing amendments and issuing interim guidance** pending completion of those amendments, including:

- Clarifying current statements in the Supplement that the BLM will continue to refine exclusions (*See*, Supplement, p. 2-13, noting that modifications to exclusion areas will result from adaptive management and monitoring and be incorporated into the Solar Energy Program) and that additions to exclusion categories can be made by state and field offices (Supplement, Table 2.2-1, Item #29, p. 2-17). The Final PEIS should provide that changes or additions to exclusion areas will be evaluated and incorporated through amendments to applicable land use plans instead of the general references to "appropriate" processes (Supplement, p. 2-13); and
- Identifying specific policies expected to be developed and describing the anticipated path forward for incorporating these into affected land use plans (again, the agency should not rely on IMs as a long-term source for guidance).

Requirements for ongoing and project-specific NEPA analysis should be elaborated.

The NEPA analysis set out in the Draft Solar PEIS regarding cumulative and landscape-level impacts, mitigation measures, changes to design features, and further assessment of SEZs, including natural and cultural resources, visual impacts, water use and transmission, has generally not been expanded in the Supplement. Appendix J has been expanded to include analysis of impacts on special status species that was conducted for the land within SEZs in the Draft PEIS, which will provide better information for tiering as this data is incorporated into the additional analyses deferred to the Final PEIS. As discussed in detail in Section II.A of our comments on the Draft Solar PEIS (incorporated herein by reference), the NEPA analysis conducted to date will support important elements of the BLM's solar energy development program as set out in the Draft PEIS and Supplement, including tiering to analysis from the PEIS and shorter timeframes for processing applications in SEZs.

Nonetheless, additional analysis is needed to successfully implement the program and approve individual project-specific solar applications. Based on information presented in the Supplement, we have concerns with seeming disincentives for completing project-specific environmental impact statements (EISs) and with continued deferral of data

[5] Comment letter of The Wilderness Society et. al on the Draft PEIS submitted on our May 1, 2011.

collection and analysis of other key elements of the program. Accordingly, we recommend the following **specific changes and provisions regarding NEPA analysis**:

- The Final PEIS should not require Director's Office concurrence *only* when an authorized officer determines that an EIS should be prepared to analyze a project within a zone. *See*, Supplement, pp. 2-20 – 2-21. Both the BLM and the Council on Environmental Quality have issued guidance regarding when an EIS or environmental assessment (EA) is appropriate. The Final PEIS should provide that the BLM will provide more specific considerations for determining when an EA or EIS is appropriate (to supplement existing guidance) and that employees may, as always, seeks advice from the Director's Office in making decisions about using an EIS or EA for project-specific solar applications within a zone. We are not taking the position that an EA will never be appropriate, but the current process sets out an apparent disincentive for BLM staff to use EISs even though EISs will often be the appropriate NEPA document.
- The Final PEIS should provide guidance on issues to be developed in NEPA analysis for specific solar applications within a zone, whether in an EA or EIS, including:
    - Identifying specific elements of analysis – simply stating (as the Supplement does) that "further evaluation will be required for future projects based on actual location, technology, POD, and so forth" (Supplement, p. 2-20) is not sufficient guidance. The Final PEIS should require that analysis of individual applications will address, at a minimum, features and resources of the actual location, technology, a reasonable range of alternatives, plan of development, cumulative impacts for affected landscape, and mitigation measures, and provide opportunities for public comment through scoping, preliminary alternatives, and draft NEPA document;
    - Specifying that robust public involvement is required, including requiring a comment period, even if using an EA, and emphasizing the benefits of early and ongoing public involvement, such as through providing preliminary alternatives for public comment;
    - Requiring cumulative impact analysis to address ongoing projects and stressors in the area, which cannot be accomplished through tiering;
- Preparation of regional mitigation plans is an important addition that could provide helpful information for tiering analysis of project-specific solar applications within those regions, including the much-needed cumulative impact analysis. The Final PEIS should include a clearer definition of the scope of these plans and a commitment and timetable for their completion[6];
- Because the adaptive management and monitoring plans will not be prepared until the Final PEIS, additional NEPA analysis in that document will be required to evaluate their effect on expected impacts;
- Changes to design features and additional analysis of SEZs, including natural and cultural resources, visual impacts, water use and transmission, are also deferred to the Final PEIS. Consequently, the agency will need to provide an opportunity for

[6] This is discussed in further detail in comments submitted by Defenders of Wildlife.

meaningful public comment on this analysis and respond to such comments in order to comply with NEPA[7].

The variance process should be clarified.

The variance process outlined in the Supplement is a new addition to the solar program and was not recommended by the conservation community in our comments on the Draft PEIS.[8] Nonetheless, we support the inclusion of a variance process because there are likely to be situations where development of projects outside of SEZs will be appropriate and will advance the goal of increasing sustainable generation of and access to appropriate solar energy resource areas (for example, when there is no room in existing zones in the near term, where a project with disturbed private lands can be expanded on similarly disturbed adjacent public lands, or where a project in a low conflict area is also in close proximity to existing transmission). *See* Supplement, p. 2-33.

However, it is crucial that this exception – i.e., authorizing new utility scale projects outside SEZs – does not become the rule – i.e., guiding development of these projects to SEZs in order to minimize environmental impacts. The variance process proposed in the Supplement was designed to "ensure that only those applications that can demonstrate that environmental impacts are minimized will be processed by the BLM." Supplement, p. 2-65. A few additional improvements, set out below, will provide even clearer guidance for developers evaluating potential sites outside SEZs and will reinforce Deputy Secretary Hayes' and BLM's commitments to locating utility-scale solar energy development in zones.

The Final PEIS should incorporate the following recommended improvements:

- State clearly that the burden is on the applicant to show that the proposed project-specific variance application is clearly appropriate; having committed to a zone-based program the BLM should not focus its limited resources on trying to "fix" proposals that are inappropriate;
- Provide that no applications will be accepted in areas identified as "high conflict" areas in IM 2011-061;
- Clarify that variance applications will be further screened to permit BLM to focus on proposed variance applications which appear to have the highest likelihood of success[9] (rather than using a "first in line" approach) and to give the lowest priority to applications that would affect sensitive or controversial resources (i.e., sage-grouse and desert tortoise habitats);
- For desert tortoise, employ special variance application requirements (rejecting Option 1 set out in the Supplement). *See* Supplement, pp. 2-35 – 2-36. Strengthen

[7] Since BLM regulations require a 30-day protest period and a concurrent 60-day governor consistency review of land use plan amendments (40 C.F.R. §§ 1610.5-2; 1610.5-3), the agency can provide an additional comment period during these same timeframes.

[8] Several of the groups submitting these comments did endorse the variance idea in comments that they submitted as members of the California Desert Renewable Energy Working Group (CDREWG).

[9] Ongoing processes such as Arizona's Restoration Design Energy Project and California's Desert Renewable Energy Conservation Plan could identify projects likely to succeed.

these requirements beyond those set out as Option 2 in the Supplement in order to address habitat quality in addition to numbers of tortoises. For applications in variance areas that are within the range of desert tortoise but outside of proposed connectivity areas (as modified by our recommendations above), the applicant must provide documentation of the following:

  - Project area has less than or equal to 2 tortoises (>160 mm Midline Carapace Length) per square mile; and
  - Where Habitat Potential Index Value is 0.7 or greater, verification that the habitat condition is "highly converted." This verification should be provided through application of science-based models of land conditions through field inspection[10];

- Adopt project-specific requirements for use in evaluating sites that include habitat for desert tortoise and/or greater sage-grouse. Species issues, and tortoise issues in particular, have proven to be the most problematic issues involved in the kind of ad hoc solar development process that is now underway. Without the kind of specific detail that is incorporated in Option 2 (Supplement, pp. 2-35 – 2-38), neither the BLM nor developers nor investors will have the kind of guidance that experience has shown that they need – i.e., specific standards that will help identify potential sites outside of SEZs that are appropriate; and
- Prior to accepting applications, the BLM should be required to consult with local municipalities affected to ensure applications are not in direct conflict with local land use plans such as comprehensive land use plans, open space plans, pending or adopted conservation plans or other officially adopted plans and policies.

Adherence to existing wildlife management policies should be affirmed:

The Solar PEIS should explicitly affirm that BLM land management policies, except where specifically modified in accordance with the Solar PEIS, will continue to guide land management and planning decisions. In particular, we point to current policies guiding the management of wildlife policies on public lands reflected in:

- Manual 6840 on Special Status Species Management for "sensitive" species – i.e., those at-risk, but not yet listed – which directs the BLM to "improve the condition of the species' habitat" or "minimize or eliminate threats affecting the status of the species";
- Manual 6500 on Wildlife and Fisheries Management which focuses on policy to "manage habitat with emphasis on ecosystems to ensure self-sustaining populations and a natural abundance and diversity of wildlife, fish, and plant resources on public lands" and further calls for the agency to "increase the amount and quality of habitat available"; and
- Handbook 4180 on BLM Rangeland Health Standards which states that "[h]abitats are, or are making significant progress towards being restored or maintained for Federal threatened and endangered species, Federal Proposed, Category 1 and 2 Federal candidate and other special status species."

[10] More detailed discussion of the scientific basis for these recommendations is provided in state-specific comments for California and Nevada.

In all these cases, the BLM's existing wildlife policy requires more than maintenance of the status quo. As such, these same policies apply to decisions affecting the siting, permitting, and development of solar projects on public lands; and **the Solar PEIS should reiterate the importance of complying with agency wildlife management policies**.

Thank you for your consideration of these comments. We look forward to seeing them addressed in the Final PEIS.

Sincerely yours,

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Thank you for your comment, Donald Krouse.

The comment tracking number that has been assigned to your comment is SEDDsupp20112.

Comment Date: January 27, 2012 11:38:14AM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20112

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Attachment:

Comment Submitted:

It would seem reasonable to ask for an extension of time to review this 582 document so, therefore, I do so request at least a 90 day extension.

Thank you.

Thank you for your comment, Alan Bea'ls.

The comment tracking number that has been assigned to your comment is SEDDsupp20113.

Comment Date: January 27, 2012 12:36:58PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20113

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Attachment:

Comment Submitted:

Please stay with the "preferred solar zone" alternative with regard to solar energy production. We need to save as many pristine environments as possible.

Thank you for your comment, Bill Harper.

The comment tracking number that has been assigned to your comment is SEDDsupp20114.

Comment Date: January 27, 2012 12:47:48PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20114

First Name: Bill
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Last Name: Harper
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Address 3:
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State: [Withheld by requestor]
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Country: [Withheld by requestor]
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Attachment:

Comment Submitted:

The PEIS facilitates fast tracking for a very marginal industry in very precious Public Land. Industrial solar with its transmission costs are unsustainable. Since the PEIS process has begun rooftop solar prices have dropped by more than half.

To say that these arguments are outside the scope of the PEIS is disingenuine if you are REALLY considering the economic and cultural aspects.

To say that what the BLM and the DOE is doing has nothing to do with other goverments subsidies is absurd. Especially since the DOE is handing out those subsidies.

The PEIS are also faciilitaing Secret contracts with Public power providers. Where is the energy security in such an arraingement?

How can we make sustainable energy decisions with such arraingements?

The solar monitors at Rice Valley showed a week this September with only with 30 percent insolation due to monsoon storms from Baja while LA enjoyed sunshine. No help during peak demand.

The current and future drought and resulting fire and dust is only going the futher reduce insolation.

We have had once a century weather events the times this decade on the east coast. Hurricane and tornado eason is longer than ever. The wind will blow much harder more often than in the past in the southwest. Damaged panels are not being replaced at current facilties (see Google Earth; Kramer Junction, California).

I am sure that many of these facilites will last less than 10 years.

Banning Solar power on public lands would give us cheaper power with security.

Are we gong to make the same mistakes again or, are we going to"Man Up"?

Sincerly, Bill Harper

Thank you for your comment, Jan Bodendorf.

The comment tracking number that has been assigned to your comment is SEDDsupp20115.

Comment Date: January 27, 2012 13:07:36PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20115

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Attachment:

Comment Submitted:

I am against large-scale industrial development of Solar power in the San Luis valley or anywhere else, do to the many and obvious adverse effects on wildlife, plants, and people.
I wholeheartedly support the development of small-scale, locally controlled solar projects. If something is worth doing it is worth doing well, and large scale corporate controlled installations would do more harm than good on so very many levels. Emphatically not the right way to proceed! Let's take a cue from Hippocrates- first, do no harm.

Thank you for your comment, Dawn Meidinger.

The comment tracking number that has been assigned to your comment is SEDDsupp20116.

Comment Date: January 27, 2012 13:15:43PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20116

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Attachment: BNSF comments re SDPEIS.pdf

Comment Submitted:

Comments being submitted on behalf of BNSF Railway Company are attached.

FENNEMORE CRAIG, P.C.

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January 27, 2012

Via Electronic Posting (http://solareis.anl.gov/involve/comments/index.cfm) and Priority Mail

Solar Energy Draft PEIS
Argonne National Laboratory
9700 S. Cass Avenue – EVS/240
Argonne, Illinois 60439

Re: Bureau of Land Management ("BLM") - Supplement to the Draft Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States ("SDPEIS"), 76 Fed. Reg. 66958 (Oct. 28, 2011); Draft Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States ("DPEIS"), 75 Fed. Reg. 78980 (Dec. 17, 2010)

Dear Sir/Madam:

On behalf of BNSF Railway Company ("BNSF"), please consider the comments submitted herein regarding the SDPEIS, and by implication, the DPEIS. BNSF is submitting these comments because of the increased emphasis in the SDPEIS on the variance process rather than pre-designated solar energy zones ("SEZ"). The more flexible variance approach increases the likelihood that solar generation facilities will be located near BNSF tracks. These comments are intended to highlight the areas where advance screening and planning would be beneficial in the site selection and variance approval process.

I. BACKGROUND.

BNSF provides long-haul rail freight service throughout the United States, including in the six southwestern states of Arizona, California, Colorado, Nevada, New Mexico and Utah, on more than 23,000 miles of track. Portions of this system of track are operated as transcontinental main lines, which are critical freight arteries between the eastern United States and west coast ports. BNSF and its predecessors have been operating these lines since the 1880s. Traffic on

some of these lines has exceeded 100 trains per day during peak periods, moving at speeds up to 70 miles per hour for freight trains, and 90 miles per hour for Amtrak trains.

II. BNSF AUTHORITY.

The authorities under which BNSF operates its system of track and to which these comments relate include the following:

A. BNSF owns many of its rights of way through federal land by virtue of federal grants to its predecessors under, *inter alia*, the Act of July 27, 1866, 14 Stat. 292, the Act of March 3, 1871, 16 Stat. 573, and the Act of March 3, 1875, 18 Stat. 482.

B. The Federal Land Policy and Management Act of 1976 ("FLPMA") does not authorize Bureau of Land Management ("BLM") to terminate, restrict or impede the rights of a holder of a pre-FLPMA right of way. 43 U.S.C. § 1769; *City and County of Denver v. Bergland*, 695 F.2d 465 (10th Cir. 1982).

C. Under FLPMA, a right of way issued by BLM must contain terms and conditions that "protect Federal ... economic interests ... and protect the other lawful users of the lands adjacent to and traversed by such right of way." 43 U.S.C. § 1765.

D. The Interstate Commerce Commission Termination Act of 1995 preempts any state law or legal action that interferes with rail operations or facilities, and lodges exclusive jurisdiction to regulate railroad operations and facilities with the Surface Transportation Board. 49 U.S.C. §§ 10501, *et seq.*

E. The Federal Railroad Administration ("FRA") has jurisdiction over railroad signaling and other rail safety regulations in accordance with the Federal Rail Safety Act ("FRSA"), the Railway Safety Improvement Act ("RSIA"), and other provisions of Title 49 U.S.C. and Title 49 C.F.R.

III. INDUSTRY COORDINATION.

The SDPEIS sets forth a process whereby BLM may consider a variance for the siting of a solar development project outside of a SEZ (*see* SDPEIS, Section 2.2.2.3, pages 2-33 through 2-40). The variance process contemplates BLM coordinating and consulting with various federal, state, local and tribal entities, as well as communicating with any potentially affected grazing permittee/lessee, and with the owner of any federal mining claims and/or mineral leases located within the boundaries of the proposed solar development project area. Unfortunately, the

SDPEIS variance process fails to adequately provide for the consideration of potential effects to railroad rights of way and railroad operations.

BNSF strongly recommends that at a minimum, the SDPEIS variance process specifically state that BLM must communicate with and give due consideration to the concerns of any potentially affected railroad right of way holder that maintains rights, facilities or operations near the boundaries of a proposed solar development project subject to the variance process. In addition to the issues noted above, issues unique to a particular solar development site under consideration for a variance should be identified early in the variance process. BLM will not be able to adequately identify such issues without input from railroad right of way holders, such as BNSF.

To the extent BLM personnel share the erroneous view reflected in the DPEIS that solar installations will not have a significant impact on railroads, BLM personnel may not include railroads among the potentially affected parties receiving notice under 43 CFR 2807.14. Because BLM is required to deny any variance that has the effect of terminating, restricting or impeding the operations of railroad right of way holders as a matter of law, identifying conflicts at an early stage of planning will benefit all participants in the process.

IV. SPECIFIC IMPACTS REQUIRING CONSIDERATION.

Interestingly, the DPEIS states in Section 5.19.1.1 that:

> **"[u]tility-scale solar energy projects are expected to have an insignificant impact on railroad operations."**

This cursory conclusion is unsupported and should be substantially revised in the final PEIS. In so doing, the BLM can look to the recently proposed Calico Solar Project near Barstow, California (CACA 49537) ("Calico Project") and the many issues that arose in the context of siting that project near the BNSF right of way.

As a result of the Calico Project, BNSF has developed a specific list of concerns relating to effects in the areas immediately surrounding its rights of way and track. These effects generally fall into six broad categories: (a) glint and glare; (b) stormwater runoff, hydrologic behavior and sedimentation; (c) right of way crossings; (d) transmission line safety and nuisance (e) hazardous materials management; and (f) emergency access. BNSF wants to ensure that these effects are adequately addressed and analyzed for any project considered for a variance outside of a SEZ. SDPEIS Section 2.2.1.3 indicates that the Design Features listed in Appendix A, Section A.2.2 of the DPEIS will be incorporated into the application process, so BNSF's comments are keyed to the applicable Design Features.

A. Glint and Glare.

Table A.2-1 in Appendix A of the DPEIS requires a Glint and Glare Assessment, Mitigation and Monitoring Plan, but the subsequent specifications do not adequately address potential railroad issues. For example, the last bullet point in Section A.2.2.1 indicates that "glare from reflective surfaces shall be evaluated through coordination with local airport operators," but does not address railroads. Similarly, Section A.2.2.13.1 under the subheading "Glint and Glare" recognizes the potential impact on "roadway users" but not railroads. The third bullet point of Section A.2.2.22.2 also fails to identify the public safety impact of glint and glare on nearby railroads. These examples suggest that BLM has dramatically underestimated the potential impact of glint and glare on railroads.

To the contrary, BNSF is very concerned that glint and glare from solar arrays installed in the vicinity of BNSF rights of way may interfere with critical safety and operational functions, including signaling and the ability of train crews to see potential safety hazards. Intense glint and glare from solar arrays installed near BNSF rights of way could cause the following serious impacts on transportation and public safety: (i) flash blindness or other visual effects preventing the crews from perceiving obstructions on the tracks or other safety hazards; (ii) blindness, veiling reflections or distractions preventing crews from maintaining visual contact with critical signals; and (iii) technology effects such as phantom signals caused by low-angle reflections on the signal equipment. Signaling and train safety are regulated by FRA, not BLM.

Glint and glare impacts have a very high potential to cause catastrophic crossing accidents or derailments. Even in the absence of catastrophic accidents, glint and glare impacts could cause major transportation delays because train crews must stop the trains on an emergency basis if they are not able to see the signals. When a train has been stopped through an emergency application of the brakes, BNSF General Code of Operating Rule 6.23 requires the engineer to inspect all cars, units, equipment and track. Trains on the main line exceed a mile in length and run approximately every 15 minutes, so it is not difficult to see that every emergency stop has the potential to cause significant delays with ramifications reaching from the ports of Los Angeles and Long Beach to Chicago and beyond.

BNSF recommends that, at a minimum, the SDPEIS include railroads in each instance where glint and glare impacts are to be assessed, and require any future solar development projects to analyze the effects of glint and glare on any affected railroad operators. Adequate analysis would require a site-specific and technology-specific study analyzing the effect of glint and glare on railroad signaling technology as well as on the visual perception of railroad personnel. Any such study must address the unique angles and field of vision experienced by railroad personnel traveling along the tracks near the project area. This type of modeling is feasible using available simulation technology and should be required for any project located anywhere near a rail line.

To the extent that glint and glare are identified as a safety concern, BLM should require the proponent to include adequate setbacks and/or shielding in the project plans prior to the approval of any solar development project. The above requirements should be incorporated at the programmatic level, and not simply addressed on a case-by-case basis, so as to ensure uniformity in application across all future solar developments projects.

B. Stormwater Runoff, Hydrologic Behavior and Sedimentation.

Table A.2-1 in Appendix A of the DPEIS requires both a Stormwater Management Plan and a Drainage, Erosion and Sediment Control Plan. The requirements associated with these plans are extensive, but based on BNSF's experience with the Calico Project, there is a danger that solar developers will seek to minimize the impacts of their projects on surrounding rail lines. Most of BNSF's main line tracks in this region have been in place for over 100 years, and BNSF has extensive experience dealing with geomorphic and hydrologic issues such as flooding, sedimentation, infiltration and subsidence. Much of the southwestern desert region is prone to flash flooding, with potentially catastrophic effects on BNSF's track structure. Large scale solar generation projects can be expected to have significant impacts on local hydrologic systems.

For example, the proposed Calico Project is located on natural "desert pavement" within an active alluvial fan sloping down toward BNSF's right of way. This situation is likely to recur as gently southward sloping alluvial fans may be considered attractive locations for solar development in a basin and range desert environment. Desert pavement is a crust consisting of coarser materials from which finer sediment has been removed by wind or water erosion. Alluvial fans are very large broad based flat lying geologic land surface structures resulting from very long periods of water and wind erosion. Active alluvial fans are by nature unstable, and disturbance of large areas of alluvial fans and desert pavement associated with solar project development will affect the stormwater runoff, hydrologic behavior, and sedimentation on the project area as well as on all down gradient areas.

Disturbance of alluvial fans and desert pavement will occur during construction and operation of a solar development project through several mechanisms. For instance, during the construction phase on the photovoltaic arrays currently proposed at the Calico Project, vertical steel posts will be driven five to six feet into the ground every 12 to 15 feet. Such construction requires heavy equipment to traverse virtually every square foot of a solar development project site, and will generate intense vibration, pulverizing, displacing and completely destroying the desert pavement crust throughout the entire project area. After construction, ongoing operation and maintenance activities will require the continual use of a system of unimproved access roads that are spaced on every other solar array, which will potentially amount to many hundreds, if not thousands of miles of roads. Use of the roads will create ruts and channels, which will in turn become erosion pathways for pulverized desert pavement during storm events, being fed by the parallel running drip lines of the solar arrays.

BNSF is very concerned that any future solar development project up-gradient from its rights of way or other railroad facilities may be impacted from such disturbance, potentially leading to subsidence, flooding, infiltration, fouling of track ballast and/or sedimentation of critical culverts and bridge structures under the tracks. BNSF strongly recommends that at a minimum, the SDPEIS address the unique issues associated with the disturbance of hydrologic systems, particularly desert pavement and alluvial fans, during the construction, operation and maintenance activities of a solar development project. BLM should be especially skeptical of claims that solar construction will have a minimal impact on these types of hydrologic systems. BLM should require any future solar development project to adequately analyze the effects of such activities as they relate to stormwater runoff, hydrologic behavior and sedimentation on down gradient railroad facilities. To the extent that effects are identified, BLM should require the construction of adequate runoff structures and/or implementation of controls prior to approval of any solar development project. The above requirements should be incorporated at the programmatic level, and not simply addressed on a case-by-case basis, so as to ensure uniformity in application across all future solar development projects.

C. Right of Way Crossings.

Table A.2-1 in Appendix A of the DPEIS requires an Access Road Siting and Management Plan. Access roads are addressed within the subsequent specifications for construction, operation, and in relation to adjacent realty, but specific issues associated with railroad crossings are not addressed. To the extent that a solar development project is sited adjacent to or on both sides of a BNSF right of way, it is likely that the solar project will require a right of way crossing for access. In addition, crossings for electric lines, water pipelines or for other purposes may also be necessary. The project proponent may desire to locate such crossings in areas that are not presently authorized by BNSF, FRA or the state regulatory agencies. BNSF is very concerned that in such circumstances, a solar development project proponent, and BLM, will simply assume that rights for additional crossings may be acquired without any input from the underlying right of way holder.

BNSF strongly recommends that the DPEIS and SDPEIS address potential right of way crossing issues, and require solar development project proponents to identify and acquire necessary rights for crossings prior to BLM giving consideration to projects that are adjacent to or straddle railroad rights of way. The above requirements should be incorporated at the programmatic level, and not simply addressed on a case-by-case basis, so as to ensure uniformity in application across all future solar development projects.

D. Transmission Line Safety and Nuisance.

Transmission lines are addressed throughout the DPEIS and the SDPEIS, but transmission planning does not appear to be addressed in any of the specific Design Features in Table A.2-1. Transmission lines close to railroad tracks can result in electrical induction on the rail. Electrical induction is a commonly overlooked effect of transmission lines, and it may result in significant health risks, including death by electrical shock. Electrical induction also has the potential for significant adverse impact on rail operations, including equipment and signal malfunction. Without addressing site specific issues, electrical induction problems can generally be avoided by maintaining at least a 300 foot setback from the outside edge of BNSF's right of way for parallel transmission lines, and requiring transmission lines to cross the tracks at a 90-degree angle. BNSF strongly recommends that BLM clarify where transmission lines fit into the early Design Feature deliverables, and include railroad setback requirements in the bullet point lists of issue to be addressed.

E. Hazardous Materials Management.

Table A.2-1 in Appendix A of the DPEIS requires a Hazardous Materials and Waste Management Plan. Utility scale solar electric generation facilities may involve the production, use and transportation of hazardous materials such as hydrogen. These concerns are site-specific and technology-specific, but any such material should generally be located away from the railroad right of way, and the need for either vehicular or pipeline crossings should be minimized. BNSF strongly recommends that BLM incorporate these requirements into the Design Features for Hazardous Materials and Waste in Section A.2.2.21 of the DPEIS.

F. Emergency Access.

Any project located along a significant stretch of railroad track should be required to ensure continued access to the adjacent rail by the rail operator in the event of a derailment or other emergency. Security concerns and biological mitigation plans may require installation of fencing or other facilities that could interfere with emergency access to BNSF's right of way. Project proponents should be required to plan for emergency access, including the possibility that BNSF may need to temporarily remove features such as fences. BNSF strongly recommends that BLM incorporate these requirements into the Design Features for Transportation Impacts, Design Features for Hazardous Materials and Waste, and Design Features to Ensure Health and Safety, in Sections A.2.2.20, A.2.2.21 and A.2.2.22, respectively, of the DPEIS.

V. RESOURCE MANAGEMENT PLAN AMENDMENT DEFICIENCIES.

Federal regulations require BLM to strictly follow and adhere to a planning process when making amendments to resource management plans. *See* 43 C.F.R. § 1610.5-5 (b) (process for amendments mirrors process for developing a new plan); *see also* 43 C.F.R. Subpart 1610. The objective of the planning process as set forth in the regulations is to ensure that BLM follows a sequence of steps resulting in meaningful participation in and comment on the preparation of an amendment. This process involves issue identification, the development of planning criteria and public comment thereon, as well as the development of alternatives and an assessment of effects of those alternatives.

As noted above, BNSF contends that important issues relating to railroad rights of way have not been identified or adequately addressed during the process of amending the many resource management plans identified in the SPDEIS and DPEIS. Further, BNSF notes that neither the SDPEIS nor the DPEIS set forth the proposed amendments to these resource management plans in an easily accessible or understandable format, and no alternatives (or related assessment of impacts) appear to have been provided by the agency. Because of these deficiencies, BNSF remains concerned that BLM has not met its burden under the applicable regulations, and that the entire resource management plan amendment process utilized by BLM in the SPDEIS and DPEIS may be legally deficient.

BNSF is hopeful that the identified deficiencies in the SDPEIS, and DPEIS by implication, will be adequately addressed in the Final PEIS. In addition, BNSF encourages BLM to coordinate with BNSF very early in the process regarding any future variance determination that may affect BNSF rights of ways and/or railroad operations. Thank you for your consideration of these comments.

Sincerely,

Dawn G. Meidinger

6630231

Thank you for your comment, Johnney Coon.

The comment tracking number that has been assigned to your comment is SEDDsupp20117.

Comment Date: January 27, 2012 13:46:25PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20117

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Attachment:

Comment Submitted:

I'm writing to comment on the Solar SPEIS. I've been a resident of Desert Center for over 35 years. I'm a landowner and former grape farmer. This land I love, if the government continues on this ill-advised course, will be scraped clean of the native old growth vegetation and then solar panels will take its place. The wildlife that survives the graders will then be run off their land, their homes and food sources destroyed. There are many of us who call the desert home, recreate here, respect and enjoy the subtle beauty, peace and quiet nature of these wild desert lands.
It makes me very angry that this administration, whom I pay my taxes to and who supposedly works for the people will not even consider as an alternative, distributed generation. This administration unlike any other is leading the way towards the wholesale destruction of the southwestern deserts. I do not appreciate my tax dollars being used to destroy our pristine public desert lands. And it is pristine wilderness. These are public lands that have never been cleared. Once cleared, they are forever changed and degraded.
Much is at stake here. From our decreasing water table that may not be able to continue to sustain us, to the eutrophication of the desert that would have a profoundly negative inpact on the desert flora and fauna. The release of arsenic that occurs naturally in desert soils, but when this soil is disturbed this carcinogen will be released for both humans and animals to breathe in. Our clean non-polluted bright blue skies currently free from airborne particulates, at least prior to the current construction now in progress, to our very dark night skies perfect for viewing the stars, planets and the milky way. The desert wildlife including the threatened desert tortoise, our health and well-being are all in peril.
This is bad policy, bad for the people and particularly bad for the environment and the animals that depend on it. We owe future generations an intact desert ecosystem, not one that has been abused and degraded for corporate profit and short-sighted greed.
Sincerely,

Johnney Coon

Thank you for your comment, Donald Forman.

The comment tracking number that has been assigned to your comment is SEDDsupp20118.

Comment Date: January 27, 2012 13:47:01PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20118

First Name: Donald
Middle Initial:
Last Name: Forman
Organization:
Address: 2438 Byron St.
Address 2:
Address 3:
City: Berkeley
State: CA
Zip: 94702
Country: USA
Privacy Preference: Don't withhold name or address from public record
Attachment:

Comment Submitted:

I support the preferred solar-zone alternative for solar-development applications.

“Variances” for solar development outside of solar-energy zones should be carefully limited to areas with low resource conflicts, and only when solar-energy zones contain insufficient land. Variance applications should be processed in accordance with IM No. 2011-061.

Additional exclusion areas should be added to include additional environmentally sensitive areas and those areas important to the survival of wildlife species such as wildlife-habitat management areas, golden-eagle foraging and nesting habitat, the entire Ivanpah Valley in both Nevada and California, Citizens Wilderness Proposals, lands acquired by the BLM for conservation purposes, and the entire Pisgah Valley.

Thank you for your comment, Freddie Romero.

The comment tracking number that has been assigned to your comment is SEDDsupp20119.

Comment Date: January 27, 2012 13:52:57PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20119

First Name: Freddie
Middle Initial: R
Last Name: Romero
Organization:
Address: 100 Via Jauna
Address 2:
Address 3:
City: Santa Ynez
State: CA
Zip: 93460
Country: USA
Privacy Preference: Don't withhold name or address from public record
Attachment:

Comment Submitted:

We can't continue to destroy lands and think that they will be of no effect to the environment.

Although the search for alternative energy and the implementation are noble and a worthy effort, we can't afford to do this at the cost valuble eco-systems that are the responsibility of those who hve been given the stewardship over.

When it comes to the installation of solar power, we need to give serious consideration for all alternatives to it's placement. With the millions and millions of square feet of rooftops that we have in this country, they do represent a viable alternative.

Lets not destory our deserts becuase they are there, but let's be a responsible nation to the stewardship of our natural resources.

Thank you for your comment, Andrea Guajardo.

The comment tracking number that has been assigned to your comment is SEDDsupp20120.

Comment Date: January 27, 2012 13:58:40PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20120

First Name: Andrea
Middle Initial: T
Last Name: Guajardo
Organization: Conejos County Clean Water, Inc.
Address: P.O. Box 153
Address 2:
Address 3:
City: Antonito
State: CO
Zip: 81120
Country: USA
Privacy Preference: Don't withhold name or address from public record
Attachment: Comment Supplement DPEIS SEZ .pdf

Comment Submitted:

Delivered online via project website

Attn: Linda Resseguie
Argonne National Laboratory
9700 S. Cass Avenue
EVS/240
Argonne, IL 60439

RE: Public Comment for the Supplement to the Draft Programmatic Environmental Impact Statement (PEIS) for Solar Energy Development in Six Southwestern States

January 27, 2012

Dear Ms. Linda Resseguie:

Conejos County Clean Water, Inc. (CCCW) thanks the Bureau of Land Management (BLM) and Department of Energy (DOE) for the opportunity to comment on the Supplement to the Draft PEIS (Supplement) for Solar Energy Development in Six Southwestern States.

Please accept this as a formal statement of concerns and recommendations from CCCW related to the Supplement specifically pertaining to the two sites proposed for Solar Energy Zone (SEZ) designation located in Conejos County, Colorado: Los Mogotes East, and Antonito Southeast. CCCW is a 501(c)(3) non-profit citizens' group, based in Antonito, Colorado, that is incorporated under the laws of the State of Colorado.

CCCW submitted a comment in April of 2011 with regard to the Draft PEIS for Solar Energy Development in six southwestern states. Please accept this comment as an update to that comment.

Since then, CCCW has attended various discussions throughout the state of Colorado regarding generation, transmission, and energy related policy. As a result, CCCW encourages conversations on energy use, especially on renewable energy and how it can be structured to offer a clean, affordable, sustainable, and environmentally friendly alternative to carbon and nuclear-based fuels.

CCCW recognizes the unique and valuable aspects Conejos County holds on our private and public lands in terms of resource value for the country's potential solar production. There is a history in Conejos County of supporting solar energy on a distributed scale to power center-pivot sprinklers, schools, and homes. CCCW encourages the development of renewable energy strategies that promote long-term public health, environmental health, water conservation, and the cultural preservation of Conejos County. CCCW respectfully requests that the DOE and BLM take a comprehensive, holistic, and sustainable view, and not compromise Conejos County's unique history, culture and environment in the process of implementing utility-scale solar development plans.

CCCW hosted a public forum with technical facilitation by Grand Environmental Services and Rebecca English & Associates on January 14, 2012 in Conejos, Colorado. The purpose of the forum was to provide an overview of the Supplement to community members unable to attend meetings in Alamosa County, and to encourage the community to submit comments to the BLM and DOE by January 27, 2012. CCCW gathered community concerns and recommendations, which CCCW tried to encompass in the following comment. As CCCW's executive director, I have observed there is a lot of confusion in our community as to the exact nature of a programmatic effort; there are segments of both strong support and strong opposition to the program. As a result, CCCW synthesized the reasons people support and oppose the program into concerns and recommendations. Thank you for providing the idea behind some powerful community discussions. Moving forward, we hope the BLM and DOE can be more present in the community to ensure that confusion is at a minimum. Thank you to BLM's Andrew Archuleta for participating in a portion of the community forum, his presence was very helpful. Please consider the comments on behalf of CCCW with appropriate gravitas.

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Background of CCCW and Relationship to the Affected Environment

Conejos County Clean Water, Inc.'s (CCCW) relationship to the affected environment remains largely unchanged since its original comments on the SEZs made in April 2011. In June of 2010, concerned citizens incorporated into a Colorado non-profit organization called Conejos County Clean Water, Inc. (CCCW). CCCW incorporated in order to promote awareness around health and environmental issues that affect residents in Conejos County, as a vehicle for protecting public health, and to responsibly manage natural resources. CCCW is comprised of ranchers, teachers, small business owners, and concerned citizens. CCCW has eleven Board members, who also serve as the organization's Steering Committee, and 402 general members.

The San Luis Valley (SLV; the Valley) in south central Colorado is one of the largest sub-alpine Valleys in the world, encompassing over 8,100 square miles. Hemmed in on the west by the San Juan Mountains, and on the east by the Sangre de Cristo Mountains, the SLV ranges in elevation from 7,000 to over 14,000 feet, and contains the headwaters of the Rio Grande River. The Rio Grande River rises in the San Juan Mountains to the west of the SLV, flows south into New Mexico and Texas and empties into the Gulf of Mexico.

The SLV has many unique biological features, including areas identified as Natural Heritage areas, and is home to six endemic insect species.

The SLV is 122 miles long and 74 miles wide. This largely agrarian and ranching community has a relatively stable population. Many of the residents are eighth-generation. The oldest Catholic parish in Colorado, Nuestra Señora de Guadalupe (Our Lady of Guadalupe) lies at the southern end of Conejos County. Conejos County is part of the Sangre de Cristo National Heritage Area (NHA). About sixty percent (60%) of Conejos County's population is minority, and pride in the Hispanic heritage is evident in everything from the names of the rivers, mountains, and towns, to the local Spanish/English radio station. The median household income is less than half the national average at $24,744, and 38 percent of the children live in poverty (US Census 2000).

The SLV is known for its potatoes and alfalfa, and also grows barley, lettuce, wheat, peas, and spring grains. It has been a farming and ranching community for over 150 years, and many of the residents work in agriculture, following in the footsteps of their parents and grandparents. Many of the farmers and ranchers still practice traditional methods. The SLV is the highest irrigated mountain plateau in the world, with about 7000 high capacity wells, over half of which are irrigation wells.

The SLV contains over 5 million acres, of which 3.1 million acres – about 59 percent – are publicly owned (Forest Service, BLM, Fish & Wildlife Service, National Park Service, or state). Conejos County contains over 825,000 acres, of which 561,000 acres – about 68 percent – are publicly owned (Forest Service, BLM, Bureau of Reclamation, or state). This land control configuration creates an important relationship between the public and private sectors with regard to air and water quality issues, and water and groundwater quantity issues, in the SLV and Conejos County.

There are 18 incorporated towns in the SLV, many of which are located along the Rio Grande or its many tributaries. Six counties lie within this large geographical boundary: Alamosa, Rio Grande, Saguache, Mineral, Costilla, and Conejos. There are 21 villages and five incorporated towns in Conejos County. Conejos County is among the poorest counties in the country, and unemployment levels run above the state and national averages (Conejos County 10.5%; as of 2008 – not including the chronically unemployed).

SEZ sites Los Mogotes East and Antonito Southeast are located in SLV's populated Conejos County near the incorporated towns of Romeo and Antonito respectively.

Supplement to the Draft Solar PEIS Document

(Supplement page 1-5)

CCCW recognizes this is a National Environmental Policy Act (NEPA) programmatic effort and understands the Supplement to the Draft Solar PEIS aims primarily to decide:

1) Which BLM lands are not suitable for solar development
2) Which BLM lands are suitable for:
    - Solar Energy Zones (SEZ) = smaller area acres all in the SLV
    - Zones Plus = larger area acres in SLV and elsewhere in Colorado. This includes a variance process to identify and designate new SEZs in the Zones Plus areas.
    - Under "No Action" almost all BLM lands would remain open to solar development, absent direct conflicts
3) Under what conditions BLM and DOE should decide to proceed into the next round of NEPA.

Many citizens of Conejos County speak Spanish only, or Spanish as their first language, and it would be helpful to provide project information in the regional colloquial Spanish. Thank you for the detailed and thorough preparation of the

Supplement. The document was very large and expensive to print out. Of our 402 members, only 70 have access to email and Internet.

CCCW respectfully recommends:

1) that BLM create the following materials in both English and Spanish for optimal public review and understanding, and for reference at public meetings:

    a. One-page summary documents for each state,
    b. Comparative tables summarizing the proposal, and
    c. A document enumerating impacts for SLV only.

2) that printed project documents in both English and Spanish be placed in libraries and post offices in Conejos County, due to extremely limited Internet access.

Purpose and Need

(Supplement pages 1-6 through 1-16 and Supplement page 2-2 through 2-10)

CCCW understands that the Supplement promotes a utility-scale (greater than 20 MW) development model. Various executive orders drive this choice of development scale: Executive Order (E.O.) 13212 ("Actions to Expedite Energy-Related Projects," Federal Register, volume 66, page 28357, May 22, 2011), and Secretarial Order 3285A1 (Secretary of the Interior 2010), federal policy mandates, Energy Policy Act of 2005, and the Renewable Portfolio Standards (RPS) of the states in the study area.[1]

We observe that this effort to streamline a permitting process for the utility-scale solar industry is policy-driven in consideration of scientific data regarding the necessity to achieve a clean energy future for the United States. We hope that this programmatic effort will lead to a clean energy future, but at this time it is speculative as to how this effort to streamline a permitting process on public land will shape our energy future in Conejos County, the SLV, the state and the nation. There is information and belief that the state of Colorado is meeting its renewable portfolio standard (RPS) prior to the 2020 deadline, meaning that there is 30% renewable energy already hard-wired in Colorado's largest investor-owned utility service territory (Xcel's Public Service Company territory).

Please accept as resource material the following data-driven policy planning guide to a carbon and nuclear free energy infrastructure with economic growth, *Carbon-*

[1] *See* Supplement page 1-3, Line 32 "the BLM has identified a need to respond in a more efficient and effective manner to the high interest in siting utility-scale solar"

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Free and Nuclear-Free: A Roadmap for U.S. Energy Policy by Arjun Makhijani, Ph.D.[2] CCCW recognizes that the PEIS has been an enormous and time-consuming effort for the BLM and DOE, undertaken at the same time during which both entities are charged with driving the United State to a clean energy future. However, the primary goal of a clean energy future does not appear to be an objective or a purpose, nor is it a need described in the PEIS documentation shared with the public to date.

At the same time, promoting utility scale development in Conejos County communities may devalue local efforts, and promote boom-bust energy cycles that incidentally create:

- **Maximum environmental impacts** by enforcing accelerated project schedules, [3]
- **Least local benefits** since there is not a legal revenue sharing mechanism due to the Federal Lands Management Policy Act of 1976, and [4]
- **A push for additional transmission** since there is only a 69kV line feeding Conejos County, which dead-ends in the incorporated municipality of Antonito.

Some local citizens speculate that this programmatic effort will remove a coal plant from the central grid, claiming that the additional central-scale solar developments will reduce dependency on fossil fuels. CCCW views these observations as a linear trade-off of a utility scale intermittent generation source for a continuous utility scale base load generation such as coal and nuclear, and notes these to be a false comparison. Listening to technical experts across the state of Colorado, CCCW understands that coal and nuclear provide continuous base load power on the central grid, and that natural gas buffers the intermittency created by the renewable energy load on the central grid.[5]

---

[2] Makhijani, *A Roadmap for U.S. Energy Policy*

[3] *See* Supplement page 2-10 Line 39 – "that construction must be completed within the time frames in the approved POD, but no later than 24 months after start of construction unless the project has been approved for phased development as described below," and Supplement page 2-10 Line 44 "the BLM will not authorize more than three development phases for any solar energy ROW authorization"

[4] *See* "Supplement page 2-Line 8 – ROW Authorizations – applications for utility-scale solar energy facilities will be authorized ROWs under Title V of FLPMA and 43 CFR Part 2800," Line 19 – "the term "ROW" as defined by FLPMA includes and easement, lease, permit, or license to occupy, use, or traverse public lands," and page 2-3 Line 22 "FLPMA does not provide existing or current authorities for the collection of royalties,"

[5] U.S. DOE/EIA-0383 (2011), *Annual Energy Outlook 2011 with Projections to 2035*, online at: http://www.eia.gov/forecasts/aeo/pdf/0383(2011).pdf

CCCW respectfully recommends:

3) that the Final PEIS include the distributed generation (DG) model for solar development as a viable approach in the SLV, and that BLM and DOE recognize that locally based generation and use is a way to promote reliability and redundancy. We request that BLM and DOE evaluate regional business models that make DG difficult to integrate into the central grid.

4) incorporation of the recommendations made in *Carbon-Free and Nuclear-Free: A Roadmap for U.S. Energy Policy by Arjun Makhijani, Ph.D*. into the Final PEIS.

5) that prior to an application for solar development being accepted on public land in Conejos County, private land according to the SLV siting map[6] be investigated. Development on private land allows local control of project schedule and size, allows for revenue sharing, and may eliminate the need for additional transmission.

6) that transmission and associated impacts be identified. There is a 69kV line to the town of Antonito (3 miles north of the Antonito Southeast proposed SEZ), but no plans to upgrade lines.[7] The Colorado Public Utilities Commission has not approved a plan for transmission south of Antonito.

7) that the Final PEIS clearly quantify how this programmatic effort will remove coal plants from the central-grid and reduce dependency on fossil fuels.

Array of Alternatives

(BLM - Supplement pages 2-1 through 2-82, DOE – Supplement pages 3-1 through 3-9)

The action alternatives proposed in the Supplement to the Draft Solar PEIS do not have adequate transmission for either the Los Mogotes East proposed SEZ or the Antonito Southeast proposed SEZ. CCCW notices that both transmission and storage need to be upgraded.[8,9]

This BLM and DOE programmatic effort targets the following for Colorado BLM: 2,194 MWs on 19,746 acres, Non-BLM: 731 MWs on 6,579 acres. We understand that BLM and DOE want to incentivize solar development by simplifying the process for developers. However, we are deeply concerned that we see no incentives for the local

[6] Siting map online at: http://slvec.org/images/stories/docs/6.23.10.SLVWPCEC_solarsensitiveresources_17x11_6162010.pdf
[7] Public Service Company of Colorado 2014 Renewable Energy Standard Compliance Plan online at: http://www.xcelenergy.com/staticfiles/xe/Regulatory/Regulatory PDFs/CO_11A-XXXE_2012_RES_Vol. 2.pdf.
[8] *See* page 1-8 of Supplement
[9] *See* Supplement page 2-26 "Encourage Solar Development on Appropriate Nonfederal Lands Line 3 - The DOI will encourage development of renewable energy on appropriate nonfederal lands. For projects proposed jointly on SEZ lands and adjacent private, state, Tribal, or U.S. DOD withdrawn lands, DOI's permitting incentives as described for SEZs would apply to the entire project".

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community. Examples of such communities that benefit from such incentives can be witnessed in communities such as Elko, Nevada, which thrives around mining areas, as well as communities near Carlsbad, New Mexico which thrive around Oil &Gas.

We recognize we are proposing a breaking of revolutionary ground with the concept of recommending a bridge between the two paradigms – BLM and DOE SEZ-paradigm, and the local community DG paradigm -- regarding desired SEZ developer DG subsidy, infrastructure impacts compensation, or gifts to communities, but please bear in mind the SLV has all four proposed SEZs for the state of Colorado in one watershed, and the Antonito Southeast proposed SEZ, in Conejos County, carries the majority of the acreage. In proposing to develop a new utility scale renewable energy industry, without a legal revenue sharing mechanism would be an exacerbation of the aforementioned socioeconomic and employment issues; please consider our recommendations as a feasible and necessary alternative to the current incentive program.

CCCW respectfully recommends:

8) That BLM and DOE consider another alternative in their analysis: Cap the total power generation goal in the SLV from renewable energy sources to equal the amount needed locally plus the amount that can reasonably be transmitted out of the SLV over Poncha Pass. This new proposed alternative does not force the development of new transmission corridors. Consider the following:

   - SLV has a peak load of 150 MW locally, and Valley distributed generation providers can transmit 550 MW out of the SLV over Poncha Pass with reasonable transmission upgrades; the SLV cap should be 700 MW of generation. The San Luis Valley Solar/Transmission Working Group calculates a higher number for the total SLV solar power cap at 950 MW, including 150 MW local load and 800 MW exportable power across Poncha Pass with Transmission upgrades.[10,11]
   - Emphasize efficiency, conservation, and "smart grid" technologies.
   - Consider small hydro and other technologies to round out the energy portfolio.
   - Add energy storage at all substations.
   - Phase in energy development to promote long-term jobs and revenue.
   - Work with the Governor's Energy Office and DOE to better understand options.
   - Use zoning, annexation, and other incentives to motivate energy-related companies to locate offices, assembly, and warehouse facilities in incorporated municipalities, rather than in construction trailers on county or federal lands.

[10] Brubaker and Associates, Inc. Alternatives to the San Luis Valley-Calumet Portion of the San Luis Valley Calumet-Commanche Transmission Project, dated October 28, 2009, p.4

[11] San Luis Valley Solar/Transmission Line Alternatives and Redundancy Recommendations, also know as the "Solar Position Paper" compiled by San Luis Valley Ecosystem Council in cooperation with the Citizens for San Luis Valley Water Protection Coalition, dated June 7, 2010 updated Junuary 14, 2012

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- Use incentives to motivate energy-related companies to hire local staff and construction workers. Encourage companies to prioritize hiring workers in local families who live in the towns of Romeo and Antonito rather than importing workers who live in "man-camps."
- Schedule energy construction work to avoid planting and harvest seasons to expand opportunities for local workers.
- Perform any new or existing infrastructure upgrades in a way that eliminates the exposure of Conejos County residents to harmful electromagnetic frequencies.

Please see Attachment A for adjacent non-federal sites identified at a Colorado Renewable Energy Workshop held in Monte Vista, Colorado at which the town of Antonito was a case study. The town of Antonito is strategically positioned at the end of the grid to monitor concentrated load and distribution to the agriculture community.

Infrastructure

(Supplement page 1-3, page 1-6 through 1-7, page 2-30 and page C-79 line 16)

CCCW raises the concern that there is inadequate existing transmission infrastructure to accommodate the large-scale utility development if any of the three action alternatives is selected in the Final PEIS. All action alternatives result in designating Los Mogotes East as an SEZ and designating Antonito Southeast as an SEZ. We observe that the Supplement has identified existing transmission corridors near proposed SEZ sites. To reiterate: there is just a 69kV line that feeds both the incorporated towns of Romeo and dead-ends in Antonito, approximately three miles north of the proposed Antonito Southeast SEZ. We understand this 69kV line will not export of power from a 20 MW project, which is the minimum size of project application eligible in the Supplement.[12] SEZ development therefore requires significant upgrade of transmission to be viable, confirming the Colorado Governor's Energy Office (2009) identification of the greater SLV as transmission-limited by the Renewable Energy Development Infrastructure (REDI). We have no major electricity load centers near Romeo or Antonito or transmission corridors approved south of Antonito into New Mexico, and there are no plans to upgrade lines. Upgrade of the lines over Poncha Pass is proposed in the year 2016. The Public Utilities Commission has not considered a plan for approval of a new corridor for transmission south out of Antonito, nor has it considered a transmission loop inside the Valley. In addition, in November of 2011, Xcel dropped its plan for a new transmission corridor to carry solar-generated electrons north to the front range population centers over La Veta Pass.[13]

[12] *See* Supplement page 1-3, Line 13 – "Comment from solar industry – sufficient acreage to accommodate projected levels of development, the identified SEZs might not be located in the right places for meeting market demand."
[13] Public Service Company of Colorado 2014 Renewable Energy Standard Compliance Plan online at: http://www.xcelenergy.com/staticfiles/xe/Regulatory/Regulatory PDFs/CO_11A-XXXE_2012_RES_Vol. 2.pdf.

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While the above focuses on electrical generation and transmission, parallel arguments can be said for other infrastructure including transportation and municipal, health/safety, workforce, and education services.

CCCW understands that Congress enacted NEPA to "promote efforts which will prevent or eliminate damage to the environment." 42 U.S.C.§ 4331. CCCW also understands the cornerstone of NEPA is the environmental impact statement (EIS) that federal agencies must prepare and circulate for public review and comment. An EIS is required for all "major Federal actions significantly affecting the quality of the human environment." 42 U.S.C.§ 4332 (2)(C); 40 C.F.R.§ 1501.4 "Major Federal actions" include those undertaken or financed by federal agencies. 40 C.F.R. §1508.18 (a). Federal agencies must prepare an EIS prior to initiating any major federal action so that environmental impacts can be considered and disclosed to the public during the decision-making process. 40 C.F.R. §§1501.2, 1502.5. In this document, the federal agency must identify direct, indirect, and cumulative impacts of the proposed and any connected actions, consider alternative actions and their impacts, and identify all irreversible and irretrievable commitments of resources associated with the action. 42 U.S.C. §4332(2). This requirement is commonly referred to as the agency's duty to take a "hard look" at the environmental impacts of its proposed action. The federal agency must also identify and evaluate the effectiveness and feasibility of any mitigation measures for alleviating identified impacts from the proposed action. 40 C.F.R. §§1502.14(f), 1502.15(h).

CCCW does not feel it is in the nature of a "hard look" to push transmission impact analysis to a site-specific NEPA analysis for specific projects. The reasoning is three-fold:

(1) If any of the action alternatives is selected in the Final PEIS, the percentage of public lands available for utility-scale solar development is reduced. Incentives limit developers to designated SEZs, forcing as yet unplanned transmission with unknown environmental and social impacts to accommodate utility scale developments.

(2) SEZs designated for development in the Final PEIS should be located near load centers and existing transmission to accommodate and ensure that programmatic efforts are developed in compliance with NEPA guidelines for minimizing impacts.

(3) Based on the existing infrastructure, approved transmission corridors, and location of the proposed Los Mogotes East SEZ and the proposed Antonito Southeast SEZ, it is imperative that transmission solutions and corresponding impacts are identified in the Final PEIS, should any of the action alternatives be deemed worthy of consideration.

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NEPA requires agencies to address connected actions in the same impact statement. 40 C.F.R. § 1508.25(a)(1). As the Tenth Circuit has stated:
A connected action is defined as being closely related to other actions and is identified based on three factors:

> (i) Automatically trigger other actions, which may require environmental impact statements.
> (ii) Cannot or will not proceed unless other actions are taken previously or simultaneously.
> (iii) Are interdependent parts of a larger action and depend on the larger action for their justification. 40 C.F.R. § 1508.25(a)(1).

CCCW respectfully recommends:

9) that transmission impacts are given a "hard look" in the Final PEIS as a connected action to this major federal action. BLM and DOE must explain why SEZ designations would be chosen in light of cumulative impacts from transmission development.[14]

10) that the BLM consider additional Zones Plus designations near the City of Pueblo and Colorado Springs on public lands near existing load centers and near adequate transmission.[15]

11) that the BLM and DOE identify and evaluate different infrastructure layouts in the SLV comparing: 1) large utility scale solar development and 2) locally based DG combined with BLM-supported DG capped at Poncha Pass transmission potential, and power storage at all substations.

12) that BLM and DOE require analysis of transportation access for the proposed SEZ designations. The San Luis & Rio Grande rail line ends south of the town of Antonito, approximately 2 miles north of the proposed Antonito Southeast SEZ, and within 250 feet of the Rio San Antonio (The San Antonio River). Riparian impacts of transportation would need to be assessed.

[14] San Luis Valley Solar/Transmission Line Alternatives and Redundancy Recommendations, also know as the "Solar Position Paper" compiled by San Luis Valley Ecosystem Council in cooperation with the Citizens for San Luis Valley Water Protection Coalition, dated June 7, 2010 updated Junuary 14, 2012

[15] *See* Supplement page 1-4, Line 17 – "Optimizing existing transmission infrastructure and corridors," and page 2-30 Line 17 – "In addition, the BLM will encourage local land use planning efforts to consider the need for, and identify as appropriate, new SEZs as part of ongoing land use plan revisions."

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Environmental Justice/ Socioeconomics

(Supplement page 2-1 page 2-3 through 2-4, page C-79, C-82, and page C-97)

Conejos County is an environmental justice community. The proposed SEZs in Conejos County are in environmental justice communities. Approximately sixty percent (60%) of Conejos County's population is minority, and pride in the Hispanic heritage is evident in everything from the names of the rivers, mountains, and towns, to the oldest church in Colorado, Nuestra Señora de Guadalupe, to the first Hispanic labor union in the United States, Sociedad Proteccion Mutua de Trabajadores Unidos (SPMDTU). The median household income is less than half the national average at $24,744, and 38 percent of the children live in poverty (US Census 2000). Conejos County is among the poorest counties in the country, and unemployment levels run above the state and national averages (Conejos County 10.5%; as of 2008 – not including the chronically unemployed).

It is the unfortunate plight of many poor, socioeconomically depressed communities to be forced to choose between their livelihood, sustenance and basic survival and the many intrinsic factors that make them human, such as their culture, heritage and local history. In a more Edenic context, the proposed Antonito Southeast and Los Mogotes East SEZs, in and around poor communities, would provide a means of meaningful, lasting and mutually beneficial revenue sharing, while still being cognizant of cultural landmarks, rich interwoven place and family histories, and the overall identity of the communities being affected.

Put another way, the current proposed Antonito Southeast and Los Mogotes East SEZs in Conejos County, have little in the way of long term or even medium range opportunity for the community. This is true in spite of the program's asking the locals to "give up" their public lands and in some instances their livelihood, i.e. longstanding ranching and grazing on BLM lands, so that a segment of the community can find fleeting relief from the manacles of poverty only to be cast back into the very same financial desperation once the projects on the proposed SEZs end. This proposal creates no infrastructure to sustain meaningful, sustained economic advancement or development. In addition, the proposed sites and their accompanying documents make no mention of cultural artifacts, or historical significance, in and around the proposed Antonito Southeast SEZ, In fact, the cultural and historical value of the area – which has deep and longstanding cultural and historic value for local communities – has not been closely examined.

We request that the DOE, BLM and the corporations considered for development put into motion a sustainable plan for revenue sharing and continued growth. Without such a plan, the development in the proposed SEZs will be, for all intents and purposes, asking the local citizenry to choose between two mutually

exclusive propositions, and will perpetuate and intensify environmental justice concerns.

Fortunately, for environmental justice communities, there is protection under Executive Order 12898 of February 11, 1994, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations. BLM and DOE are responsible for identifying and addressing potential disproportionately high and adverse human health and environmental impacts on minority or low-income populations. Minority persons include those who identify themselves as Hispanic or Latino, (race designated as a minority race under Council on Environmental Quality Guidelines [CEQ 1997]). Persons whose income is below the Federal poverty threshold are designated as low income.

Several concerns have been raised that fall under environmental justice consideration with regard to the programmatic effort. There was not an effort for meaningful involvement for residents in Conejos County for the Scoping Comments, Draft, or Supplement; instead, all such public involvement occurred in Alamosa County in Alamosa, Colorado, which is approximately 30 miles north of Antonito. Some community members in Conejos County work out of town during the week, and are too tired or unable to drive all the way to Alamosa. Programmatic documentation was inaccessible to the majority of residents in Conejos County. Again, CCCW has 402 general members, only 70 of whom having Web access. For those with access to the Internet, the documentation was large and expensive to print out.

Other environmental justice issues include:

- Federal incentivizing of multi-national corporations to develop on nearby public lands,
- Requiring bonding in the customary minimum amount of the project cost,
- Requiring utilization of only vendors proven in the BLM supply chain rather than local vendors who may be capable of fulfilling actual requirements,
- Neglecting to provide a tangible revenue-sharing mechanism to the County and local municipalities.

The programmatic effort disallows the involvement of local contractors and vendors, and puts a burden on County infrastructure such as water, roads, and bridges without offering ways for local communities to recover costs associated with enduring the nearby projects, and ways to sustain or grow local economies.

A final environmental justice issue we raise is the SEZ project impact of minimizing historical, cultural use of the land such as grazing. Conejos County is

composed of 68% public lands; grazing permits on all public lands have been integrated into the way of life in Conejos County for over 150 years.[16]

CCCW recognizes that the people in Conejos County who welcome large-scale utility solar development on public lands do so in anticipation of the socioeconomic benefits the potential projects could bring to Conejos County. Conversely, those who are opposed to large scale solar development on nearby public land do so because the cumulative impacts to culture and environment are not completely understood, and there is an element of historic distrust for federal agencies and for agency actions. This programmatic effort has caused fragmentation in our community, with approximately 15% of people excited about jobs, and others (about 20%) upset about impacts to infrastructure, culture, community, and the lack of access to a meaningful means for sustainable economic growth, further others (approximately 15%) that feel both ways want jobs, but also fear impacts. The remaining 50% seem not to want to weigh in either way for fear of upsetting any segment, or for lack of awareness about the effort

CCCW raises a few concerns regarding impacts to existing industry and sources of revenue to Conejos County, and raises some concerns as to how the actions proposed in the Supplement will impact the economy in Conejos County.

The Cumbres and Toltec Scenic Railroad (C&TS RR) has been designated an Area of Critical and Environmental Concern (ACEC), and is a large employer in the area surrounding the proposed Antonito Southeast SEZ. The ACEC is encompassed in the area proposed in the Antonito Southeast SEZ, including the area East of San Antonio Mountain. The C&TS RR ACEC embraces the area from Ortiz, Colorado to the Colorado / New Mexico border because of the high-value hills with flat open range for wildlife grazing, piñon, juniper, and ponderosa pine forests.

The proposed Los Mogotes East SEZ is also near a designated ACEC: approximately five miles from the proposed Los Mogotes East SEZ. This ACEC is located eight miles southwest of La Jara, where the Conejos River forms its southern boundary. This area was designed as an ACEC due to the critical winter range for big game species. Mountain plover, a BLM sensitive species, nests in this area. The area is characterized by wind sweep, gorgeous views of the Sangre de Cristo mountain range, and a traditional hunting area long cherished by Antonito and Capulin residents.

CCCW observes that development on public lands in proposed SEZs targets multi-national corporations, and leaves minimal room for local contractors and local vendors. The accelerated project schedule promoted by BLM and DOE promotes

[16] *See* Supplement page 2-5 Line 35 – "Notification to Livestock Grazing Operators", and Line 37 – "BLM authorized office will send a certified letter to the permittee/lessee to serve as the 2-year notification of the BLM's potential decision to cancel the permit/lease, in whole or in part, and devote the public land to a public purpose that may preclude livestock grazing."

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minimal local involvement. CCCW recognizes that the Supplement addressed the concern of leasing and phasing, but the root concern remains unaddressed. CCCW proposes that projects on public lands be structured as joint leases with municipalities, using local contractors to the full extent possible, and that the development is spread over 10-20 years to promote sustainable economic growth. [17]

Additionally, CCCW notes that the services, which municipalities of Conejos County would need to provide for, the proposed SEZs are in different parts of Conejos County and would thus strain various parts of the local service infrastructure differently. These differential impacts include schools, health/clinics including emergency services, road and bridge, and other municipal management all without a programmatic legal revenue sharing mechanism in place for local economies. Please note that BLM and DOE should not properly refer to Senate Bill 1775 introduced into the 112th Congress during the first session to promote the development of renewable energy on public lands and for other purposes, as a viable solution to answer revenue sharing questions to the local community. Senate Bill 1775 is not approved, and its future is uncertain.

Tourism, hunting and grazing are critical to the economic development and social stability of our region. People come to Conejos County for the peace and quiet it offers. If development of either of the SEZs occurs, CCCW requests that the following measures be put into effect to protect our already struggling economy.

CCCW respectfully recommends:

13) that DOE and BLM modify the proposed Antonito Southeast SEZ to conform to the final SLV BLM Travel Management Plan (TMP) Environmental Assessment (EA) and objectives which include: strict conformance to Visual Resource Management class objectives, protection of historical and visual values, and protection of National Register eligible cultural resources for C&TS RR.

14) that the Final PEIS SEZ designations not displace traditional hunting areas for local residents of Antonito and Capulin. Hunting offsets costs for food in the winter months.

15) cautious phasing of any solar development on SLV BLM lands, which would promote long-term, locally based jobs in Conejos County. CCCW recommends that BLM lands be developed over a period of 10-20 years.

[17] *See* Supplement page 2-3 Line 25 - "International or domestic experience with solar projects on federal or nonfederal land.", Line 27 – "sufficient capitalization to carry out development", Line 31 – "supply contracts with credible third-party vendors for the manufacture and/or supply of key components for solar project facilities," page 2-4 Line 6 – "…the financial and technical capability of the applicant to construct, operate, maintain and decommission the project," Line 19 – "Performance and Reclamation Bond", and Line 22- "The BLM will require a Performance and Reclamation bond for all solar energy projects to ensure compliance with the terms and conditions of the ROW authorization."

16) that BLM and DOE discuss local job multipliers in considerable detail, and what other local economic multipliers could be expected in Conejos County.

17) that BLM and DOE discuss the economic effects of solar materials created or assembled in the SLV versus those imported from elsewhere.

18) that BLM and DOE consider that local firefighters, first responders, and the La Jara hospital would need to be equipped with the proper gear and training to handle additional general risk and potential hazardous materials incidents, and require that developers offset the associated costs.

19) that BLM and DOE will change the contracting approach to allow for more equitable and appropriate revenue sharing with communities near the SEZs.

20) that BLM and DOE will offer guidance to local communities regarding potentially successful revenue sharing approaches.

21) that BLM and DOE will analyze and report on the socioeconomic impacts of the practice of not allowing local contractors to partner on leasing contracts, and provide analysis of ways to increase local contracting and lease partnerships.

22) that BLM and DOE will discuss what happens to the Payment in Lieu of Taxes (PILT) to Conejos County. PILT are Federal payments to local governments that help offset losses in property taxes due to nontaxable Federal lands within their boundaries. Conejos County received $964,140 in 2011.

23) that BLM and DOE discuss phasing and revenue sharing for the benefit of Conejos County as discussed above, offering guidance on upgrading community services particular to the solar industry.

24) that BLM and DOE consider emphasizing that developers must fund DG projects that would generate abundant power in smaller increments (less than 20MW) on sites on smaller pieces of ground that fit better into existing land use such as irrigation corners (SLV potential 2,500 MW), and sites that are already disturbed, as well as BLM lands. Also, please include smaller sites owned by towns, Conejos County, and school districts that can help reduce electrical costs. See Attachment A for sites identified in Conejos County during a Colorado Renewable Energy Society Workshop in Monte Vista, Colorado November 2011.

25) a phased approach of 10-30 MW per year for 10-20 years, in order to avoid boom-bust cycles and to promote permanent jobs and revenues for Conejos County residents.

26) that BLM and DOE aim first to improve local efficiencies and generate enough power to satisfy local needs, and then build generation up to the total amount that can be transmitted out of the SLV over Poncha Pass.

27) that BLM and DOE encourage formation of a local power authority that can manage and tax power generation, so SLV is not beholden to regional power companies.

That BLM and DOE develop proactive revenue sharing methods so that reasonable funding can go to: Conejos County school districts K-12 and technical training at local colleges; conservation of water, soil, and wildlife habitat; health and human services; and road and bridge mitigations and improvements in Conejos County.

28) that BLM and DOE ensure that all contractors and vendors in Conejos County are trained and registered in the Central Contract Registration (CCR) database, the primary supplier database for the U.S. Federal government, and the Dun and Bradstreet (DUNS) database.

29) that BLM and DOE ensure that all contractors and vendors in Conejos County are engaged in a meaningful way in any site-specific NEPA processes.

Natural Resources

CCCW appreciates the BLM and DOE siting effort that places the proposed SEZs on land with relatively low ecological value to mainstream majority cultures. However, every acre identified in the proposed Los Mogotes East site and the proposed Antonito Southeast site are still part of the greater Conejos County and SLV ecosystem. Every intact acre indicating a healthy ecosystem has high cultural, heritage, and public health value for the people who live in our area.

Geology and Soils

(Supplement page C-85, line 29-31)

CCCW would like to let the BLM and DOE know that soils in the area are shallow. Some residents who have already experienced large scale solar development in the SLV report that there is more sand and dust blowing around near the solar development.

CCCW respectfully recommends:

30) that BLM and DOE prohibit a loss of remaining soil structure by using advanced soil mitigation techniques including carbon-capture mechanisms.

31) that BLM and DOE prohibit typical over-lot grading (100% soil disturbance) and promote conservation of intact patches, stabilizing disturbances immediately, and conserving and reusing all topsoil materials immediately.

32) that BLM and DOE study the patterns of wind, sand and dust deposits in Conejos County and access the negative impacts that large-scale development would impose on the agrarian community.

Water

(Supplement page C-85 through C-86)

CCCW recognizes that water is the most precious natural resource in Conejos County and the SLV. Unfortunately, proposed SEZs such as the Antonito Southeast site and the Los Mogotes East site at the headwaters of the Rio Grande are already dealing with intense competition among potential water users for over-appropriated water supplies, Rio Grande Compact obligations to downstream users, and agricultural water use in the Valley. The biggest question and concern in the largely agrarian community remains: Where will the water come from for any proposed utility scale solar development, whether that development is on private or public land? Local renewable energy planning efforts are focused on center pivot sprinkler irrigation corners and on lands that are going out of agriculture rotation due to state water augmentation laws.[18]

There is a longstanding history of effort at the federal, state and local levels to protect and conserve water interests in the SLV, including:

- The Great Sand Dunes National Park and Preserve Act of 2000,
- CCCW as catalyst for halting a proposal to transfer from truck to rail radioactive, hazardous and toxic waste within 250 feet of the Rio San Antonio (San Antonio River), and
- the Valley's successful legal thwarting of a proposal by American Water Development Incorporated (AWDI) for the right to pump 200,000-acre ft. of water per year from the confined aquifer.

The large scale utility projects that would be developed on designated SEZs raise particular concerns for residents in Conejos County, especially any large scale solar

[18] Finley, "Water worries in Colorado's San Luis Valley come to surface." Online at: http://www.denverpost.com/news/ci_19756115#ixzz1jkYpi57G.

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thermal proposals with regard to the introduction of heavy oils for heat transfer; the introduction of ethylene glycol to stop water from freezing, and other types of potential spillage associated with development, including eutectic salts used in Concentrated Solar Power (CSP) technology.

CCCW's final concern regarding water availability leads to questions about converting an Agricultural water right into Municipal and Industrial (M &I) use, which could be the case with utility scale solar development. Once that change in water right occurs, it will remain in use for industrial scale purposes because it will no longer be economically feasible for it to return to agriculture. In viewing this scenario long term, it's important for BLM and DOE to understand that such designations essentially remove water from SLV's traditional water cycle usages in perpetuity.

CCCW agrees with BLM's and DOE's proposed call for low-water use facilities only, and thank the BLM and DOE for avoiding wetlands and open water.

CCCW respectfully recommends:

33) the Final PEIS develop water-wise guidelines for solar development, so that the agency and the concerned public can see the tradeoffs involved in proposed use of limited fresh water. It is imperative that the BLM be cautious about protecting these groundwater systems, so that they'll remain intact for traditional agricultural and cultural use for future generations.

34) that the BLM and DOE ensure that all renewable energy development in Conejos County:

- does not put at risk our critically important aquifer, wetlands and other water sources that support migratory waterfowl, diverse ecosystems, historical and vital water-intensive agricultural uses;
- does not in particular deplete the extensive but fragile aquifers that support these values, which CCCW and the citizens of the SLV have worked long and hard to protect.

35) that DOE and BLM quantify the impact of the future use of converted M & I water rights, especially where technological changes will occur that render these utility scale solar facilities obsolete.

Vegetation/Landscape/Reclamation
(Supplement pages C-86 through C-90)

It is very difficult to xeriscape in Conejos County and the SLV, which is a sub-alpine desert with fragile native and introduced vegetation. Preservation of the following native vegetation is important: piñon-juniper shrublands, ponderosa pine (higher elevation-near Forest BLM boundary). Reclamation was a concern raised at the forum CCCW hosted on January 14, 2012. Dust, sand and air quality are major issues of concern to communities in Conejos County and the SLV.

CCCW respectfully recommends:

36) that BLM and DOE develop conservation guidelines that include native buffer strips and shrub windrows. It's important to maintain native vegetation along solar-panel drip lines.

Air Quality
(Supplement page C-90)

CCCW respectfully recommends:

37) that BLM and DOE prohibit over-lot grading, promote conservation of existing soils and vegetation, use dust inhibitors on open ground, and evaluate potential wildfire impacts of burning solar equipment on air quality.

38) that BLM and DOE furnish and install AIRNET air monitoring stations in the incorporated municipalities of Antonito, Romeo, Manassa, Sanford, and La Jara; collect particulate matter data; and monitor associated public health metrics with regard to the impact on asthma and other respiratory diseases in Conejos County.

Wildlife
(Supplement page C-85, C-87 through C-89)

Conejos County has enormous wildlife values that should not be reduced or degraded. Both SEZs in Conejos County would impact open range for large mammal movement. Solar development should be coordinated with wildlife conservation.

The Conejos County region is known for its game animal hunting grounds, and CCCW appreciates that the BLM and DOE assess any impacts to game animals, such as disruptions to elk rut and calving. These sensitive cycles for the elk population are so

significant, widely appreciated, and well-known that particular roads are closed throughout Colorado during certain times of the year, particularly in the Spring, specifically to protect the calving areas, as tranquility during this time is critical for their survival.

The proposed Antonito Southeast site contains a plethora of wildlife resources including; Elk Overall Range, Elk Winter Range, Elk Severe Winter Range, Gunnison's Prairie Dog Colonies, Gunnison's Prairie Dog Overall Range, Mountain Lion Overall Range, Mule Deer Overall Range, Mule Deer Winter Range, Pronghorn Overall Range, Pronghorn Winter Range, Wildlife Linkage Corridor, Bald Eagle Winter, Bald Eagle Winter Range, and Black Bear Overall Range. The Los Mogotes East site includes; Elk Overall Range, Elk Winter Range, Elk Severe Winter Range, Gunnison's Prairie Dog Colonies, Gunnison's Prairie Dog Overall Range, Mountain Lion Overall Range, Mule Deer Overall Range, Mule Deer Winter Range, Pronghorn Overall Range, Pronghorn Winter Range, Wildlife Linkage Corridor, Bald Eagle Winter, Bald Eagle Winter Range, and Black Bear Overall Range. CCCW supports preservation of the winter wildlife range, mating grounds, and birthing grounds.[19]

CCCW respectfully recommends:

39) that BLM and DOE consider restricting the size and siting of the proposed Los Mogotes East and Antonito Southeast SEZs to preserve the winter wildlife range, mating grounds, and birthing grounds.

40) that BLM and DOE develop a conservation design to promote continuous wildlife movement across SEZs, maintain pods of conservation habitat within solar facilities, and evaluate impacts of high-flying waterfowl mistaking solar facilities as water bodies, along with a mitigation plan if impacts are identified.

Natural History and Cultural Resources Management

(Supplement page 2-7, page 2-13, page 2-17, page 2-20, page 2-23, and pages C-96 through C-97)

Conejos County has enormous natural history values including being part of the Sangre de Cristo NHA, and long human use. The mission of the NHA is to promote, preserve, protect and interpret profound historical, religious, environmental, geographic, geologic, cultural and linguistic resources. These efforts will contribute to the overall national story, engender a spirit of pride and self-reliance in local

[19] Attachment B - Species Data focus on 4 Solar Study Areas in the San Luis Valley totaling Approx. 22,000 acres, Areas include: **Detilla Gulch**-1520 acres, **Four Mile East**-3,878 acres, **Los Mogotes East**-5,905 acres and **Antonito South East**- 9,591 acres compiled by San Luis Valley Ecosystem County for the Draft Solar PEIS.

communities, and create a legacy in the Colorado counties of Alamosa, Conejos, and Costilla.

The geologic resources found in the NHA are directly associated with human habitation. The layered water systems first brought in game that attracted many Native tribes to the area over 12,000 years ago.

Hispanic settlers from the south were enticed to raise crops and sheep through land grants under Mexican communal law, a practice that was adopted under Spanish reign and continued when Mexico won its independence from Spain, to settle the region the NHA presently encompasses. When the Mexican-American war ended in 1848 and the territory was ceded to the United States with the signing of the Treaty of Guadalupe Hidalgo, the Conejos Land Grant (which includes present day Conejos County, Rio Grande County and portions of Alamosa County and Saguache County) was the only land grant that was petitioned for a patent and denied in its entirety.[20]

Subsequently, homesteading that began in 1861 brought Anglo influence to the area, and largely changed the trade and barter system to a currency economy. Hispanic and Anglo ranchers and farmers raised cattle and wheat, and have progressed to present-day crops of alfalfa, potatoes, and lettuce. The geographic isolation of the area has essentially preserved cultural identity of these rural communities.

This NHA includes the oldest Catholic parish in Colorado (Nuestra Señora de Guadalupe) in Conejos County, and the water with the oldest water rights in Colorado. To ensure the preservation of culture of the Conejos County population, it is important to capture the story of the land that is encompassed in the proposed Antonito Southeast SEZ and the proposed Los Mogotes East SEZ. It is important that the area be surveyed and ethnographically studied prior to final SEZ designation.

Recently, the National Park Service under the U.S. Department of the Interior convened with Colorado elected officials in Alamosa, Colorado. A study was proposed to determine the cultural resource value in several Counties in the SLV for a National Park designation. The counties named included Conejos County.[21]

The proposed Antonito Southeast site has traditional uses that follow the wildlife corridor's hunting, grazing and fuel gathering uses by people of Conejos County for more than 150 years. A CCCW group member shared pictures for the purpose of bringing awareness to the BLM about the cultural resource value that exists within the proposed Antonito SEZ, which is within the vicinity of the historic Old Spanish Trail.

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[20] McCourt, "*The Conejos Land Grant Southern Colorado"*, Colorado Magazine, Vol. 52 (1975): 36-51.
[21] San Luis Valley and Central Sangre de Cristo Mountains Reconnaissance Survey Report December 2011, online at: http://parkplanning.nps.gov/document.cfm?parkID=73&projectID=39991&documentID=44749

Please see Attachment C for cultural resource value and note the BLM is amenable to moving any sort of development five miles away from historical trails.[22]

CCCW respectfully requests:

41) that BLM and DOE acknowledge the area is part of a Mexican Land Grand: Los Conejos.

42) that BLM's and DOE's efforts assure that all development is done with respect to natural history and cultural values by performing complete cultural surveys and ethnographic studies of the proposed Antonito SEZ prior to SEZ designation, including utilizing local cultural authors and artists to capture the story. There are deep community concerns with accelerated project schedules and qualitative analysis completed to date which lack important documentation of natural resource and historic value.[23]

43) that BLM and DOE make concerted efforts to conserve areas of moderate to high probability of natural and cultural resources such as the proposed Antonito SEZ, including utilization of local artists and cultural authors to capture the story.[24]

44) that SEZ designations or developments not displace any historic grazing on BLM lands.

45) that BLM's Resource Management Plan (RMP) for the SLV meticulously honors the five-mile radius surrounding historic trails.

46) that SEZ designation not conflict with the *San Luis Valley and Central Sangre de Cristo Mountains Reconnaissance Survey Report, December 2011*.[25]

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[22] Dubois, "*BLM to expand buffer around historic trails from a quarter-mile to five miles",* The Westerner, online at: http://thewesterner.blogspot.com/2012/01/blm-to-expand-buffer-around-historic.html

[23] *See* Supplement page 2-17 "***#21 Areas with important cultural and archaeological resources, such as traditional cultural properties and Native American sacred sites, as identified through consultation and recognized by the BLM.",*** page 2-20 Line 18 – "…future reviews of applications within SEZs can tier to that NEPA analysis, thereby limiting the required scope and effort of additional project-specific NEPA analyses. Tiering is defined as using the coverage of general matters in broader NEPA documents in subsequent, narrower NEPA documents. This allows the tiered NEPA document to concentrate solely on the issues not already addressed.", Line 24 –"The extend of this tiering, however, will vary from project to project, as will the necessary level of NEPA documentation.", page 2-23 Line 1 – "SWCA Environmental Consultants to produce an ethnographic overview of six Tribes within the Great Basin region with cultural and historic ties to SEZs in Nevada and Utah.", page 2-23 Facilitate Faster and Easier Permitting in SEZs Line 41 – "The BLM will adhere internally to strict schedules for the completion of environmental reviews for applications in SEZs…."

[24] *See* Supplement page 2-7 Line 39 – "the BLM may also require bond coverage for all expenses tied to cultural resources identification, protection, and mitigation. This may include, but is not limited to, costs associated with ethnographic studies, inventory, testing, geomorphological studies, data recovery, compensatory mitigation…", page 2-13 Line - 27 "… recognizing that data regarding the actual impacts of solar energy development on various resources are still limited…will develop and incorporate into its Solar Energy Program an adaptive management and monitoring plan to ensure that data and lessons learned about the impacts of solar energy projects will be collected, reviewed, and, as appropriate, incorporated into the BLM's Solar Energy Program in the future."

[25] San Luis Valley and Central Sangre de Cristo Mountains Reconnaissance Survey Report December 2011, online at: http://parkplanning.nps.gov/document.cfm?parkID=73&projectID=39991&documentID=44749

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Visual Impacts
(Supplement pages C-90 through C-91)

CCCW supports the BLM's and DOE's decision to avoid high-visual-profile "power tower" type technologies. Please see ***Environmental Justice/Socioeconomics*** on pages 13-18 of this comment for a distribution of *Visual Impacts* to the C&TS RR, and Conejos County's local economy.

Cumulative Impact Considerations/Public Health
(Supplement page 2-20, 2-23 page C-97)

CCCW respectfully requests that any SEZ development adequately address the health impacts from exposure to electromagnetic frequencies and hazardous materials incidents (including from CSP), by including protective buffers around facilities and transmission lines, by developing proper guidelines for distances from homes, schools, etc., by defining potential transmission corridors that avoid homes, schools, etc., and by developing guidelines for community zoning to properly maintain protections. There are widespread concerns about accelerated project schedules and qualitative analysis completed to date, which precluded the importance of promoting meaningful public involvement in the environmental justice community of Conejos County.[26]

CCCW respectfully requests:

47) that BLM and DOE not adhere to strict accelerated SEZ development schedules in environmental justice communities such as Conejos County; rather, the priority should be to focus on meaningful community involvement and engagement in our rural community, coordinated through Andrew Archuleta, BLM SLV Field Manager.

Conclusions

CCCW respectfully requests that a representative from the Town of Antonito (Mayor Mike Trujillo, townofantonito@hotmail.com, 719.376.2012), the Town of Romeo (Mayor Don Martinez, romeo@centurytel.net, 719.843.5785), the Town of Manassa (Mayor Joe Mestas, townofmanassa@gmail.com, 719.843.5207), and the Conejos County Board of Commissioners (County Administrator Tresessa Martinez, 719.376.5772) be invited to be cooperating agency officials for either further NEPA

[26] *See* Supplement page 2-20 Line 18 – "…future reviews of applications within SEZs can tier to that NEPA analysis, thereby limiting the required scope and effort of additional project-specific NEPA analyses. Tiering is defined as using the coverage of general matters in broader NEPA documents in subsequent, narrower NEPA documents. This allows the tiered NEPA document to concentrate solely on the issues not already addressed.", Line 24 –"The extend of this tiering, however, will vary from project to project, as will the necessary level of NEPA documentation", page 2-23 Facilitate Faster and Easier Permitting in SEZs Line 41 – "The BLM will adhere internally to strict schedules for the completion of environmental reviews for applications in SEZs…."

analysis for SEZs or site-specific projects within any SEZ designation in Conejos County. CCCW understands it is BLM's internal policy to invite elected officials to participate in NEPA as a cooperating agency.

Thank you for your careful consideration of CCCW's concerns and recommendations. Please keep us informed of any upcoming public meetings in the SLV and Conejos County, and use us as a resource to connect you to resources in Conejos County. We can be reached via email at info@conejoscountycleanwater.org or via phone at 720-939-9948.

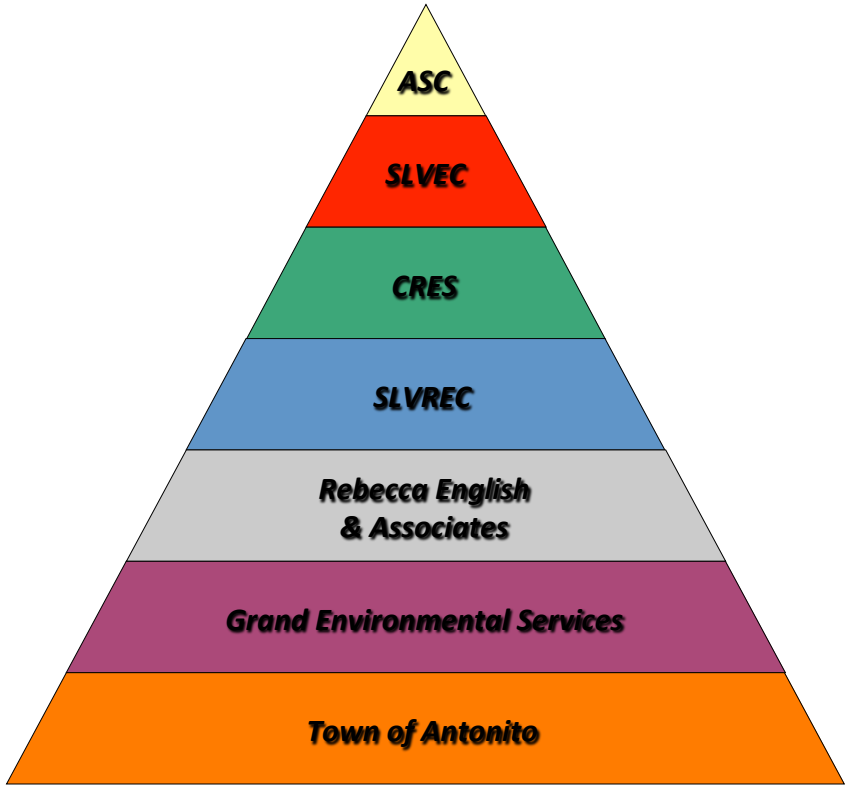
Respectfully submitted,

Andrea T. Guajardo, CCCW Director

Cc:
Gail Schwartz – State Senator
Ed Vigil – State Representative
Erin Minks – Representative for U.S. Senator Mark Udall
Brenda Felmlee – Representative for U.S. Congressman Scott Tipton
Charlotte Bobicki – Representative for U.S. Senator Michael Bennet
Steve McCarroll – Conejos County Commissioner
Mike Trujillo – Antonito Town Mayor
Don Martinez – Romeo Town Mayor
Joe Mestas – Manassa Town Mayor
Alicia Beat- BLM Archaeologist
Andrew Archuleta – BLM
Joe Vieira – BLM

Attachment A

Renewable Energy Planning – Colorado Renewable Energy Society (CRES)



- The Town of Antonito was a case study in November 2011 for a Colorado Renewable Energy Society (CRES) workshop in Monte Vista, Colorado.
- The sites in the following pages were discussed as well as a site adjacent to the proposed Antonito Southeast SEZ that is designated Sections 18 & 36 property, giving revenues to local schools.
- CCCW helped the Town of Antonito identify the sites for discussion at the workshop.

Proposed Renewable Energy Park – site (1) - Antonito Wastewater Treatment Facility

Photo credit: Mike Trujillo

- Identified as a good site for mixed use DG renewable energy development.
- The site is approximately 40 acres.
- The Antonito substation is directly across the street to the west.
- This site is approximately one mile north of the proposed Antonito Southeast SEZ.
- First project is a Community Solar Garden under the state of Colorado policy signed in 2010.

Proposed Renewable Energy Park – site (1) - Antonito Wastewater Treatment Facility

Photo credit: Mike Trujillo

- This is the substation that is at the end of existing transmission in the SLV.
- The transmission feeding this substation is 69kV.
- This substation is approximately 3 miles north of the proposed Antonito Southeast SEZ.
- This substation is directly across the street from the Antonito wastewater treatment facility.

Renewable Energy Planning – site (2) – Valle Escondido Ranch

- Case study – Valle Escondido Ranch
- Identified as a good site for small utility scale solar during CRES workshop (8 MW).
- Approximately 80 acres is presently for sale.
- This site is approximately one mile north of the proposed Antonito Southeast SEZ.

Photo credit: Mike Trujillo

Renewable Energy Planning – site (3) – Abeyta Ranch Center Pivot Sprinkler corners

Photo credit: Mike Trujillo

- Identified for future solar development to offset demand charges on corners while agriculture use remains.
- Approximately two miles north of the proposed Antonito Southeast SEZ.
- Corner capacity in the SLV has been identified by Colorado Harvesting Energy Network to have a 2,500 MW resource value.

Renewable Energy Planning – site (4) – South Conejos School District

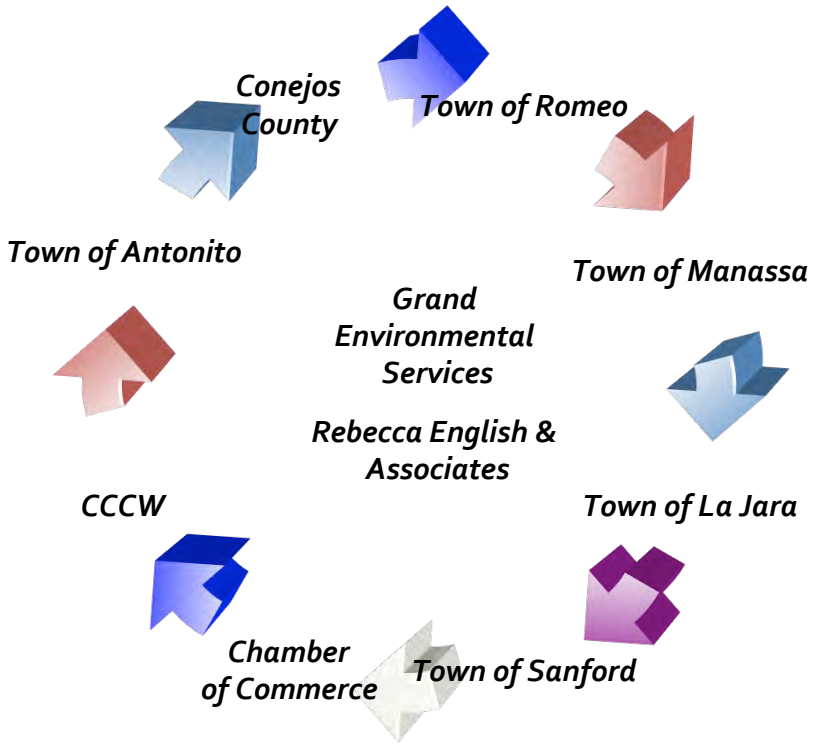
- Case study – South Conejos School District
- Lot was identified as a great location to elevate panels above parking.
- Create shade for a summer farmers' market.
- Approximately four miles north of proposed Antonito Southeast SEZ.

Photo credit: Mike Trujillo

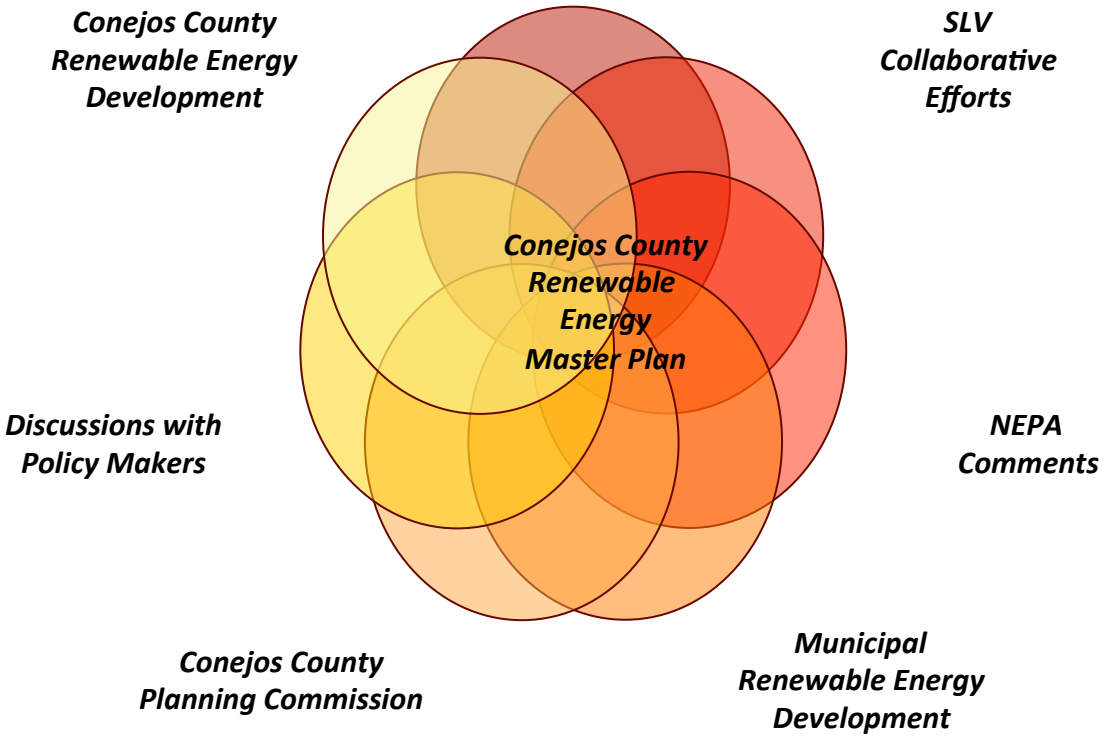
CCCW Would like to initiate the following collaborative planning effort in Conejos County during 2012

Potential Key Stakeholders:

- Town of Antonito
- Town of Romeo
- Town of Manassa
- Town of La Jara
- Town of Sanford
- Conejos County
- Chamber of Commerce
- Conejos County
- CCCW



Potential Utilization of Conejos County Renewable Energy Working Group Information



Attachment B

Species Data focus on 4 Solar Study Areas in the San Luis Valley totaling Approx. 22,000 acres, Areas include: **Detilla Gulch**-1520 acres, **Four Mile East**-3,878 acres, **Los Mogotes East**-5,905 acres and **Antonito South East**- 9,591 acres

Species	Detilla Gulch	Four Mile East	Los Mogotes East	Antonito Southeast	Miles in Length/Width
Elk Overall Range	Entire Study Area	Entire Study Area	Entire Study Area	Entire Study Area	
Elk Winter Range	496 Acres Along Hwy 285 2.75 mi	None	Entire Study Area 5,737 acres	5,442 Acres Western Half- 3.47 miles	
Elk Severe Winter Range	Same Area as winter range above	None	Entire Study Area	Same area as Winter range above	
Elk Summer Range	None	213 Acres NE Quadrant	None		.60 miles long .98 miles width
Gunnison's Prarie Dog Colonies	2 Areas 1. Along Hwy 285 2.05 Miles long, .23 miWidth, 2. entire eastern boundary .47 mi Length-.87 Width	1,016 Acres, 2.42 Mile long, 1.6 mi width Southern Quadrant	518 Acres 2.82 Mile length, .43 mi width Upper left Quadrant	9.48 acres Along western border .42 Mi length .05 mi width	
Gunnison's Prarie Dog Overall Range	Entire Study Area	Entire Study Area	Entire Study Area	Entire Study Area	
Mtn Lion Overall Range	Entire Study Area	Entire Study Area	Entire Study Area	Entire Study Area	
Mule Deer Overall Range	Entire Study Area	Entire Study Area	Entire Study Area	Entire Study Area	
Mule Deer Winter Range	1,127 acres Along Hwy 285 2.73 mi length, .81 width	None	134 acres 1.94 mi length, .15 mi width Western border of Study area	None	
Pronghorn Overall Range	Entire Study Area	Entire Study Area	Entire Study Area	Entire Study Area	
Pronghorn Winter Range	Entire Study Area	Entire Study Area	Entire Study Area	Entire Study Area	
Wildlife Linkage Corridor	Entire Study Area	Entire Study Area	Entire Study Area	Entire Study Area	
Bald Eagle Winter Forage	None	None	None	Entire Study Area	
Bald Eagle Winter Range	746 acres, Eastern border Parcel, 3 mi radius	Entire Study Area	Entire Study Area	Entire Study Area	
Black Bear Overall Range	Entire Study Area	Entire Study Area	Entire Study Area	Entire Study Area	
CNHP Potential CA's	Entire northern portion of study area 1.57 mi width 1.91 mile length	None	None	None	

Attachment C

Vicinity of Proposed Antonito Southeast SEZ - GPS Coordinates

Vicinity of Proposed Antonito Southeast SEZ - GPS Coordinates: Going into Costilla County from Conejos County's County Road G and bearing 1.5 miles East of Kiowa Hill, which is situated at North 37 degrees 05.202'; West 105 degrees 48.337' at elevation of

7754. Structures are said to have been USA Military-built structures built originally to house Japanese Prisoners of War (POW) in the 1940s

Vicinity of Proposed Antonito Southeast SEZ - GPS Coordinates

Signal Hill ¼ mile due East and North from N 37 degrees 05.202’; S 105 degrees 48.337’ at Elevation 7754 feet.

Vicinity of Proposed Antonito Southeast SEZ - GPS Coordinates

At a point approximately 2.5 miles due South from North 37 degrees 02.550’; West 105 degrees 55.671’ at elevation of 7777 feet.

Vicinity of Proposed Antonito Southeast SEZ - GPS Coordinates :

Possible Native American, Spanish, and/or Mexican symbols depicting some type of information is located on the “Picuris Trail”- East of present day La Florida, CO and bears South approximately 2 miles from North 37 degrees 02.550’; West 105 degrees 55.671’ at elevation of 7777 feet.

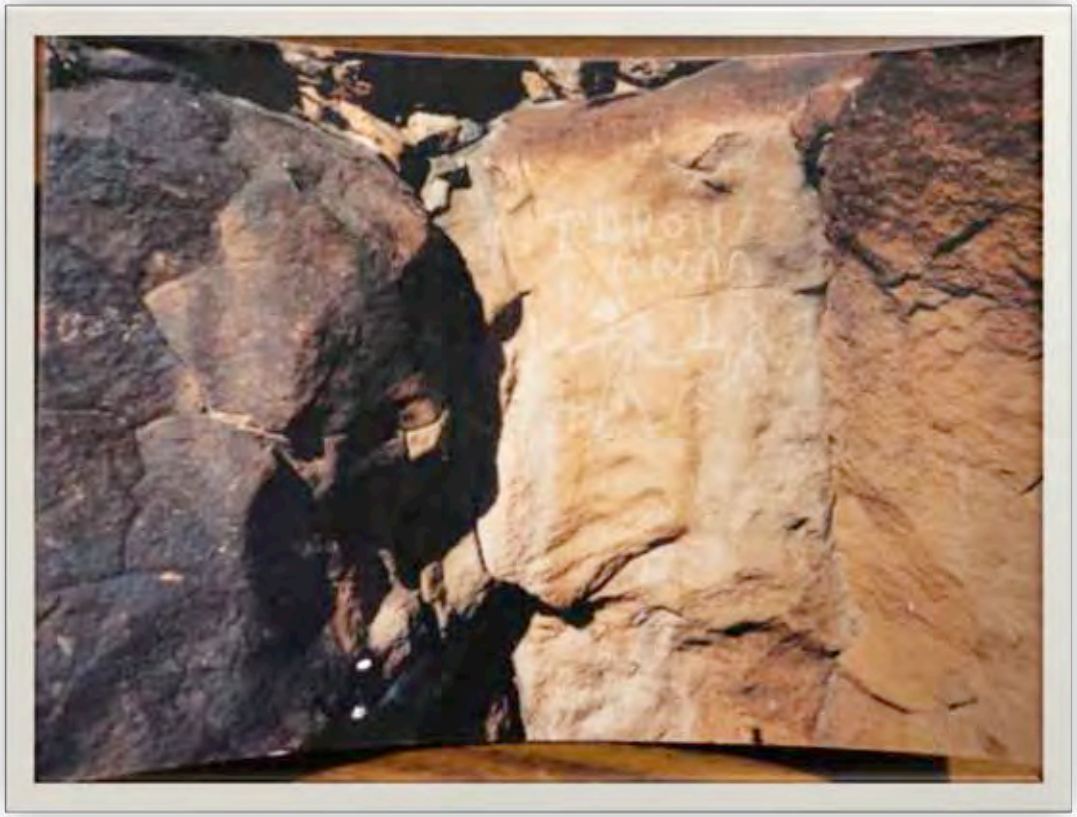
Vicinity of Proposed Antonito Southeast SEZ - GPS Coordinates: Approximately 2 miles from N 37 degrees 02.550’; West 105 degrees 55.671’ at elevation of 7777 feet.

Vicinity of Proposed Antonito Southeast SEZ - GPS Coordinates: rock fissures situated in vicinity of North 37 degrees 05.202’; West 105 degrees 48.337’ at 7754 elevation.

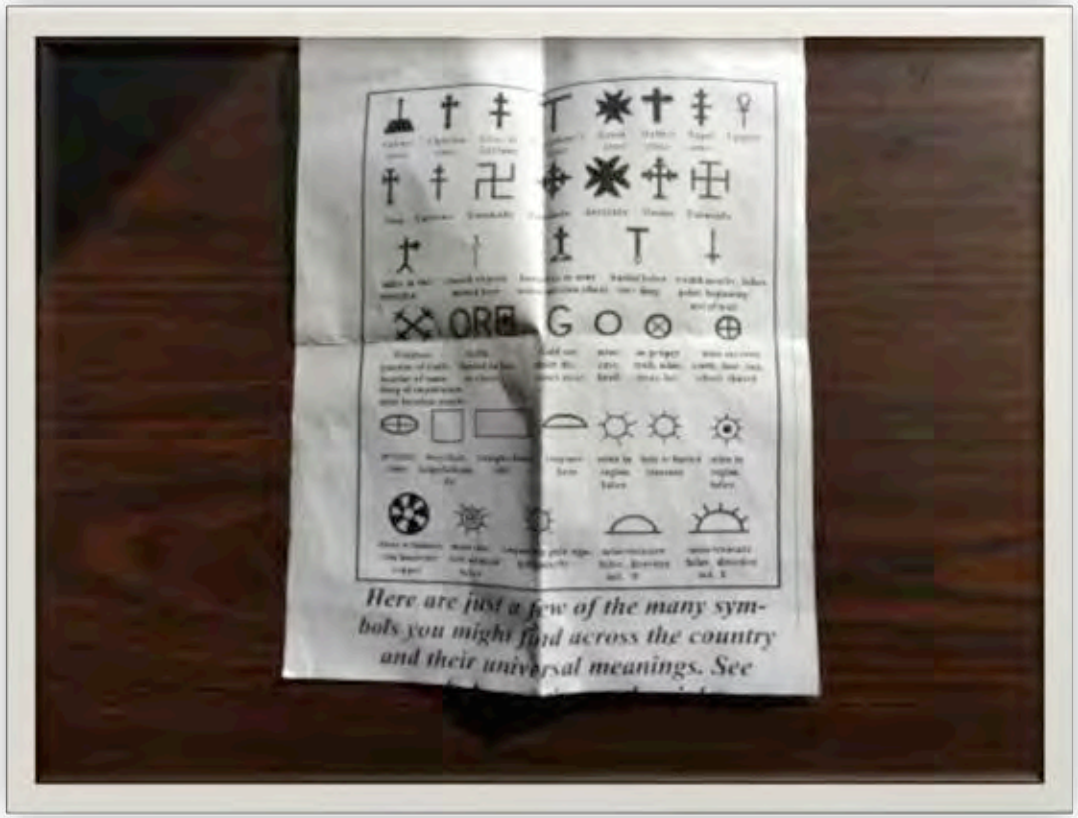
Vicinity of Proposed Antonito Southeast SEZ - GPS Coordinates: situated approximately at North 37 degrees 05.202’ ; West 105 degrees 48.337”.

Vicinity of Proposed Antonito Southeast SEZ - GPS Coordinates: North 37 degrees 05.202’ ; West 105 degrees 48.337’ at 7754 elevation.

Vicinity of Proposed Antonito Southeast SEZ - GPS Coordinates: at Picuris Trail approximately 2 miles from North 37 degrees 02.550’; West 105 degrees 55.671’ at 7777 elevation.



Vicinity of Proposed Antonito Southeast SEZ - GPS Coordinates: N 37 degrees 05.202’ W 105 degrees 48.337” at 7754 elevation.



Symbol meaning

All photos are courtesy of CCCW.

Thank you for your comment, James Thoresen.

The comment tracking number that has been assigned to your comment is SEDDsupp20121.

Comment Date: January 27, 2012 14:06:47PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20121

First Name: James
Middle Initial: A
Last Name: Thoresen
Organization:
Address: 3210 Brighton Street
Address 2:
Address 3:
City:
State: PA
Zip: 19149
Country: USA
Privacy Preference: Don't withhold name or address from public record
Attachment:

Comment Submitted:

The United States currently imports over 1 billion dollars per day in foreign oil. We need all of the enrgy that we can possibly produce domestically (especially renewables), therefore I support all solar / renewable energy that we can produce for our nation on our soils!

Thank you for your comment, Whitney Coombs.

The comment tracking number that has been assigned to your comment is SEDDsupp20122.

Comment Date: January 27, 2012 14:19:50PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20122

First Name: Whitney
Middle Initial:
Last Name: Coombs
Organization: National Wildlife Federation
Address: [Withheld by requestor]
Address 2: [Withheld by requestor]
Address 3:
City: [Withheld by requestor]
State: [Withheld by requestor]
Zip: [Withheld by requestor]
Country: [Withheld by requestor]
Privacy Preference: Withhold address from public record
Attachment: Supplement_to_Draft_Solar_PEIS_Public_Comments.xls

Comment Submitted:

I am submitting these comments on the behalf of the National Wildlife Federation. They were given by our members in response to an action alert on the Supplement to the Draft Solar PEIS.

Last_Name	First_Name	Street	City	State	ZIP	Response_Date	Comments
Robinson	Ronald	601 W Kings Hwy	Audubon	NJ	08106-2208	1/22/2012 16:48	Thank you for supplementing the Bureau of Land Management's draft proposal for siting new large-scale solar projects on public lands in the West. Please improve and finalize this much-needed program and continue to work to establish wildlife-friendly and consistent rules for developing solar energy on our public lands. The Supplement clearly draws on the input received from conservationists and others. Significant improvements to the draft include the commitment to do more research on wildlife impacts, the pledge to make more sensitive areas off limits to development, and the inclusion of additional incentives to drive development to low-conflict solar energy zones. With some additional work to limit development outside the designated zones and provide adequate mitigation for habitat losses, the proposed solar zoning framework will serve as an effective, strategic roadmap to developing the most appropriate solar resources on public lands. The best path going forward will guide solar development to lands with the highest quality solar resource, where the power generated can be delivered easily to consumers, and where there is the lowest potential for conflict with fish, wildlife, access, and other values and uses.
Lewis	Alan	340 Avenida De Las Rosas	Encinitas	CA	92024-4716	1/21/2012 12:41	Thank you for supplementing the Bureau of Land Management's draft proposal for siting new large-scale solar projects on public lands in the West. Please improve and finalize this much-needed program and continue to work to establish wildlife-friendly and consistent rules for developing solar energy on our public lands. The Supplement clearly draws on the input received from conservationists and others. Significant improvements to the draft include the commitment to do more research on wildlife impacts, the pledge to make more sensitive areas off limits to development, and the inclusion of additional incentives to drive development to low-conflict solar energy zones. With some additional work to limit development outside the designated zones and provide adequate mitigation for habitat losses, the proposed solar zoning framework will serve as an effective, strategic roadmap to developing the most appropriate solar resources on public lands. The best path going forward will guide solar development to lands with the highest quality solar resource, where the power generated can be delivered easily to consumers, and where there is the lowest potential for conflict with fish, wildlife, access, and other values and uses.
A	Sandy	Gopher	Saint Paul	MN	55128	1/21/2012 16:37	Thank you for supplementing the Bureau of Land Management's draft proposal for siting new large-scale solar projects on public lands in the West. Please improve and finalize this much-needed program and continue to work to establish wildlife-friendly and consistent rules for developing solar energy on our public lands. The Supplement clearly draws on the input received from conservationists and others. Significant improvements to the draft include the commitment to do more research on wildlife impacts, the pledge to make more sensitive areas off limits to development, and the inclusion of additional incentives to drive development to low-conflict solar energy zones. With some additional work to limit development outside the designated zones and provide adequate mitigation for habitat losses, the proposed solar zoning framework will serve as an effective, strategic roadmap to developing the most appropriate solar resources on public lands. The best path going forward will guide solar development to lands with the highest quality solar resource, where the power generated can be delivered easily to consumers, and where there is the lowest potential for conflict with fish, wildlife, access, and other values and uses.
A'Becket	Suzanne	21163 Patriot Way	Cupertino	CA	95014-5707	1/21/2012 13:50	Thank you for supplementing the Bureau of Land Management's draft proposal for siting new large-scale solar projects on public lands in the West. Please improve and finalize this much-needed program and continue to work to establish wildlife-friendly and consistent rules for developing solar energy on our public lands. The Supplement clearly draws on the input received from conservationists and others. Significant improvements to the draft include the commitment to do more research on wildlife impacts, the pledge to make more sensitive areas off limits to development, and the inclusion of additional incentives to drive development to low-conflict solar energy zones. With some additional work to limit development outside the designated zones and provide adequate mitigation for habitat losses, the proposed solar zoning framework will serve as an effective, strategic roadmap to developing the most appropriate solar resources on public lands. The best path going forward will guide solar development to lands with the highest quality solar resource, where the power generated can be delivered easily to consumers, and where there is the lowest potential for conflict with fish, wildlife, access, and other values and uses.
A'Harrah	Gayle	7-20 Aspen Way	Doylestown	PA	18901-2755	1/21/2012 13:21	Thank you for supplementing the Bureau of Land Management's draft proposal for siting new large-scale solar projects on public lands in the West. Please improve and finalize this much-needed program and continue to work to establish wildlife-friendly and consistent rules for developing solar energy on our public lands. The Supplement clearly draws on the input received from conservationists and others. Significant improvements to the draft include the commitment to do more research on wildlife impacts, the pledge to make more sensitive areas off limits to development, and the inclusion of additional incentives to drive development to low-conflict solar energy zones. With some additional work to limit development outside the designated zones and provide adequate mitigation for habitat losses, the proposed solar zoning framework will serve as an effective, strategic roadmap to developing the most appropriate solar resources on public lands. The best path going forward will guide solar development to lands with the highest quality solar resource, where the power generated can be delivered easily to consumers, and where there is the lowest potential for conflict with fish, wildlife, access, and other values and uses.
ABBEY	BEVERLEY	2246 Emerald Cir	Morro Bay	CA	93442-1588	1/21/2012 20:54	Thank you for supplementing the Bureau of Land Management's draft proposal for siting new large-scale solar projects on public lands in the West. Please improve and finalize this much-needed program and continue to work to establish wildlife-friendly and consistent rules for developing solar energy on our public lands. The Supplement clearly draws on the input received from conservationists and others. Significant improvements to the draft include the commitment to do more research on wildlife impacts, the pledge to make more sensitive areas off limits to development, and the inclusion of additional incentives to drive development to low-conflict solar energy zones. With some additional work to limit development outside the designated zones and provide adequate mitigation for habitat losses, the proposed solar zoning framework will serve as an effective, strategic roadmap to developing the most appropriate solar resources on public lands. The best path going forward will guide solar development to lands with the highest quality solar resource, where the power generated can be delivered easily to consumers, and where there is the lowest potential for conflict with fish, wildlife, access, and other values and uses.
ADAME	MIRIAM	373 Jamaica St	Aurora	CO	80010-4535	1/25/2012 12:57	Thank you for supplementing the Bureau of Land Management's draft proposal for siting new large-scale solar projects on public lands in the West. Please improve and finalize this much-needed program and continue to work to establish wildlife-friendly and consistent rules for developing solar energy on our public lands. The Supplement clearly draws on the input received from conservationists and others. Significant improvements to the draft include the commitment to do more research on wildlife impacts, the pledge to make more sensitive areas off limits to development, and the inclusion of additional incentives to drive development to low-conflict solar energy zones. With some additional work to limit development outside the designated zones and provide adequate mitigation for habitat losses, the proposed solar zoning framework will serve as an effective, strategic roadmap to developing the most appropriate solar resources on public lands. The best path going forward will guide solar development to lands with the highest quality solar resource, where the power generated can be delivered easily to consumers, and where there is the lowest potential for conflict with fish, wildlife, access, and other values and uses.
ADAMS	SPENCER	3707 Clarington Ave	Los Angeles	CA	90034-5843	1/21/2012 15:30	Thank you for supplementing the Bureau of Land Management's draft proposal for siting new large-scale solar projects on public lands in the West. Please improve and finalize this much-needed program and continue to work to establish wildlife-friendly and consistent rules for developing solar energy on our public lands. The Supplement clearly draws on the input received from conservationists and others. Significant improvements to the draft include the commitment to do more research on wildlife impacts, the pledge to make more sensitive areas off limits to development, and the inclusion of additional incentives to drive development to low-conflict solar energy zones. With some additional work to limit development outside the designated zones and provide adequate mitigation for habitat losses, the proposed solar zoning framework will serve as an effective, strategic roadmap to developing the most appropriate solar resources on public lands. The best path going forward will guide solar development to lands with the highest quality solar resource, where the power generated can be delivered easily to consumers, and where there is the lowest potential for conflict with fish, wildlife, access, and other values and uses.

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
Organization: Nevada Association of Counties
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:
Address: 7080 Sandale Rd
Address 2:
Address 3:
City: Twentynine Palms
State: CA
Zip: 92277
Country: USA
Privacy Preference: Don't withhold name or address from public record
Attachment: 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
Organization: BrightSource Energy, Inc.
Address: 1999 Harrison Street
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

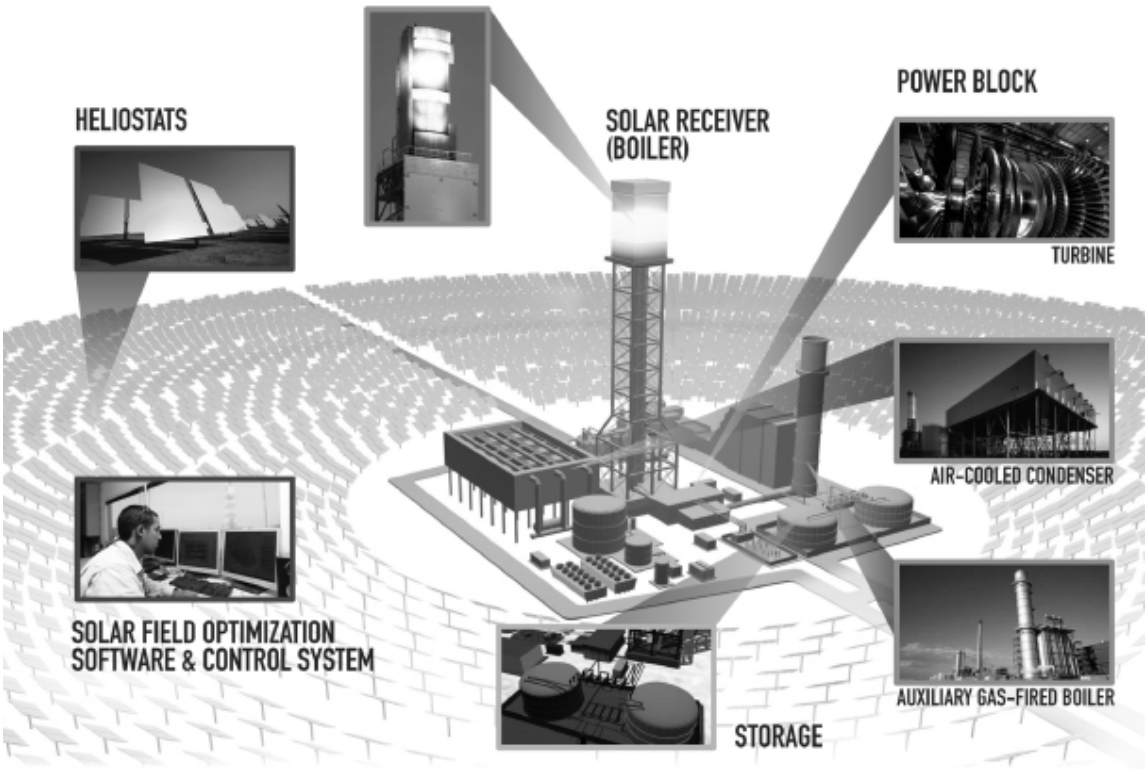
- Shifting electricity production to periods of highest demand, which is particularly important as the highest demand on the system moves later in the day (due in part to increased deployment of distributed solar power, which stops producing power when night falls)

- 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
Middle Initial:
Last Name: Canaly
Organization: San Luis Vallley Ecosystem Council
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City: Alamosa
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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

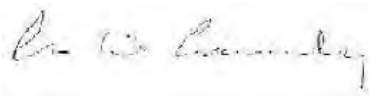
Supplement to the Draft Solar Energy Programmatic EIS
Argonne National Laboratory
9700 S. Cass Avenue – EVS/240
Argonne, IL 60439
http://solareis.anl.gov

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.

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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

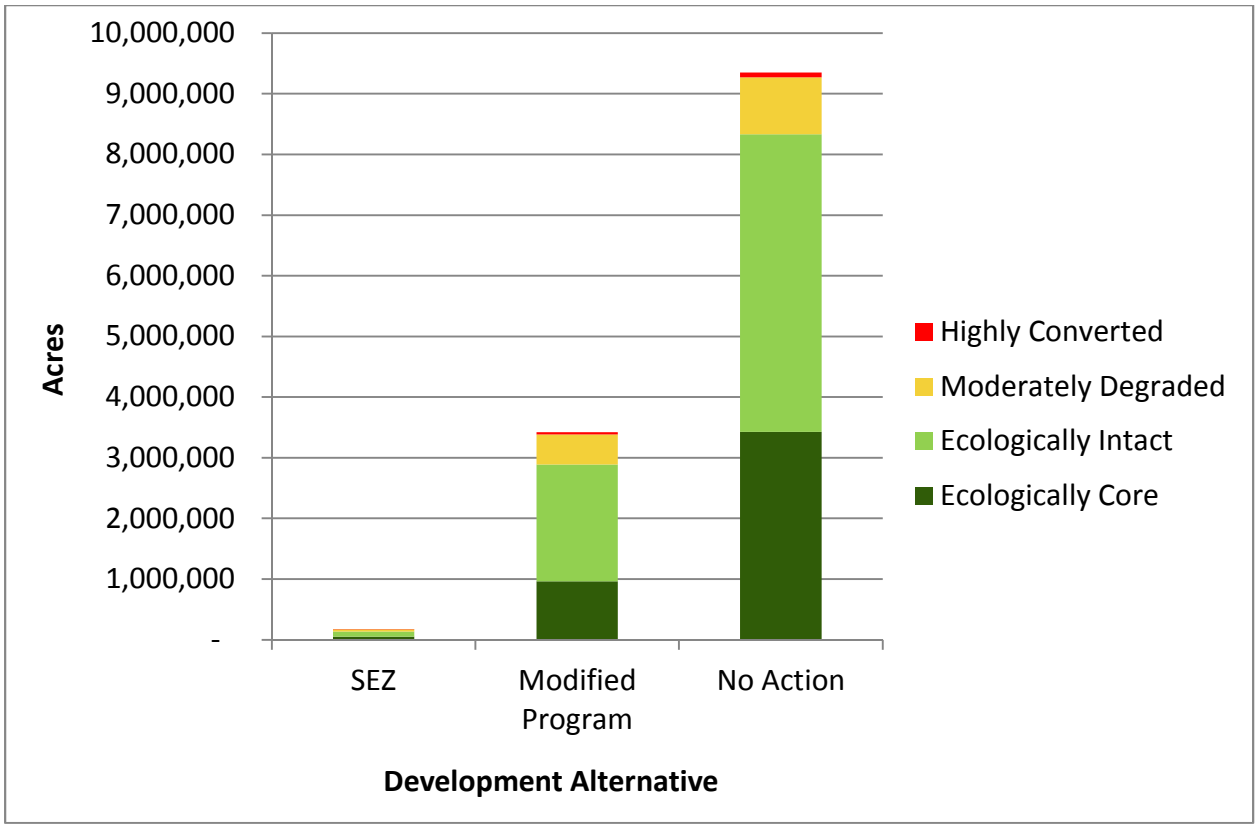
of the larger system, in addition to consequences for species viability throughout these desert regions.

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


10,000,000
9,000,000
8,000,000
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2,000,000
1,000,000
-
Acres
SEZ
Modified Program
No Action
Development Alternative
Highly Converted
Moderately Degraded
Ecologically Intact
Ecologically Core

Figure 2. Land Conservation Values: No Action Alternative

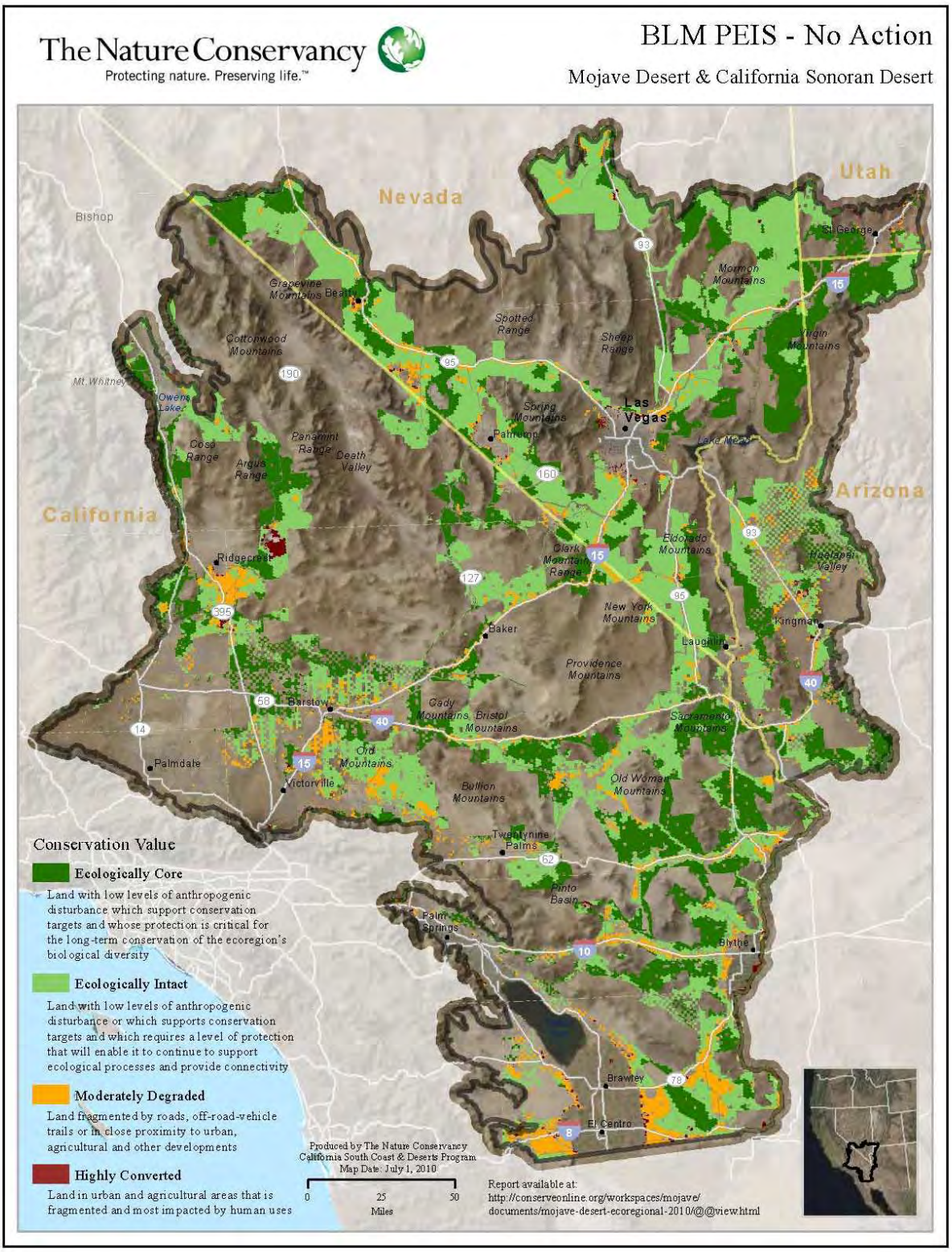


Figure 3. Land Conservation Value: Modified Program Alternative

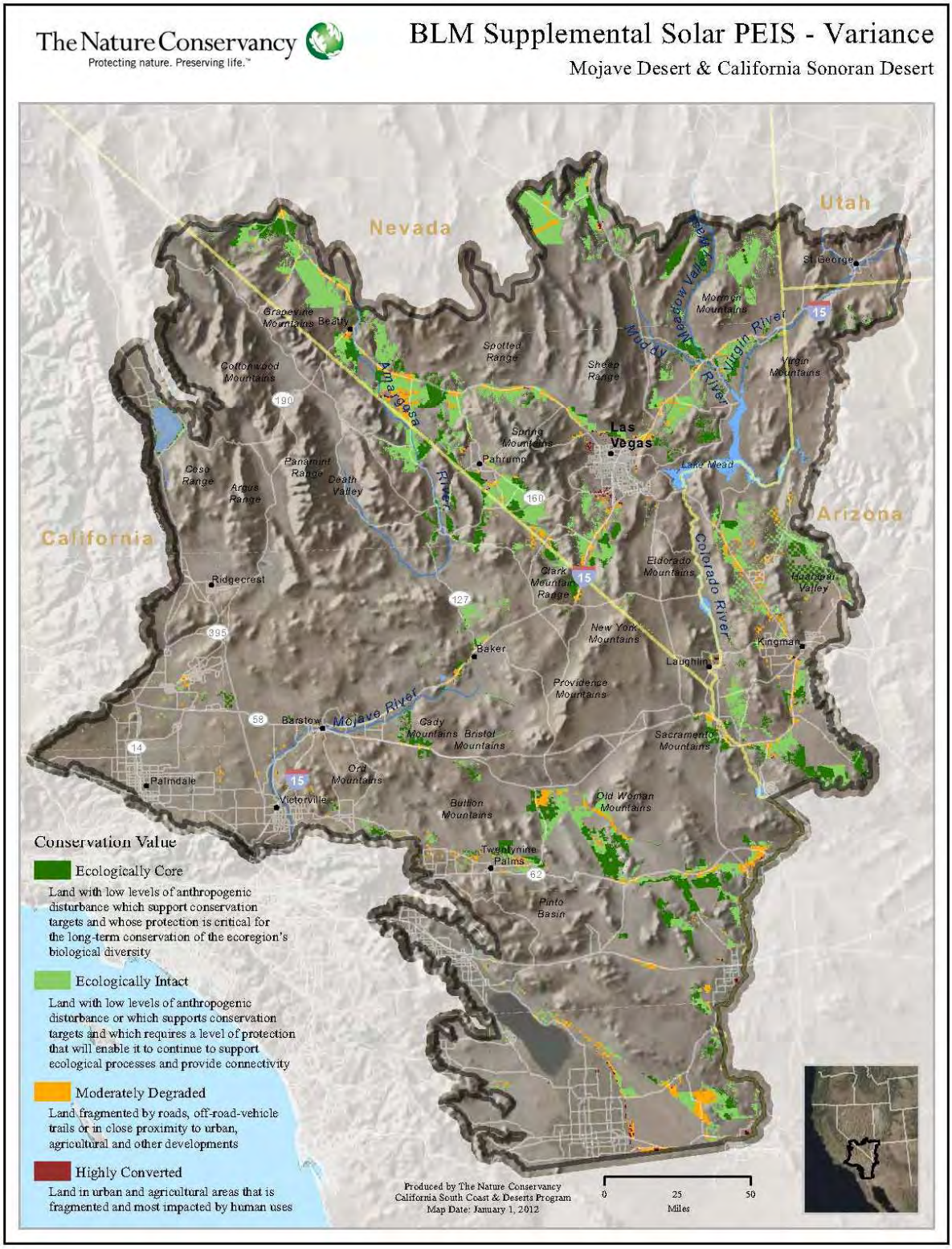
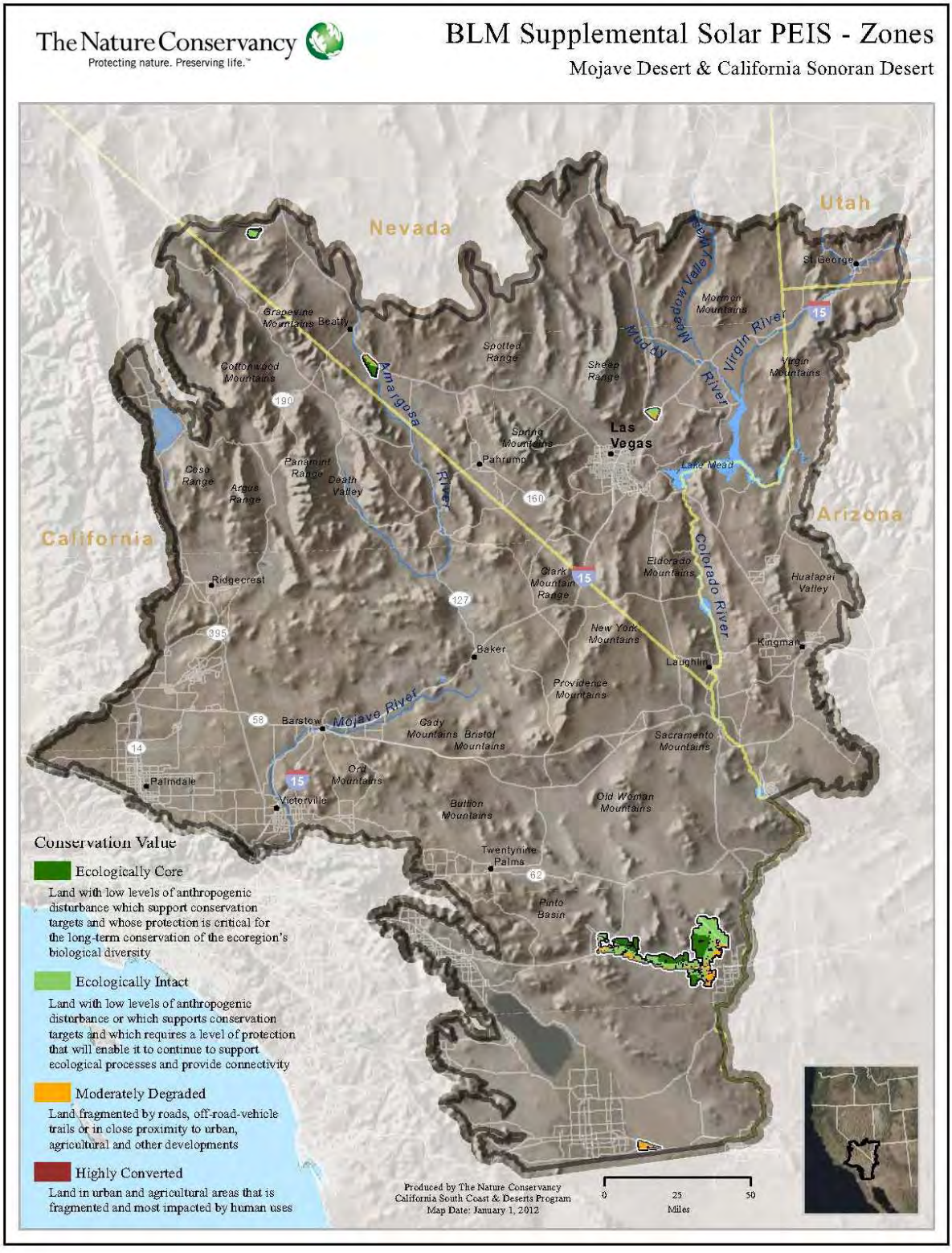


Figure 4. Land Conservation Value: SEZ Alternative



Solar Energy Zone Program Analysis

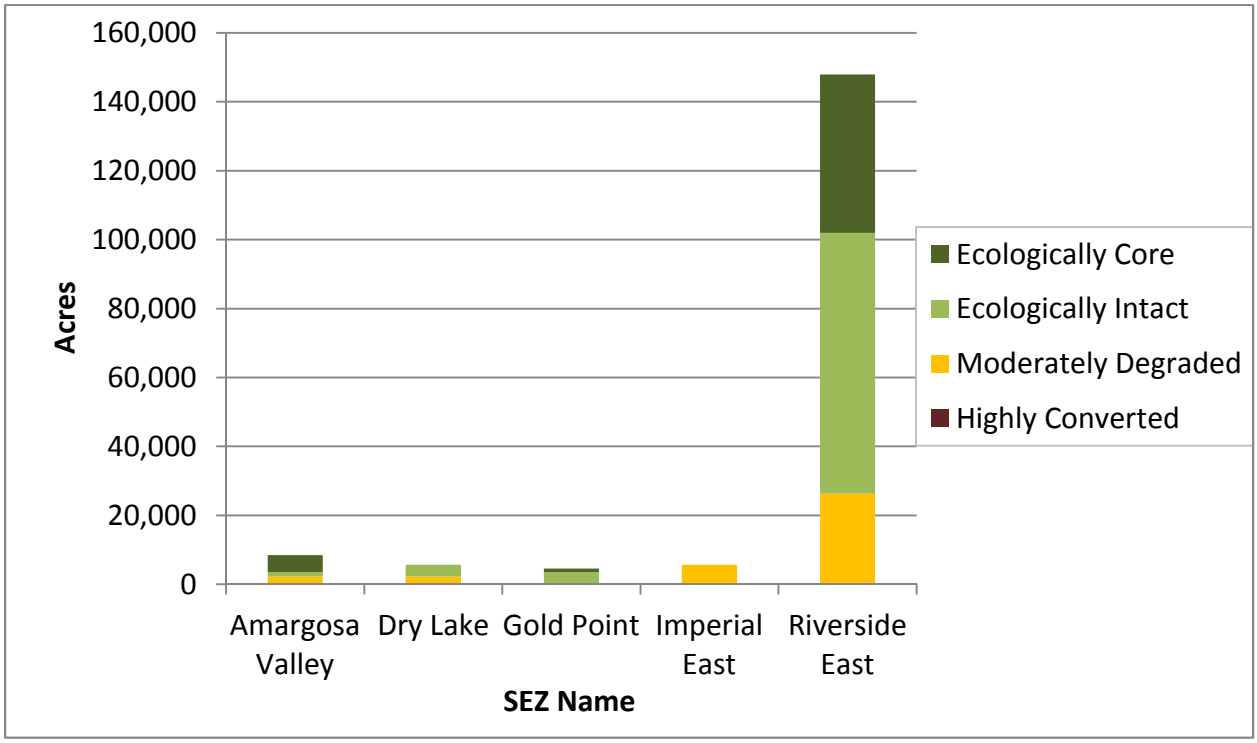
The 17 SEZs proposed in the SDPEIS would encourage grouping of solar energy facilities, reducing fragmentation and the need for new transmission lines relative to the more dispersed siting of facilities likely under the Modified Program Alternative or the No Action Alternative. SEZs also expose far less 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

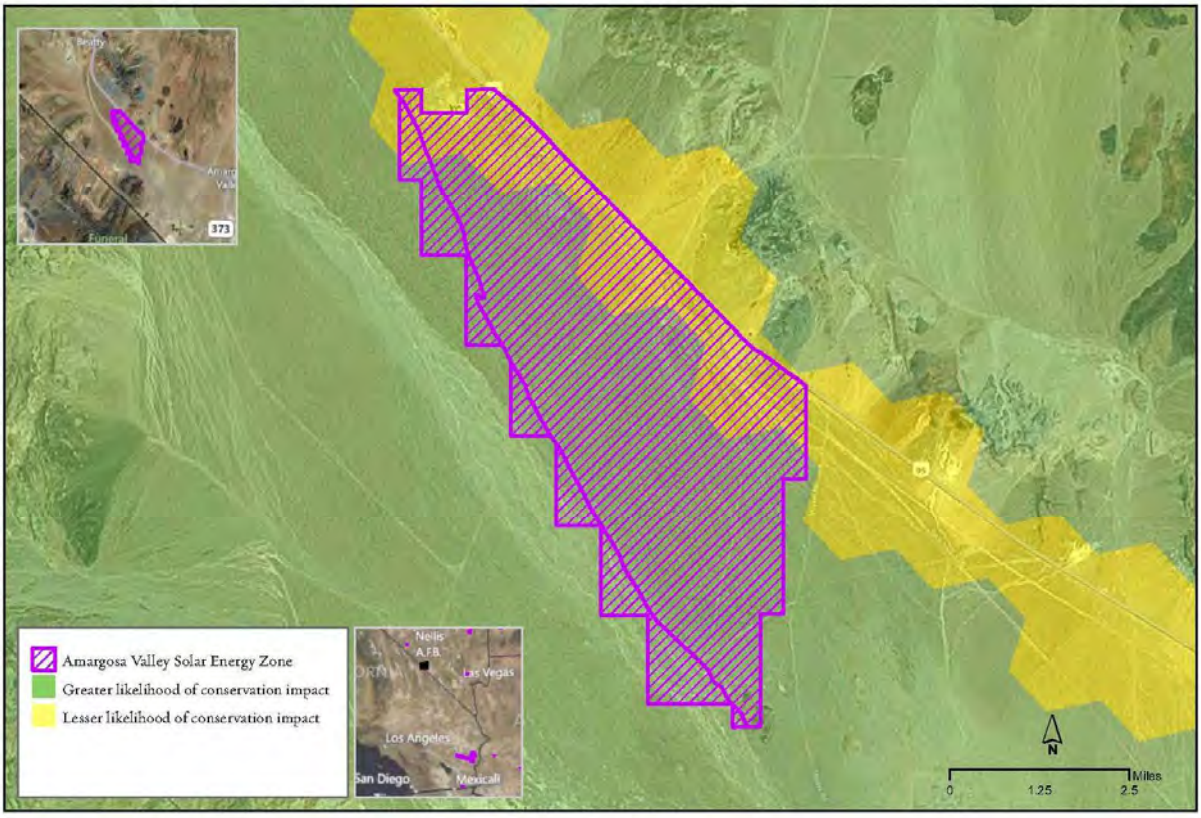
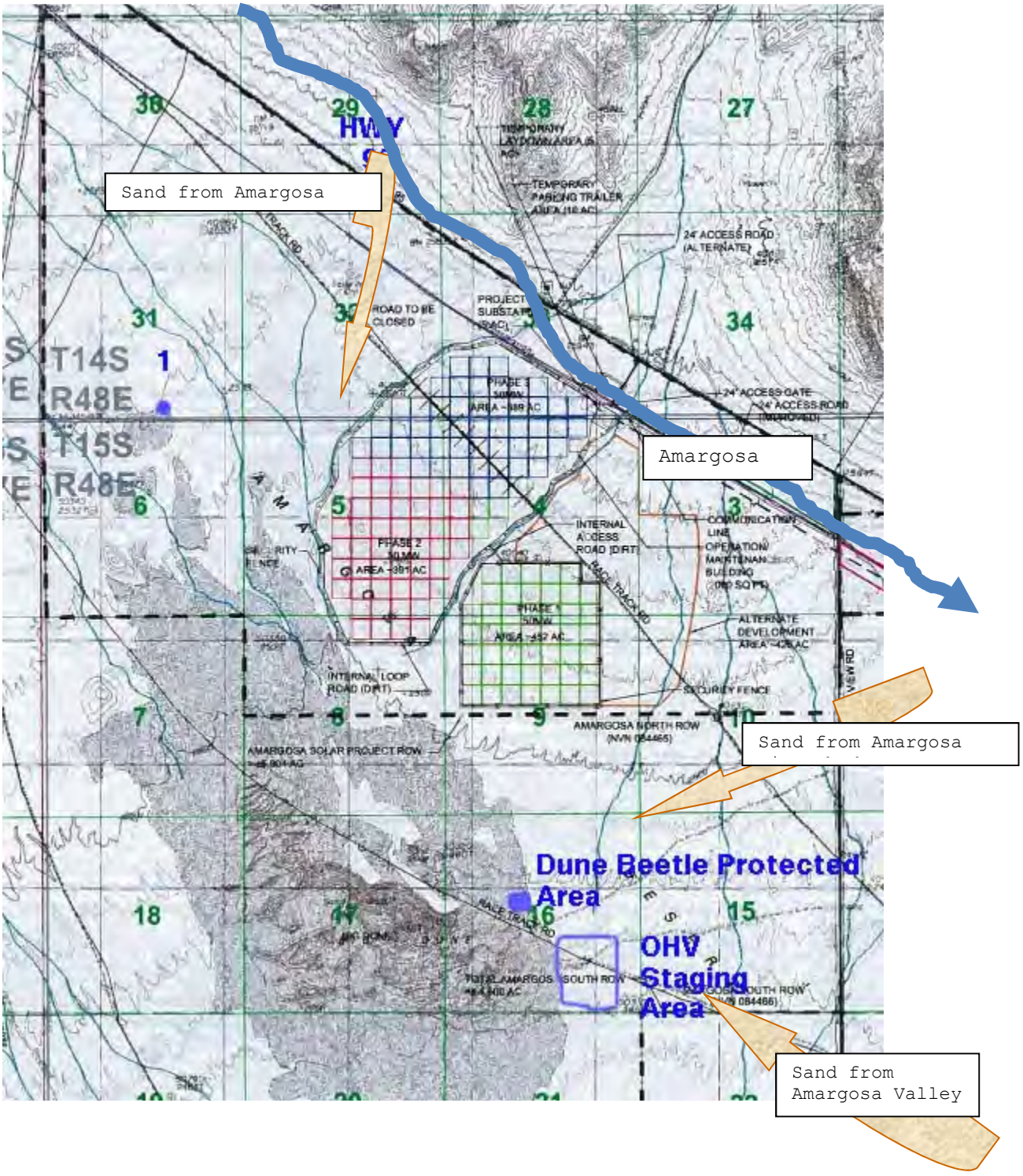


Figure 7. Big Dune in Amargosa Valley with Likely Sand Transport Pathways



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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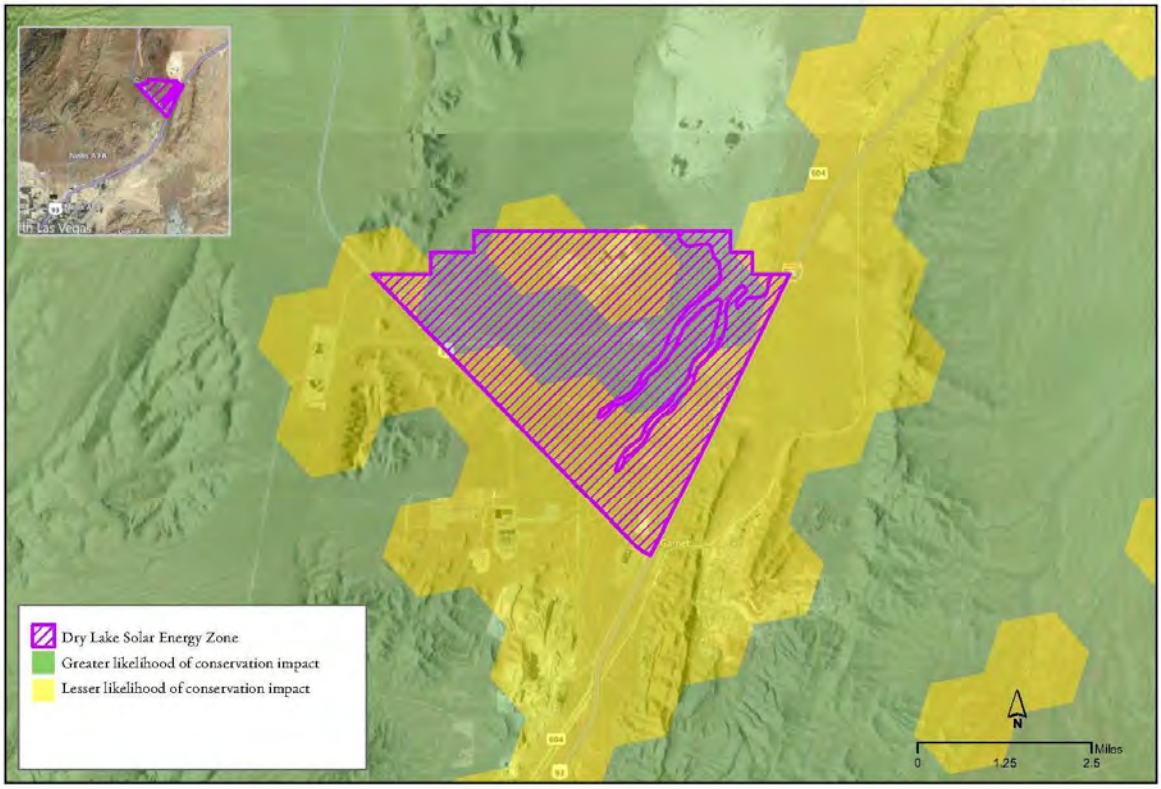
SEZ Initial Assessment

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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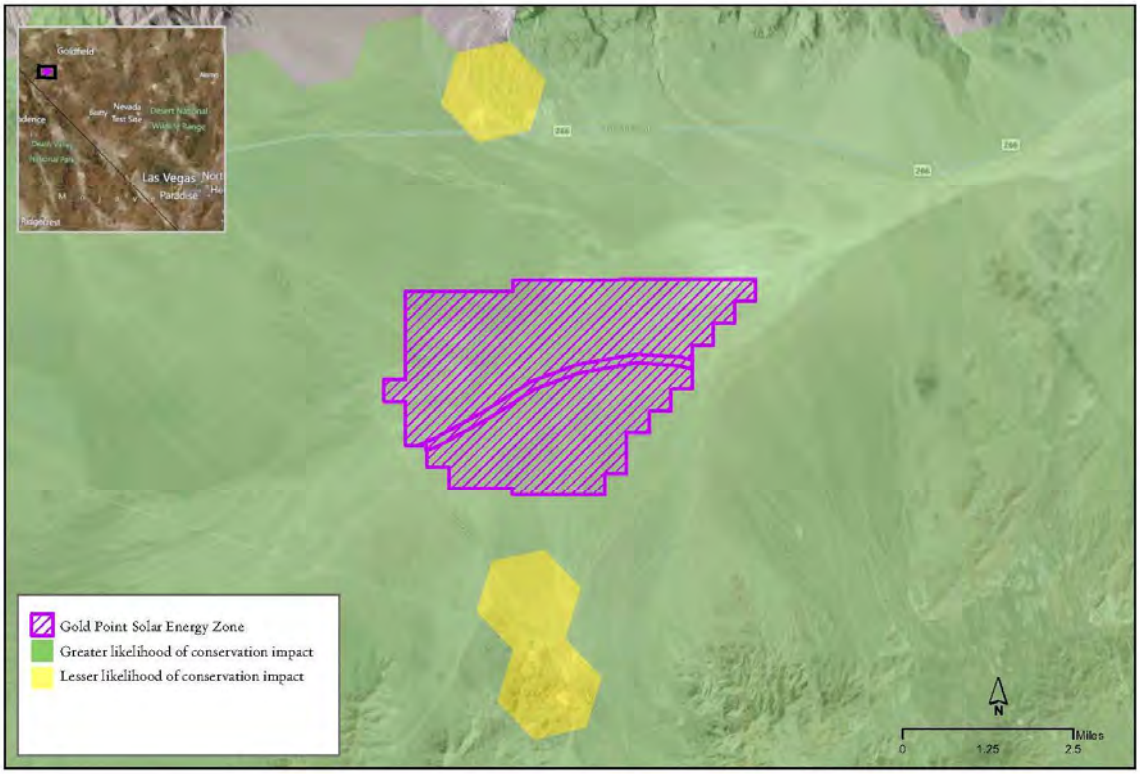
SEZ Initial Assessment

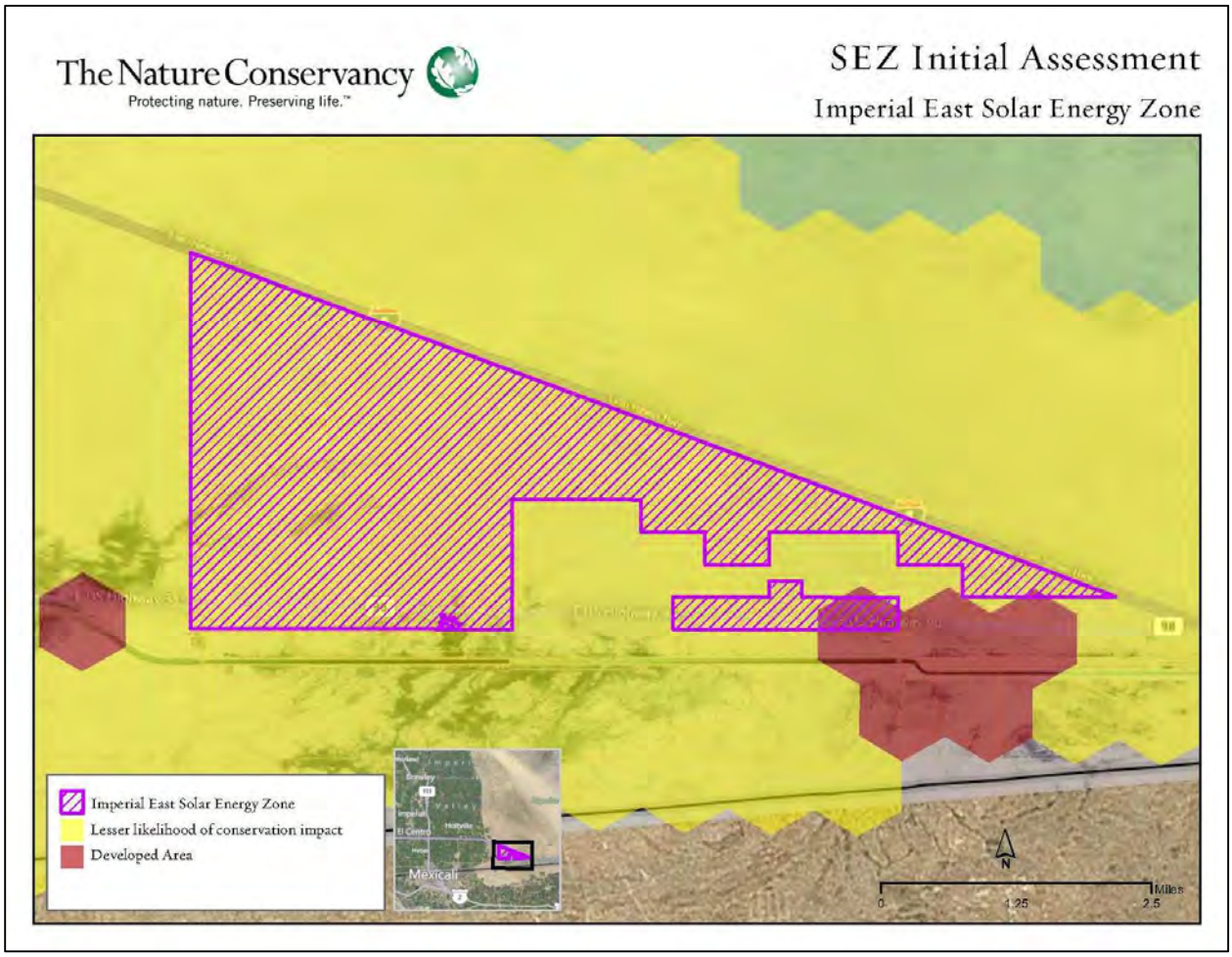
Gold Point Solar Energy Zone



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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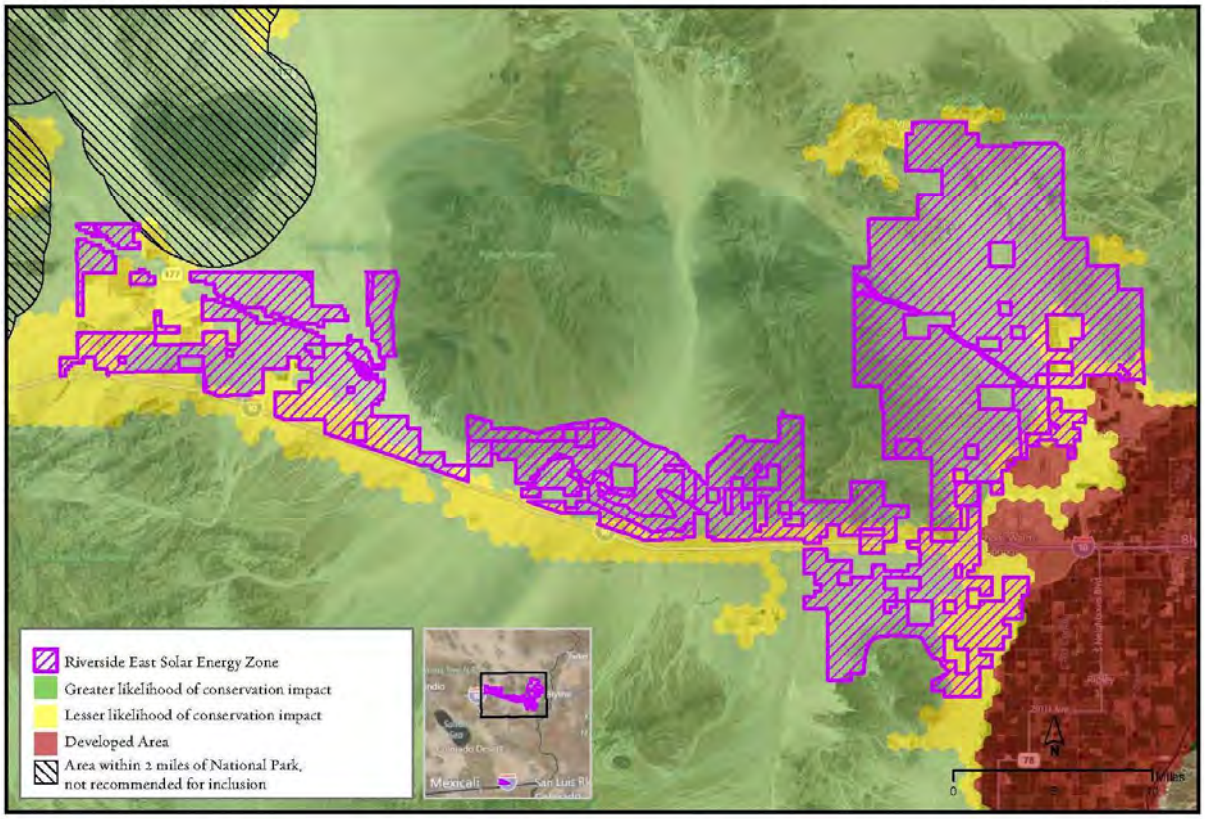
SEZ Initial Assessment

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

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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

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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.

Wildlife Conservation and Solar Energy Development in the Desert Southwest, United States

JEFFREY E. LOVICH AND JOSHUA R. ENNEN

Large areas of public land are currently being permitted or evaluated for utility-scale solar energy development (USSED) in the southwestern United States, including areas with high biodiversity and protected species. However, peer-reviewed studies of the effects of USSED on wildlife are lacking. The potential effects of the construction and the eventual decommissioning of solar energy facilities include the direct mortality of wildlife; environmental impacts of fugitive dust and dust suppressants; destruction and modification of habitat, including the impacts of roads; and off-site impacts related to construction material acquisition, processing, and transportation. The potential effects of the operation and maintenance of the facilities include habitat fragmentation and barriers to gene flow, increased noise, electromagnetic field generation, microclimate alteration, pollution, water consumption, and fire. Facility design effects, the efficacy of site-selection criteria, and the cumulative effects of USSED on regional wildlife populations are unknown. Currently available peer-reviewed data are insufficient to allow a rigorous assessment of the impact of USSED on wildlife.

Keywords: solar energy development, Mojave Desert, Sonoran Desert, wildlife, desert tortoises

The United States is poised to develop new renewable energy facilities at an unprecedented rate, including in potentially large areas of public land in the Southwest. This quantum leap is driven by escalating costs and demand for traditional energy sources from fossil fuels and by concerns over global climate change. Attention is focused largely on renewable forms of energy, especially solar energy. The potential for utility-scale solar energy development (USSED) and operation (USSEDO) is particularly high in the southwestern United States, where solar energy potential is high (USDOI and USDOE 2011a) and is already being harnessed in some areas. However, the potential for USSEDO conflicts with natural resources, especially wildlife, is also high, given the exceptional biodiversity (Mittermeier et al. 2002) and sensitivity (Lovich and Bainbridge 1999) of arid Southwest ecosystems, especially the Mojave (Randall et al. 2010) and Sonoran Deserts, which are already stressed by climate and human changes (CBI 2010). In addition, the desert Southwest is identified as a "hotspot" for threatened and endangered species in the United States (Flather et al. 1998). For these reasons, planning efforts should consider ways to minimize USSEDO impacts on wildlife (CBI 2010). Paradoxically, the implementation of large-scale solar energy development as an "environmentally friendly" alternative to conventional energy sources may actually increase environmental degradation on a local and on a regional scale (Bezdek 1993, Abbasi and Abbasi 2000) with concomitant negative effects on wildlife.

A logical first step in evaluating the effects of USSEDO on wildlife is to assess the existing scientific knowledge. As renewable energy development proceeds rapidly worldwide, information is slowly accumulating on the effects of USSEDO on the environment (for reviews, see Harte and Jassby 1978, Pimentel et al. 1994, Abbasi and Abbasi 2000). Gill (2005) noted that although the number of peer-reviewed publications on renewable energy has increased dramatically since 1991, only 7.6% of all publications on the topic covered environmental impacts, only 4.0% included discussions of ecological implications, and less than 1.0% contained information on environmental risks. A great deal of information on USSEDO exists in environmental compliance documents and other unpublished, non-peer-reviewed "gray" literature sources. Published scientific information on the effects on wildlife of any form of renewable energy development, including that of wind energy, is scant (Kuvlesky et al. 2007). The vast majority of the published research on wildlife and renewable energy development has been focused on the effects of wind energy development on birds (Drewitt and Langston 2006) and bats (Kunz et al. 2007) because of their sensitivity to aerial impacts. In contrast, almost no information is available on the effects of solar energy development on wildlife.

From a conservation standpoint, one of the most important species in the desert Southwest is Agassiz's desert

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tortoise (*Gopherus agassizii*; figure 1). Distributed north and west of the Colorado River, the species was listed as *threatened* under the US Endangered Species Act in 1990. Because of its protected status, Agassiz's desert tortoise acts as an "umbrella species," extending protection to other plants and animals within its range (Tracy and Brussard, 1994). The newly described Morafka's desert tortoise (*Gopherus morafkai*; Murphy et al. 2011) is another species of significant conservation concern in the desert Southwest, found east of the Colorado River. Both tortoises are important as ecological engineers who construct burrows that provide shelter to many other animal species, which allows them to escape the temperature extremes of the desert (Ernst and Lovich 2009). The importance of these tortoises is thus greatly disproportionate to their intrinsic value as species. By virtue of their protected status, Agassiz's desert tortoises have a significant impact on regulatory issues in the listed portion of their range, yet little is known about the effects of USSEDO on the species, even a quarter century after the recognition of that deficiency (Pearson 1986). Large areas of habitat occupied by Agassiz's desert tortoise in particular have potential for development of USSED (figure 2).

Figure 1. Agassiz's desert tortoise (*Gopherus agassizii*). Large areas of desert tortoise habitat are developed or being evaluated for renewable energy development, including for wind and solar energy. Photograph: Jeffrey E. Lovich.

In this article, we review the state of knowledge about the known and potential effects, both direct and indirect, of USSEDO on wildlife (table 1). Our review is based on information published primarily in peer-reviewed scientific journals for both energy and wildlife professionals. Agassiz's desert tortoise is periodically highlighted in our review because of its protected status, wide distribution in areas considered for USSEDO in the desert Southwest, and well-studied status (Ernst and Lovich 2009). In addition, we identify gaps in our understanding of the effects of USSEDO on wildlife and suggest questions that will guide future research toward a goal of mitigating or minimizing the negative effects on wildlife.

Background on proposed energy-development potential in the southwestern United States

The blueprint for evaluating and permitting the development of solar energy on public land in the region, as is required under the US National Environmental Policy Act (USEPA 2010), began in a draft environmental impact statement (EIS) prepared by two federal agencies (USDOI and USDOE 2011a). The purpose of the EIS is to "develop a new Solar Energy Program to further support utility-scale solar energy development on BLM [US Bureau of Land

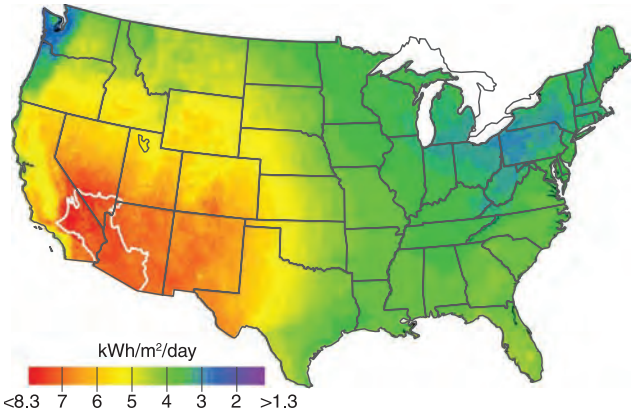

Figure 2. Concentrating solar energy potential (in kilowatt-hours per square meter per day [kWh/m²/day]) of the United States. The map shows the annual average direct normal solar resource data based on a 10-kilometer satellite-modeled data set for the period from 1998 to 2005. Refer to NREL (2011) for additional details and data sources. The white outline defines the approximate composite ranges of Agassiz's (west of the Colorado River) and Morafka's (east of the Colorado River) desert tortoises (Murphy et al. 2011) in the United States, both species of significant conservation concern. This figure was prepared by the National Renewable Energy Laboratory for the US Department of Energy (NREL 2011). The image was authored by an employee of the Alliance for Sustainable Energy, LLC, under Contract no. DE-AC36-08GO28308 with the US Department of Energy. Reprinted with permission from NREL 2011.

Table 1. List of known and potential impacts of utility-scale solar energy development on wildlife in the desert Southwest.

Impacts due to facility construction and decommissioning	Impacts due to facility presence, operation, and maintenance
Destruction and modification of wildlife habitat	Habitat fragmentation and barriers to movement and gene flow
Direct mortality of wildlife	Noise effects
Dust and dust-suppression effects	Electromagnetic field effects
Road effects	Microclimate effects
Off-site impacts	Pollution effects from spills
Destruction and modification of wildlife habitat	Water consumption effects
	Fire effects
	Light pollution effects, including polarized light
	Habitat fragmentation and barriers to movement and gene flow
	Noise effects

Management] -administered lands… and to ensure consistent application of measures to avoid, minimize, or mitigate the adverse impacts of such development" (p. ES-2). As of February 2010, the BLM had 127 active applications for solar facilities on lands that the BLM administers. According to USDOI and USDOE (2011a), all of the BLM-administered land in six states (California, Arizona, Utah, Nevada, New Mexico, and Colorado) was considered initially, for a total of 178 million hectares (ha). Not all of that land is compatible with solar energy development, so three alternative configurations are listed by USDOI and USDOI (2011a) for consideration, ranging from 274,244 to 39,972,558 ha. The larger figure is listed under the *no action alternative* where BLM would continue to use existing policy and guidance to evaluate applications. Of the area being considered under the two action alternatives, approximately 9 million ha meet the criteria established under the BLM's preferred action alternative to support solar development. Twenty-five criteria were used to exclude certain areas of public land from solar development and include environmental, social, and economic factors. The preferred alternative also included the identification of proposed *solar energy zones* (SEZs), defined as "area[s] with few impediments to utility-scale production of solar energy" (USDOI and USDOE 2011a, p. ES-7). By themselves, these SEZs constitute the nonpreferred action alternative of 274,244 ha listed above. Maps of SEZs are available at *http://solareis.anl.gov/documents/dpeis/index.cfm*.

Several sensitive, threatened, or endangered species are being considered within the EIS, but Agassiz's desert tortoise is one of only four species noted whose very presence at a site may be sufficient to exclude USSED in special cases (see table ES.2-2 in USDOI and USDOE 2011a). The potential effects of USSEDO are not trivial for tortoises or other wildlife species. Within the area covered in the draft EIS by USDOI and USDOE (2011a), it is estimated that approximately 161,943 ha of Agassiz's desert tortoise habitat will be directly affected. However, when including direct and indirect impacts on habitat (excluding transmission lines and roads that would add additional impacts; see Lovich and Bainbridge 1999, Kristan and Boarman 2007), it is estimated that approximately 769,230 ha will be affected. Some SEZs are adjacent to critical habitat designated for the recovery of Agassiz's desert tortoise, and this proximity is considered part of the indirect impacts.

On 28 October 2011, while this paper was in press, the BLM and US Department of Energy released a supplement to the EIS (USDOI and USDOE 2011b, 2011c) after receiving more than 80,500 comments. The no action alternative remains the same as in the EIS. The new preferred alternative (slightly reduced to 8,225,179 ha as the modified program alternative) eliminates or adjusts SEZs (now reduced to 115,335 ha in 17 zones as the modified SEZ alternative) to ensure that they are not in high-conflict areas and provides incentives for their use. The new plan also proposes a process to accommodate additional solar energy development outside of SEZs and to revisit ongoing state-based planning efforts to allow consideration of additional SEZs in the future.

The impacts of USSED on wildlife: Effects due to construction and decommissioning

The construction and eventual decommissioning of solar energy facilities will have impacts on wildlife, including rare and endangered species, and on their habitats in the desert (Harte and Jassby 1978). These activities involve significant ground disturbance and direct (e.g., mortality) and indirect (e.g., habitat loss, degradation, modification) impacts on wildlife and their habitat (Kuvlesky et al. 2007). Solar energy facilities require large land areas to harness sunlight and convert it to electrical energy. According to Wilshire and colleagues (2008), photovoltaic panels with a 10% conversion efficiency would need to cover an area of about 32,000 square kilometers, or an area a little smaller than the state of Maryland, to meet the current electricity demands of the United States. Many of the areas being considered for the development of solar energy in the Mojave and Sonoran Deserts are, at present, relatively undisturbed (USDOI and USDOE 2011a).

The extent of surface disturbance of USSED is related to the cooling technology used. Because of the scarcity of water in the desert Southwest region, dry-cooling systems, which consume 90%–95% less water than wet-cooling systems (EPRI 2002), are becoming a more viable option for concentrating solar facilities. Although wet-cooling systems are more economical and efficient, they consume larger amounts of water per kilowatt-hour (Torcellini et al. 2003). Unlike wet-cooling systems, dry-cooling systems use ambient air, instead of water, to cool the exhaust steam from the turbines. However, to achieve a heat-rejection efficiency similar to that in a wet-cooling system, Khalil and colleagues (2006) estimated that a direct dry-cooling system will require a larger footprint and would thus affect more wildlife habitat.

Although we found no information in the scientific literature about the direct effects of USSED on wildlife, the ground-disturbance impacts are expected to be similar to those caused by other human activities in the desert (Lovich and Bainbridge 1999).

Dust and dust suppressants. USSED transforms the landscape substantially through site preparation, including the construction of roads and other infrastructure. In addition, many solar facilities require vegetation removal and grading. These construction activities produce dust emissions, especially in arid environments (Munson et al. 2011), which already have the potential for natural dust emission. Dust can have dramatic effects on ecological processes at all scales (reviewed by Field et al. 2010). At the smallest scale, wind erosion, which powers dust emission, can alter the fertility and water-retention capabilities of the soil. Physiologically, dust can adversely influence the gas exchange, photosynthesis, and water usage of Mojave Desert shrubs (Sharifi et al. 1997). Depending on particle size, wind speed, and other factors, dust emission can physically damage plant species through root exposure, burial, and abrasions to their leaves and stems. The physiological and physical damage to plant species inflicted by dust emissions could ultimately reduce the plants' primary production and could indirectly affect wildlife food plants and habitat quality.

From an operational perspective, dust particles reduce mirror and panel efficiency in converting solar energy into heat or electricity. To combat dust, solar energy facilities apply various dust suppressants to surfaces with exposed soil (e.g., graded areas, areas with vegetation removed, roads). There are eight categories of common dust suppressants used for industrial applications: water, salts and brines, organic nonpetroleum products, synthetic polymers, organic petroleum, electrochemical substances, clay additives, and mulch and fiber mixtures (reviewed in Piechota et al. 2004). In a study conducted in the Mojave Desert in which the hydrological impacts of dust suppressants were compared, Singh and colleagues (2003) reported that changes did occur in the volume, rate, and timing of runoff when dust suppressants were used. In particular, petroleum-based and acrylic-polymer dust suppressants drastically influenced the hydrology of disturbed areas by increasing runoff volume and changing its timing. When it is applied to disturbed desert soils, magnesium chloride ($MgCl_2$), a commonly used salt-based dust depressant, does not increase runoff volume but does, however, increase the total suspended solids loads in runoff (Singh et al. 2003).

Others have highlighted the fact that there is a dearth of scientific research and literature on the effects of dust suppressants on wildlife, including the most commonly used category of dust depressant: brines and salts (Piechota et al. 2004, Goodrich et al. 2008). However, the application of $MgCl_2$ to roads was correlated with a higher frequency of plant damage (Goodrich et al. 2008). Because chloride salts, including $MgCl_2$, are not confined to the point of application but have the ability to be transported in runoff (White and Broadly 2001), the potential exists for a loss of primary production associated with plant damage in the habitats surrounding a solar facility, which could directly affect wildlife habitat.

Mortality of wildlife. We are not aware of any published studies documenting the direct effects of USSED on the survival of wildlife. However, subterranean animals can be affected by USSED, including species that hibernate underground. In the Sonoran Desert portion of California, Cowles (1941) observed that most reptiles in the Coachella Valley hibernated at depths of less than 33 centimeters (cm), with many at considerably shallower depths. Included in his observations were flat-tailed horned lizards (*Phrynosoma mcallii*)—a species of special concern in the region because of solar energy development (USDOI and USDOE 2011a)—and the federally protected Coachella Valley fringe-toed lizard (*Uma inornata*). Even lightweight vehicles like motorcycles are capable of causing greatly increased soil density (soil compaction) at a depth of 30–60 cm as their tires pass over the surface (Webb 1983). These observations suggest that vehicular activities in the desert have the potential to kill or entrap large numbers of subterranean animals (Stebbins 1995) through compressive forces or burrow collapse. Similar or greater impacts would be expected from the heavy equipment associated with the construction activities at an energy facility.

Destruction and modification of wildlife habitat. Despite the absence of published, peer-reviewed information on the effects of USSED on wildlife and their habitats, a considerable body of literature exists on the effects of other ground-disturbing activities on both ecological patterns and processes that are broadly comparable. Ground-disturbing activities affect a variety of processes in the desert, including soil density, water infiltration rate, vulnerability to erosion, secondary plant succession, invasion by exotic plant species, and stability of cryptobiotic soil crusts (for reviews, see Lovich and Bainbridge 1999, Webb et al. 2009). All of these processes have the ability—individually and together—to alter habitat quality, often to the detriment of wildlife. Any disturbance and alteration to the desert landscape, including the construction and decommissioning of utility-scale solar energy facilities, has the potential to increase soil erosion. Erosion can physically and physiologically affect plant species and can thus adversely influence primary production (Sharifi et al. 1997, Field et al. 2010) and food availability for wildlife.

Solar energy facilities require substantial site preparation (including the removal of vegetation) that alters topography and, thus, drainage patterns to divert the surface flow associated with rainfall away from facility infrastructure (Abbasi and Abbasi 2000). Channeling runoff away from plant communities can have dramatic negative effects on water availability and habitat quality in the desert, as was shown by Schlesinger and colleagues (1989). Areas deprived

of runoff from sheet flow support less biomass of perennial and annual plants relative to adjacent areas with uninterrupted water-flow patterns.

The impacts of roads. Roads are required in order to provide access to solar energy infrastructure. Both paved and unpaved roads have well-documented negative effects on wildlife (Forman and Alexander 1998), and similar effects are expected in utility-scale solar energy facilities. Although road mortality is most easily detected on the actual roadway, the effects of roads extend far beyond their physical surface. In a study of the effects of roads on Agassiz's desert tortoise populations in southern Nevada, von Seckendorff Hoff and Marlow (2002) examined transects along roads with traffic volumes varying from 25 to 5000 vehicles per day. Tortoises and tortoise sign (e.g., burrows, shells, scat) decreased with their proximity to a road. On roads with high traffic volumes, tortoises and tortoise sign were reduced as far as 4000 meters from the roadside. Roads with lower traffic volumes had fewer far-reaching effects.

Another effect of roads in the desert is the edge enhancement of plants and arthropod herbivores (Lightfoot and Whitford 1991). Perennial plants along the roadside are often larger than those farther away, and annual plant germination is often greatest along the shoulders of roads. It is possible that increased runoff due to impervious pavement or compacted soil contributes to this heterogeneity of vegetation in relationship to a road. Agassiz's desert tortoises may select locations for burrow construction that are close to roads, perhaps because of this increased productivity of food plants (Lovich and Daniels 2000). Although this situation suggests potentially beneficial impacts for herbivorous species of wildlife, such as tortoises, it increases their chance of being killed by vehicle strikes, as was shown by von Seckendorff Hoff and Marlow (2002).

Off-site impacts. Direct impacts on wildlife and habitat can occur well outside the actual footprint of the energy facility. Extraction of large amounts of raw materials for the construction of solar energy facilities (e.g., aggregate, cement, steel, glass); transportation and processing of those materials; the need for large amounts of water for cooling some installations; and the potential for the production of toxic wastes, including coolants, antifreeze, rust inhibitors, and heavy metals, can affect wildlife adjacent to or far from the location of the facility (Abbasi and Abbasi 2000). Abbasi and Abbasi (2000) summarized data suggesting that the material requirements for large-scale solar facilities exceed those for conventional fossil-fuel plants on a cost-per-unit-of-energy basis. In addition, water used for steam production at one solar energy facility in the Mojave Desert of California contained selenium, and the wastewater was pumped into evaporation ponds that attracted birds that fed on invertebrates. Although selenium toxicity was not considered a threat on the basis of the results of one study, the possibility exists for harmful bioaccumulation of this toxic micronutrient (Herbst 2006). In recognition of the hazard, Pimentel and colleagues (1994) suggested that fencing should be used to keep wildlife away from these toxic ponds.

The impacts of USSED on wildlife: Effects due to operation and maintenance

This category includes the effects related to the presence and operation of the solar facility, not the physical construction and decommissioning of the same. Some of the effects (e.g., mortality of wildlife and impacts caused by roads) are similar to those discussed previously for construction and decommissioning and are not discussed further.

Habitat fragmentation. Until relatively recently, the desert Southwest was characterized by large blocks of continuous and interconnected habitat. Roads and urban development continue to contribute to habitat fragmentation in this landscape. Large-scale energy development has the potential to add to and exacerbate the situation, presenting potential barriers to movement and genetic exchange in wildlife populations, including those of bighorn sheep (*Ovis canadensis*), deer (*Odocoileus* spp.), tortoises, and other species of concern and social significance. Research conducted on the effects of oil and gas exploration and development (OGED) on wildlife in the Intermountain West provides a possible analog to USSEDO, since comparable data are not available for the desert Southwest. The potential effects on mule deer (*Odocoileus hemionus*) and other wildlife species include impediments to free movement, the creation of migration bottlenecks, and a reduction in effective winter range size. Mule deer responded immediately to OGED by moving away from disturbances, with no sign of acclimation during the three years of study by Sawyer and colleagues (2009). Some deer avoidance resulted in their use of less-preferred and presumably less-suitable habitats.

Despite a lack of data on the direct contributions of USSEDO to habitat fragmentation, USSEDO has the potential to be an impediment to gene flow for some species. Although the extent of this impact is, as yet, largely unquantified in the desert, compelling evidence for the effects of human-caused habitat fragmentation on diverse wildlife species has already been demonstrated in the adjacent coastal region of southern California (Delaney et al. 2010).

Noise effects. Industrial noise can have impacts on wildlife, including changes to their habitat use and activity patterns, increases in stress, weakened immune systems, reduced reproductive success, altered foraging behavior, increased predation risk, degraded communication with conspecifics, and damaged hearing (Barber et al. 2009, Pater et al. 2009). Changes in sound level of only a few decibels can elicit substantial animal responses. Most noise associated with USSEDO is likely to be generated during the construction phase (Suter 2002), but noise can also be produced during operation and maintenance activities. Brattstrom and Bondello (1983) documented the effects of noise on Mojave

Desert wildlife on the basis of experiments involving off-highway vehicles. Noise from some of these vehicles can reach 110 decibels—near the threshold of human pain and certainly within the range expected for various construction, operation, and maintenance activities (Suter 2002) associated with USSEDO. This level of noise caused hearing loss in animals, such as kangaroo rats (*Dipodomys* spp.), desert iguanas (*Dipsosaurus dorsalis*), and fringe-toed lizards (*Uma* spp.). In addition, it interfered with the ability of kangaroo rats to detect predators, such as rattlesnakes (*Crotalus* spp.), and caused an unnatural emergence of aestivating spadefoot toads (*Scaphiopus* spp.), which would most likely result in their deaths. Because of impacts on wildlife, Brattstrom and Bondello (1983) recommended that "all undisturbed desert habitats, critical habitats, and all ranges of threatened, endangered, or otherwise protected desert species" (p. 204) should be protected from loud noise.

Although many consider solar energy production a "quiet" endeavor, noise is associated with their operation. For example, facilities at which wet-cooling systems are used will have noises generated by fans and pumps. As for facilities with dry-cooling systems, only noise from fans will be produced during operation (EPRI 2002). Because of the larger size requirements of dry-cooling systems, there will be more noise production associated with an increase in the number of fans.

Electromagnetic field generation. When electricity is passed through cables, it generates electric and magnetic fields. USSEDO requires a large distribution system of buried and overhead cables to transmit energy from the point of production to the end user. Electromagnetic fields (EMFs) produced as energy flows through system cables are a concern from the standpoint of both human and wildlife health, yet little information is available to assess the potential impact of the EMFs associated with USSEDO on wildlife. Concerns about EMFs have persisted for a long time, in part because of controversy over whether they're the actual cause of problems and disagreement about the underlying mechanisms for possible effects. For example, there is presently a lack of widely accepted agreement about the biological mechanisms that can explain the consistent associations between extremely low-frequency EMF exposure from overhead power lines and childhood leukemia, although there is no shortage of theories (Gee 2009).

Some conclude that the effects of EMFs on wildlife will be minor because of reviews of the often conflicting and inconclusive literature on the topic (Petersen and Malm 2006). Others suggest that EMFs are a possible source of harm for diverse species of wildlife and contribute to the decline of some mammal populations. Balmori (2010) listed possible impacts of chronic exposure to athermal electromagnetic radiation, which included damage to the nervous system, disruption of circadian rhythm, changes in heart function, impairment of immunity and fertility, and genetic and developmental problems. He concluded that enough evidence exists to confirm harm to wildlife but suggested that further study is urgently needed. Other authors suggest that the generally inconsistent epidemiological evidence in support of the effects of EMFs should not be cause for inaction. Instead, they argue that the precautionary principle should be applied in order to prevent a recurrence of the "late lessons from early warnings" scenario that has been repeated throughout history (Gee 2009).

Magnetic information is used for orientation by diverse species, from insects (Sharma and Kumar 2010) to reptiles (Perry A et al. 1985). Despite recognition of this phenomenon, the direct effects of USSEDO-produced EMFs on wildlife orientation remains unknown.

Microclimate effects. The alteration of a landscape through the removal of vegetation and the construction of structures by humans not only has the potential of increasing animal mortality but also changes the characteristics of the environment in a way that affects wildlife. The potential for microclimate effects unique to solar facilities was discussed by Pimentel and colleagues (1994) and by Harte and Jassby (1978). It has been estimated that a concentrating solar facility can increase the albedo of a desert environment by 30%–56%, which could influence local temperature and precipitation patterns through changes in wind speed and evapotranspiration. Depending on their design, large concentrating solar facilities may also have the ability to produce significant amounts of unused heat that could be carried downwind into adjacent wildlife habitat with the potential to create localized drought conditions. The heat produced by central-tower solar facilities can burn or incinerate birds and flying insects as they pass through the concentrated beams of reflected light (McCrary et al. 1986, Pimentel et al. 1994, Tsoutsos et al. 2005, Wilshire et al. 2008).

A dry-cooled solar facility—in particular, one with a concentrating-trough system—could reject heated air from the cooling process with temperatures 25–35 degrees Fahrenheit higher than the ambient temperature (EPRI 2002). This could affect the microclimate on site or those in adjacent habitats. To our knowledge, no research is available to assess the effects of USSEDO on temperature or that of any other climatic variable on wildlife. However, organisms whose sex is determined by incubation temperatures, such as both species of desert tortoises, may be especially sensitive to temperature changes, because small temperature changes have the potential to alter hatchling sex ratios (Hulin et al. 2009).

Pollutants from spills. USSEDO, especially at wet-cooled solar facilities, has a potential risk for hazardous chemical spills on site, associated with the toxicants used in cooling systems, antifreeze agents, rust inhibitors, herbicides, and heavy metals (Abbasi and Abbasi 2000, Tsoutsos et al. 2005). Wet-cooling solar systems must use treatment chemicals (e.g., chlorine, bromine, selenium) and acids and bases (e.g., sulfuric acid, sodium hydroxide, hydrated lime) for the prevention of fouling and scaling and for pH control of the water used in their recirculating systems (EPRI 2002).

Solar facilities at which a recirculating system is used also have treatment and disposal issues associated with water discharge, known as *blowdown*, which is water with a high concentration of dissolved and suspended materials created by the numerous evaporation cycles in the closed system (EPRI 2002). These discharges may contain chemicals used to prevent fouling and scaling. The potentially tainted water is usually stored in evaporative ponds, which further concentrates the toxicants (Herbst 2006). Because water is an attraction for desert wildlife, numerous species could be adversely affected. The adverse effects of the aforementioned substances and similar ones on wildlife are well documented in the literature, and a full review is outside the scope of this article. However, with the decreased likelihood of wet-cooling systems for solar facilities in the desert, the risk of hazardous spills and discharges on site will be less in the future, because dry-cooling systems eliminate most of the associated water-treatment processes (EPRI 2002). However, there are still risks of spills associated with a dry-cooling system. More research is needed on the adverse effects of chemical spills and tainted-water discharges specifically related to USSEDO on wildlife.

Water consumption (wet-cooled solar). The southwestern United States is a water-poor region, and water use is highly regulated throughout the area. Because of this water limitation, the type of cooling systems installed at solar facilities is limited as well. For example, a once-through cooling system—a form of wet cooling—is generally not feasible in arid environments, because there are few permanent bodies of water (i.e., rivers, oceans, and lakes) from which to draw cool water and then into which to release hot water. Likewise, other wet-cooling options, such as recirculating systems and hybrid systems, are becoming less popular because of water shortage issues in the arid region. Therefore, the popularity of the less-efficient and less-economical dry-cooling systems is increasing on public lands. Water will also be needed at solar facilities to periodically wash dust from the mirrors or panels. Although there are numerous reports in which the costs and benefits were compared both environmentally and economically (EPRI 2002, Khalil et al. 2006) between wet- and dry-cooled solar facilities, to our knowledge no one has actually quantified the effects of water use and consumption on desert wildlife in relation to the operation of these facilities.

Fire risks. Any system that produces electricity and heat has a potential risk of fire, and renewable energy facilities are no exception. Concentrating solar energy facilities harness the sun's energy to heat oils, gases, or liquid sodium, depending on the system design (e.g., heliostat power, trough, dish). With temperatures reaching more than 300 degrees Celsius in most concentrated solar systems, spills and leaks from the coolant system increase the risk of fires (Tsoutsos et al. 2005). Even though all vegetation is usually removed from the site during construction, which reduces the risk of a fire propagating on and off site, the increase of human activity in a desert region increases the potential for fire, especially along major highways and in the densely populated western Mojave Desert (Brooks and Matchett 2006).

The Southwest deserts are not fire-adapted ecosystems: fire was historically uncommon in these regions (Brooks and Esque 2002). However, with the establishment of numerous flammable invasive annual plants in the desert Southwest (Brown and Minnich 1986), coupled with an increase in anthropogenic ignitions, fire has become more common in the deserts, which adversely affects wildlife (Esque et al. 2003). For Agassiz's desert tortoise, fire can translate into direct mortality at renewable energy facilities (Lovich and Daniels 2000) and can cause reductions in food and habitat quality. To our knowledge, however, there is no scientific literature related to the effects of USSEDO-caused fire on wildlife.

Light pollution. Two types of light pollution could be produced by solar energy facilities: ecological light pollution (ELP; Longcore and Rich 2004) and polarized light pollution (PLP; Horváth et al. 2009). The latter, PLP, could be produced at high levels at facilities using photovoltaic solar panels, because dark surfaces polarize light. ELP can also be produced at solar facilities in the form of reflected light. The reflected light from USSEDO has been suggested as a possible hazard to eyesight (Abbasi and Abbasi 2000). ELP could adversely affect the physiology, behavior, and population ecology of wildlife, which could include the alteration of predation, competition, and reproduction (for reviews, see Longcore and Rich 2004, Perry G et al. 2008). For example, the foraging behavior of some species can be adversely affected by light pollution (for a review, see Longcore and Rich 2004). The literature is limited regarding the impact of artificial lighting on amphibians and reptiles (Perry G et al. 2008), and, to our knowledge, there are no published studies in which the impacts on wildlife of light pollution produced by USSEDO have been assessed. However, light pollution is considered by G. Perry and colleagues (2008) to be a serious threat to reptiles, amphibians, and entire ecological communities that requires consideration during project planning. G. Perry and colleagues (2008) further recommended the removal of unnecessary lighting so that the lighting conditions of nearby habitats would be as close as possible to their natural state.

Numerous anthropogenic products—usually those that are dark in color (e.g., oil spills, glass panes, automobiles, plastics, paints, asphalt roads)—can unnaturally polarize light, which can have adverse effects on wildlife (for a review, see Horváth et al. 2009). For example, numerous animal species use polarized light for orientation and navigation purposes (Horváth and Varjú 2004). Therefore, the potential exists for PLP to disrupt the orientation and migration abilities of desert wildlife, including those of sensitive species. In the review by Horváth and colleagues (2009), which was focused mostly on insects but included a few avian references, they highlighted the fact that anthropogenic products that produce PLP can appear to be water bodies to wildlife and can become ecological traps for insects and, to a lesser degree, avian species. Therefore,

utility-scale solar energy facilities at which photovoltaic technology is used in the desert Southwest could create a direct effect on insects (i.e., ecological trap), which could have profound but unquantified effects on the ecological community surrounding the solar facility. In addition, there may be indirect effects on wildlife through the limitation of plant food resources, especially if pollinators are negatively affected. As was stated by Horváth and colleagues (2009), the population- and community-level effects of PLP can only be speculated on because of the paucity of data.

Unanswered questions and research needs

In our review of the peer-reviewed scientific literature, we found only one peer-reviewed publication on the specific effects of utility-scale solar energy facility operation on wildlife (McCrary et al. 1986) and none on utility-scale solar energy facility construction or decommissioning. Although it is possible that we missed other peer-reviewed publications, our preliminary assessment demonstrates that very little critically reviewed information is available on this topic. The dearth of published, peer-reviewed scientific information provides an opportunity to identify the fundamental research questions for which resource managers need answers. Without those answers, resource managers will be unable to effectively minimize the negative effects of USSEDO on wildlife, especially before permitting widespread development of this technology on relatively undisturbed public land.

Before-and-after studies. Carefully controlled studies are required in order to tease out the direct and indirect effects of USSEDO on wildlife. Pre- and postconstruction evaluations are necessary to identify the effects of renewable energy facilities and to compare results across studies (Kunz et al. 2007). In their review of wind energy development and wildlife, with an emphasis on birds, Kuvlesky and colleagues (2007) noted that experimental designs and data-collection standards were typically inconsistent among studies. This fact alone contributes measurably to the reported variability among studies or renders comparisons difficult, if not impossible. Additional studies should emphasize the need for carefully controlled before-after-control-impact (BACI) studies (Kuvlesky et al. 2007) with replication (if possible) and a detailed description of site conditions. The potential payoff for supporting BACI studies now could be significant: They could provide answers for how to mitigate the negative impacts on wildlife in a cost-effective and timely manner.

What are the cumulative effects of large numbers of dispersed or concentrated energy facilities? Large portions of the desert Southwest have the potential for solar energy development. Although certain areas are targeted for large facilities because of resource availability and engineering requirements (e.g., their proximity to existing transmission corridors), other areas may receive smaller, more widely scattered facilities. A major unanswered question is what the cumulative impacts of these facilities on wildlife are. Would it be better for wildlife if development is concentrated or if it is scattered in smaller, dispersed facilities? Modeling based on existing data would be highly suspect because of the deficiency of detailed site-level published information identified in our analysis. Except for those on habitat destruction and alteration related to other human endeavors, there are no published articles on the population genetic consequences of habitat fragmentation related to USSED, which makes this a high priority for future research.

What density or design of development maximizes energy benefits while minimizing negative effects on wildlife? We are not aware of any published peer-reviewed studies in which the impacts on wildlife of different USSED densities or designs have been assessed. For example, would it benefit wildlife to leave strips of undisturbed habitat between rows of concentrating solar arrays? Research projects in which various densities, arrays, or designs of energy-development infrastructure are considered would be extremely valuable. BACI studies would be very useful for addressing this deficiency.

What are the best sites for energy farms with respect to the needs of wildlife? The large areas of public land available for renewable energy development in the desert Southwest encompass a wide variety of habitats. Although this provides a large number of choices for USSED, not all areas have the same energy potential because of resource availability and the limitations associated with engineering requirements, as was noted above. Detailed information on wildlife distribution and habitat requirements are crucially needed for proper site location and for the design of renewable energy developments (Tsoutsos et al. 2005). Public-resource-management agencies have access to rich geospatial data sets based on many years of inventories and resource-management planning. These data could be used to identify areas of high value for both energy development and wildlife. Areas with overlapping high values could be carefully studied through risk assessment when it appears that conflicts are likely. Previously degraded wildlife habitats, such as old mine sites, overgrazed pastures, and abandoned crop fields, may be good places to concentrate USSED to minimize its impacts on wildlife (CBI 2010).

Can the impacts of solar energy development on wildlife be mitigated? The construction of solar energy facilities can cause direct mortality of wildlife. In addition, building these facilities results in the destruction and fragmentation of wildlife habitat and may increase the possibility of fire, as was discussed above. Beyond these effects, essentially nothing is known about the operational effects of solar energy facilities on wildlife. Current mitigation strategies for desert tortoises and other protected species include few alternatives other than translocation of the animals from the footprint of the development into other areas. Although this strategy may be appealing at first glance, animal translocation has a checkered history of success, especially for reptiles and amphibians (Germano and Bishop 2008, CBI 2010). Translocation

has yet to be demonstrated as a viable long-term solution that would mitigate the destruction of Agassiz's desert tortoise habitat (Ernst and Lovich 2009, CBI 2010).

Conclusions

All energy production has associated social and environmental costs (Budnitz and Holdren 1976, Bezdek 1993). In their review of the adverse environmental effects of renewable energy development, Abbasi and Abbasi (2000) stated that "renewable energy sources are not the panacea they are popularly perceived to be; indeed, in some cases, their adverse environmental impacts can be as strongly negative as the impacts of conventional energy sources" (p. 121). Therefore, responsible, efficient energy production requires both the minimization of environmental costs and the maximization of benefits to society—factors that are not mutually exclusive. Stevens and colleagues (1991) and Martín-López and colleagues (2008) suggested that the analyses of costs and benefits should include both wildlife use and existence values. On the basis of our review of the existing peer-reviewed scientific literature, it appears that insufficient evidence is available to determine whether solar energy development, as it is envisioned for the desert Southwest, is compatible with wildlife conservation. This is especially true for threatened species such as Agassiz's desert tortoise. The many other unanswered questions that remain after reviewing the available evidence provide opportunities for future research, as was outlined above.

The shift toward renewable energy is widely perceived by the public as a "green movement" intended to reduce greenhouse-gas emissions and acid rain and to curb global climate change (Abbasi and Abbasi 2000). However, as was noted by Harte and Jassby (1978), just because an energy technology is simple, thermodynamically optimal, renewable, or inexpensive does not mean that it will be benign from an ecological perspective. The issue of wildlife impacts is much more complex than is widely appreciated, especially when the various scales of impact (e.g., local, regional, global) are considered. Our analysis shows that, on a local scale, so little is known about the effects USSEDO on wildlife that extrapolation to larger scales with any degree of confidence is currently limited by an inadequate amount of scientific data. Therefore, without additional research to fill the significant information void, accurate assessment of the potential impacts of solar energy development on wildlife is largely theoretical but needs to be empirical and well-founded on supporting science.

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Thank you for your comment, Michael Connor.

The comment tracking number that has been assigned to your comment is SEDDsupp20101.

Comment Date: January 26, 2012 23:57:05PM
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Comment Submitted:

Western Watersheds Project is submitting this research paper with its comment letter. Thank you.

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RESEARCH ARTICLE

Making molehills out of mountains: landscape genetics of the Mojave desert tortoise

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Abstract Heterogeneity in habitat often influences how organisms traverse the landscape matrix that connects populations. Understanding landscape connectivity is important to determine the ecological processes that influence those movements, which lead to evolutionary change due to gene flow. Here, we used landscape genetics and statistical models to evaluate hypotheses that could explain isolation among locations of the threatened Mojave desert tortoise (*Gopherus agassizii*). Within a causal modeling framework, we investigated three factors that can influence landscape connectivity: geographic distance, barriers to dispersal, and landscape friction. A statistical model of habitat suitability for the Mojave desert tortoise, based on topography, vegetation, and climate variables, was used as a proxy for landscape friction and barriers to dispersal. We quantified landscape friction with least-cost distances and with resistance distances among sampling locations. A set of diagnostic partial Mantel tests statistically separated the hypotheses of potential causes of genetic isolation. The best-supported model varied depending upon how landscape friction was quantified. Patterns of genetic structure were related to a combination of geographic distance and barriers as defined by least-cost distances, suggesting that mountain ranges and extremely low-elevation valleys influence connectivity at the regional scale beyond the tortoises' ability to disperse. However, geographic distance was the only influence detected using resistance distances, which we attributed to fundamental differences between the two ways of quantifying friction. Landscape friction, as we measured it, did not influence the observed patterns of genetic distances using either quantification. Barriers and distance may be more valuable predictors of observed population structure for species like the desert tortoise, which has high dispersal capability and a long generation time.

Keywords Landscape genetics · Desert tortoise · *Gopherus agassizii* · Mojave desert · Least-cost-path · Isolation-by-resistance · Habitat suitability model

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Introduction

Habitat fragmentation can increase isolation among populations, and isolation can increase extinction risk for many species (Crooks and Sanjayan 2006; Fischer

and Lindenmayer 2007) due to demographic stochasticity, increased numbers of deterministic threats, and loss of genetic variation (Lande 1988; Saunders et al. 2001; Fahrig 2003; Henle et al. 2004; Reed 2004; Fischer and Lindenmayer 2007). Although landscape connectivity alone is usually not sufficient to ensure population persistence (Taylor et al. 2006), it does provide several clearly important means of reducing some extinction risks (Crooks and Sanjayan 2006). Among other benefits, connectivity in the landscape allows dispersal from the natal range, aids in rescue effects to prevent local extinctions, facilitates gene flow that prevents inbreeding, and fosters adequate responses to environmental change through the potential for long-term adaptation, the ability to adjust the natural distribution, and potential for recolonization after disturbance (Crooks and Sanjayan 2006).

The degree to which a landscape facilitates or impedes an organism's movement within a population depends both upon structural and functional components (Taylor et al. 1993; Brooks 2003; Taylor et al. 2006). The structural components include landscape heterogeneity that influences the habitat available to the organism, and the functional component describes the organism's response to the available habitat (Brooks 2003; Taylor et al. 2006). Quantifying both components helps us to understand how organisms move through the landscape and to identify where important habitat connections exist within the landscape. Dispersal (or some measure of movement) is one common metric to evaluate the factors that facilitate connectivity and the consequences of the amount of connectivity (Wiens 2001; Uezu et al. 2005). Inferences from genetic data have been recognized as a viable alternative to direct measurements of dispersal (Koenig et al. 1996; Waples 1998; Bohonak 1999; Brooks 2003), and a means to quantify functional connectivity (Brooks 2003; Stevens et al. 2006; Holderegger and Wagner 2008). However, gene flow only represents a subset of dispersal movements because it requires effective reproduction (Brooks 2003; Cushman et al. 2006).

Spatially explicit models and genetic data analyzed using a landscape genetics approach can be used to test specific hypotheses regarding natural levels of habitat connectivity, the influence of particular landscape features on individual movement, and the effects of habitat fragmentation (Manel et al. 2003; Keyghobadi 2007; Storfer et al. 2007). The questions addressed are species-specific, and they are constrained to the temporal and spatial scale at which individuals of a species experience their surroundings (Wiens 2001; Brooks 2003; Holderegger and Wagner 2008). Natural populations often depart from strict isolation-by-distance (Wright 1943), which occurs when the only barrier to gene flow is geographic distance and results in an average increase in genetic differentiation as geographic distance increases (Wright 1943; Slatkin 1993; Epperson 2003). Departures from isolation-by-distance suggest that additional features govern the movement of individuals, and hence the spatial genetic structure (e.g., Coulon et al. 2004; Broquet et al. 2006; Cushman et al. 2006; Epps et al. 2007). Modifying a model of straight-line distance among habitat patches to include features representing the heterogeneity of the landscape that an organism experiences could improve our understanding of landscape connectivity (Adriaensen et al. 2003; Theobald 2006).

Here, we evaluated multiple hypotheses of isolation and quantified landscape connectivity for the Mojave population of the desert tortoise (*Gopherus agassizii*). The Mojave desert tortoise is listed as threatened under the U.S. Endangered Species Act of 1973 (USFWS 1994), and tortoise habitat in this region has become fragmented by transportation corridors, utility infrastructure, and urban development over the past century (Tracy et al. 2004). Although few data exist on dispersal of desert tortoises (Morafka 1994), a recent assessment of spatial genetic structure in this long-lived species suggests that historic movement among adjacent populations has been extensive (Hagerty and Tracy 2010). Genetic differentiation among populations is small, although spatial structure is present (Hagerty and Tracy 2010). Geographic distance explains approximately 68% of the variation in genetic distance (Murphy et al. 2007; Hagerty and Tracy 2010). Nevertheless, there are natural features of the landscape occupied by desert tortoises that likely facilitate or impede movement of individuals in the landscape, and identifying these key components is important for recovery of this threatened species.

We tested hypotheses about putative causes of isolation in a causal modeling framework (Legendre 1993; Cushman et al. 2006) to assess which potential drivers of genetic structure best correlate with patterns of gene flow. Our a priori models were

chosen to test specific hypotheses regarding factors that seem to be the most relevant in determining connectivity among tortoise habitat. We assessed three possible causes of isolation: (1) geographic distance, (2) dispersal barriers, and (3) landscape friction or a measure of the habitat's resistance to flow of individuals through it. Seven potential models incorporated all combinations of isolation by barriers, isolation by landscape friction, and isolation by geographic distance. The causal modeling framework allowed us to identify a single supported model among this set of competing hypotheses. Additionally, we tested each of these models with two quantifications of landscape friction that require different algorithms and assumptions: least-cost path (Adriaensen et al. 2003; Theobald 2006) and isolation-by-resistance (McRae 2006; McRae and Beier 2007; McRae et al. 2008).

Materials and methods

Study system

The Mojave desert tortoise inhabits portions of the Mojave and Colorado Deserts, spanning four states in the southwestern United States (Utah, Arizona, Nevada, and California; Germano et al. 1994). The Mojave and Colorado deserts (>160,000 km^2) are heterogeneous in climate, geology, and topography (Rowlands et al. 1982); however, habitat is relatively continuous at low-elevations (300–900 m) where the vegetation is dominated by creosote scrub (*Larrea tridentata*; Luckenbach 1982). Mojave desert tortoises most commonly occur in areas with gentle slopes, sufficient shade resources, and friable soils to allow burrow construction (Bury et al. 1994; USFWS 1994; Andersen et al. 2000).

Sampling and genotyping

Between 2004 and 2006, blood was collected from 744 desert tortoises throughout the range where the species is federally listed, which includes areas north and west of the Colorado River (Hagerty and Tracy 2010). Sampling sites included areas sampled during annual population monitoring (USFWS 2006) along randomly placed transects within critical habitat, which are the areas that are actively managed for recovery by the U.S. Fish and Wildlife Service, and systematically-placed transects outside of critical habitat areas (Hagerty and Tracy 2010). Universal Transverse Mercator (UTM) coordinates of individual locations were recorded when DNA samples were collected. Individuals were pooled into 25 sampling locations (N = 12–80), which were identified based upon geographic features such as large valleys or combinations of small, connected valleys (Fig. 1). Each of these locations can be assigned to one of seven genotype groups that were identified previously using Bayesian assignment tests (Hagerty and Tracy 2010). The geographic centroid of each sampling location was calculated by finding the central point in polygons defined for the 25 defined sampling regions in ArcGIS (ver. 9.2, ESRI, Redlands, CA, USA) and used to represent populations for further analyses (Fig. 1). The average area of the polygons was 1000 km^2 with a 50 km diameter. We determined that this size polygon was reasonable for this study because desert tortoises have been observed moving greater than 30 km in a single foray (Edwards et al. 2004).

The 20 microsatellites used in this study were loci originally developed for *G. polyphemus* (GP15, GP30, GP61; Schwartz et al. 2003), the Sonoran population of *G. agassizii* (GOAG3, GOAG4, GOAG7; Edwards et al. 2003), and the Mojave population of *G. agassizii* (14 markers; Hagerty et al. 2008). Specific conditions for amplification and fragment analysis are described in detail elsewhere (Hagerty et al. 2008; Hagerty and Tracy 2010). We amplified the microsatellites and completed fragment analysis in collaboration with the Nevada Genomics Center (http://www.ag.unr.edu/Genomics/). All alleles were scored with GeneMapper 5.0 (Applied Biosystems, Inc., Foster City, CA, USA).

The microsatellite loci did not deviate from Hardy–Weinberg proportions and did not exhibit significant linkage disequilibrium (Hagerty and Tracy 2010). Loci exhibited high gene diversity and allelic richness (Hagerty and Tracy 2010). We calculated pair-wise genetic distance measures for the 25 sampling locations: $F_{ST}/(1 - F_{ST})$ (as recommended by Rousset (1997)) using pair-wise F_{ST} values from FSTAT (Goudet 1996), the genotype likelihood ratio (D_{LR}; Paetkau et al. 1997) in DOH (Paetkau et al. 1997), and Nei's standard genetic distance D_S (Nei

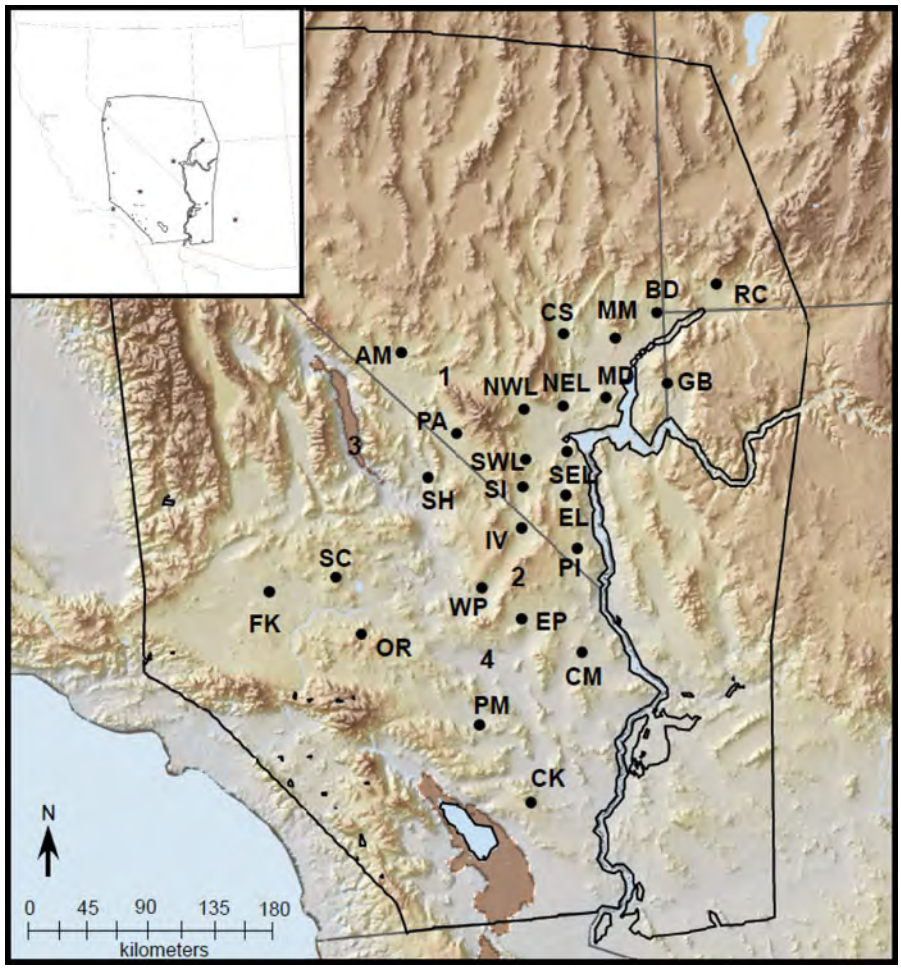

Fig. 1 Map of the sampled locations for landscape genetics of the Mojave desert tortoise. The *thick black line* designates the outline of the coverage of the habitat model. State outlines are designated as *grey lines*. The center for each of the 25 sampling locations are shown as *black dots* and are identified as follows: RC (Red Cliffs Desert Reserve, UT), Beaver Dam Slope (NV, UT), MM (Mormon Mesa, NV), GB (Gold Butte, NV), MD (Muddy Mountains, NV), CS (Coyote Springs, NV), NEL (Northeast Las Vegas, NV), NWL (Northwest Las Vegas, NV), AM (Amargosa Desert, NV), PA (Pahrump, NV), SH (Shadow Valley, CA), IV (Ivanpah, CA), WP (West Providence Mountains, CA), SI (South I-15 corridor—Sloan, Jean, Roach, NV), SWL (Southwest Las Vegas Valley, NV), SEL (Southeast Las Vegas, NV), EL (Eldorado Valley, NV), PI (Piute Valley, NV), CM (Chemehuevi Valley, NV), EP (East Providence Mountains, CA), CK (Chuckwalla Bench, CA), PM (Pinto Mountains, CA), OR (Ord-Rodman Valleys, CA), SC (Superior-Cronese Valleys, CA), FK (Fremont-Kramer Valleys, CA). Major topographic features include: (1) Spring Mountains, (2) New York and Providence Mountains, (3) Death Valley, and (4) Cadiz Valley. The Baker Sink begins near "3" and ends near "4"

1972) in Tools for Population Genetic Analysis (TFPGA; Miller 1997). Results were similar among all genetic distance measures, so we only report analyses using D_{LR} (Supplementary material). We also calculated pair-wise Euclidean distances (m) as a measure of straight-line geographic distance between pairs of the centroids of our sampling locations in ArcGIS (ver. 9.2, ESRI, Redlands, CA, USA).

Statistical model of suitable habitat

We identified levels of landscape friction with a model of the distribution of potential habitat in space (Wang et al. 2008) instead of the approach that uses expert opinion or ad hoc measures using environmental variables (Adriaensen et al. 2003; Verbeylen et al. 2003; Broquet et al. 2006; Theobald 2006; McRae and

Beier 2007). The implicit assumption is that a model of habitat suitability is a valid approximation for landscape permeability to dispersal (Broquet et al. 2006; Epps et al. 2007; Wang et al. 2008). We developed a model of habitat suitability using the presence data (15,311 observations) and environmental layers described in Nussear et al. (2009). We used 12 environmental variables to predict the presence of the Mojave desert tortoise throughout their geographic range. The environmental data consisted of various GIS layers of vegetation, topography, soils and precipitation (Table 1). Tortoise presence points were aggregated into a 1 km^2 grid where one or multiple locations per km^2 indicated presence of tortoises. The total number of number of presence points was reduced to 6,350 grid cells containing tortoises. Environmental layers were calculated at a 1 km^2 scale either directly (e.g., precipitation) or using an area-weighted average for each 1 km^2 cell (e.g., elevation). The number of environmental layers was reduced from an initial set of 16 GIS layers (Nussear et al. 2009) using AIC ranking (Burnham and Anderson 2002) in a bi-directional, stepwise model-ranking process (Lehmann et al. 2002). A Generalized Regression Analysis and Spatial Prediction (GRASP) modeling algorithm (Lehmann et al. 2002) was used to build the model using 80% of the points (5,080), and the remaining 20% of the points (1,270) were used for model evaluation. Model performance was evaluated using receiver-operating characteristics (ROC) that were calculated using the ROCR package (Sing et al. 2005) in R (R Development Core Team 2009). The 12-variable model had a high AUC (area under the ROC curve) test score (0.92) and had a significant Pearson's correlation coefficient of 0.75 ($P < 0.001$), indicating a substantial agreement between the predicted habitat and the observed presence of desert tortoises in the testing set. The resulting predictive model of Mojave desert tortoise occurrence was represented by a floating-point value ranging from 0 to 1, which we defined as suitability of tortoise habitat in each cell. We used this model of tortoise occurrence to create a cost surface for the isolation by landscape friction model. Thus, cells of lower potential habitat would reduce the ability to traverse the landscape. The cost surface was calculated by subtracting each cell value from 1.

We also created a binary representation of habitat suitability by classifying habitat suitability as a binary distribution where 1 equaled habitat and 0 equaled non-habitat by using a threshold that included 99% of all known presence cells (using a model value >0.125). Cells that were non-habitat were coded as "no data" in the binary cost surface, which caused those cells to be complete barriers to movement. This binary model was used as our isolation by barriers model because it designated places that would not be considered tortoise habitat, but explicitly allowed tortoises to move across all other cells without friction.

Table 1 Variables used to model potential habitat for the Mojave desert tortoise (Nussear et al. 2009)

Category	Variable	Data layer description	Source
Topography	Elevation	30 m DEM	Wallace and Gass (2008)
	Slope	Derived from 30 m DEM	Wallace and Gass (2008)
	Northness (aspect)	Derived from 30 m DEM	Wallace and Gass (2008)
	Average surface roughness	Derived from 30 m DEM	Wallace and Gass (2008)
	Percent smoothness	Derived from 30 m DEM	Wallace and Gass (2008)
Soils	Average bulk density		STATSGO database; Bliss (1998)
	Depth to bedrock		STATSGO database; Bliss (1998)
	Average percentage of rocks	>254 mm B-axis diameter	STATSGO database; Bliss (1998)
Vegetation	Perennial plant cover		Wallace et al. (2008)
	Annual plant proxy		Wallace and Thomas (2008)
Climate	Mean dry season precipitation	30 year normal period (1961–1990) May–October	Blainey et al. (2007)
	Mean wet season precipitation	30 year normal period (1961–1990) November–April	Blainey et al. (2007)

We analyzed the resulting cost surfaces with the centroids of the 25 tortoise sampling locations using least-cost-path and isolation-by-resistance as quantifications of landscape friction. The area covered by the GRASP model included the entire area sampled for population genetics, and the Colorado River was included as an absolute barrier in all models (Fig. 1; Nussear et al. 2009).

Quantifying landscape friction: least-cost path

Least-cost-path analyses are used to estimate a least-cost distance between habitat patches (Adriaensen et al. 2003; Theobald 2006). The least-cost distance is a modified Euclidean distance that uses landscape friction to determine a more ecologically-relevant path between patches (Verbeylen et al. 2003; Theobald 2006). Typically, least-cost distance is calculated using a cost-weighted function (cost associated with moving across a cell). The least-cost path for each pair of locations was quantified with the cumulative cost across all cells while moving from location A to B in GRASS GIS (ver. 6.3; GRASS Development Team 2008). We plotted the least-cost path between each of the 25 sampling locations in ArcGIS (ver. 9.2, ESRI, Redlands, CA, USA).

Quantifying landscape friction: isolation-by-resistance

Isolation-by-resistance is based in circuit theory, and uses a graph theoretic approach to predict movement patterns and quantify the effects of certain landscape features (McRae 2006; McRae et al. 2008). The edges between nodes (or locations) in the graph network are represented as analogs to resistors in an electrical circuit and the same basic concepts apply (i.e., Ohm's Law; McRae et al. 2008). Resistance distance is a measure of isolation that is similar to the least-cost distance; however, the resistance distance decreases as the number of available pathways between locations increases (McRae et al. 2008). In addition to integrating connectivity across all possible paths, the resistance distance assumes that the disperser does a random walk between points, basing each movement on the relative quality of the habitat in all directions. When the movement corresponds to gene flow, which operates on a different spatio-temporal scale, the surrogate is migration rate per generation (McRae 2006).

We calculated resistance distance between all pairs of desert tortoise locations in Circuitscape (ver. 3.4; McRae and Shah 2009). For our models, the habitat suitability in each grid cell was treated as a conductance value (the inverse is resistance). Circuitscape provided a pair-wise resistance distance matrix as well as a cumulative (additive among pairs) current map, representing the expected probability of movement for random walkers, which we viewed in ArcGIS (ver. 9.2, ESRI, Redlands, CA, USA).

Causal modeling framework and Mantel tests

To evaluate geographic distance, barriers, and landscape friction in a causal modeling framework (Legendre 1993; Cushman et al. 2006), we identified the diagnostic expectations for each of the seven possible hypotheses of causal relationships (Table 2). Diagnostic expectations for each model included a specific set of partial correlations to be statistically significant or not (Table 2). For example, under the distance only model, geographic distance would have a significant positive correlation with genetic distance after parsing out the barrier or landscape-friction matrix (Table 2). Under the same model, the barrier and landscape-friction matrices would not be significantly correlated to genetic distance after parsing out geographic distance (Table 2). Then, we compared the statistical relationship between genetic distance and each model (Legendre 1993; Cushman et al. 2006). We determined a single supported model by testing each factor against the competing factors and then evaluating the combined results. The hypothesis with the most support should meet all of the diagnostic expectations associated with that hypothesis, providing a rigorous evaluation of the potential factors that impede gene flow (Table 2).

We completed Mantel tests (Mantel 1967) and partial Mantel tests (Smouse et al. 1986) in Program R using the "vegan package" (Oksanen et al. 2007). A Pearson product-moment correlation was calculated, and we determined significant correlations by using a permutation test with 10,000 replicates. We used the Monte Carlo *P*-value to determine significant simple and partial Mantel correlations, but only used them to determine which diagnostic expectations were met for each model. These actions reduced the chance of bias in our interpretations, and they address some of the criticisms of partial Mantel tests

Table 2 Evaluation of the isolation hypotheses using two quantifications of landscape friction: least-cost path (LCP) and isolation-by-resistance (IBR)

Partial Mantel	Diagnostic expectations and model support													
	Distance only		Barrier only		Landscape only		Distance and barrier		Distance and landscape		Landscape and barrier		Distance, landscape, barrier	
	LCP	IBR*	LCP	IBR	LCP	IBR	LCP*	IBR	LCP	IBR	LCP	IBR	LCP	IBR
DG.B	**>0**	**>0**	NS	NS	NA	NA	**>0**	**>0**	**>0**	**>0**	NS	NS	**>0**	**>0**
DG.L	**>0**	**>0**	NA	NA	NS	NS	**>0**	**>0**	**>0**	**>0**	NS	NS	**>0**	**>0**
BG.D	NS	**NS**	**>0**	>0	NA	NA	**>0**	>0	NS	**NS**	**>0**	>0	**>0**	>0
BG.L	NA	NA	**>0**	**>0**	NS	NS	**>0**	**>0**	NS	NS	**>0**	**>0**	**>0**	**>0**
LG.B	NA	NA	**NS**	**NS**	>0	>0	**NS**	**NS**	>0	>0	>0	>0	>0	>0
LG.D	**NS**	**NS**	NA	NA	>0	>0	**NS**	**NS**	>0	>0	>0	>0	>0	>0

The diagnostic expectations (partial Mantel test and the expected significance value) for each hypothesis are listed. *D* distance, *B* barrier (binary habitat model), *L* landscape (continuous habitat model), *G* genetic distance (D_{LR}), *NS* not significant, >0 = *P*-value below 0.05, *NA* not applicable. A period separates the main matrices on the left from the covariate matrix on the right that is partialed out in the partial Mantel test. For example, DG.B is a partial Mantel test between the distance, and the genetic distance matrices with the barrier matrix partialed out. Model support is indicated with bold type based upon the *P*-value for each partial Mantel test compared to the diagnostic expectations. Refer to Table 3 for the exact *P*-values for each partial Mantel test

* The hypothesis with the most support

(Raufaste and Rousset 2001; Rousset 2002, but see Castellano and Balletto 2002; Balkenhol et al. 2009).

Results

Mantel correlations

Euclidean distance correlated significantly with pairwise genetic distance, as evidenced by a significant Mantel correlation (Table 3). Additionally, least-cost distances and resistance distances for the landscape-friction and barrier models were correlated significantly with genetic distances between pairs of sampling locations (Table 3). However, the simple Mantel correlations were lower for the resistance-distance matrices (Table 3).

Causal modeling and partial Mantel tests

The hypothesis of isolation with the most support varied depending on the quantification of landscape friction (Table 2). Using least-cost distances, the barrier and distance model was fully supported by all the statistical expectations. Using resistance

Table 3 Mantel and partial Mantel correlations (*r*) between spatial and genetic pairwise distances among 25 sampling locations

Mantel or partial Mantel test	Least-cost distance		Resistance distance	
	r	*P*-value	*r*	*P*-value
DG	0.821	**0.0001**		
BG	0.820	**0.0001**	0.467	**0.0001**
LG	0.738	**0.0001**	0.351	**0.0001**
DG.B	0.194	**0.0300**	0.766	**0.0001**
DG.L	0.537	**0.0001**	0.806	**0.0001**
BG.D	0.188	**0.0250**	−0.094	0.7900
BG.L	0.339	**0.0004**	0.580	**0.0001**
LG.B	−0.256	0.9930	−0.507	0.9900
LG.D	−0.077	0.7740	−0.241	0.1940

Spatial distances are resistance distance or least-cost distance using the cost surface from the habitat model. The Mantel test statistic *r* is based on a one-sided Pearson's product-moment correlation and significance values are based on 10,000 permutations. *D* distance, *B* barrier (binary habitat model), *L* landscape (continuous habitat model), *G* genetic distance (D_{LR}). A period separates the main matrices on the left from the covariate matrix on the right that is partialed out in the partial Mantel test. For example, DG.B is a partial Mantel test between the Euclidean distance and the genetic distance matrices with the barrier distance matrix partialed out. Bold values indicate *P*-values < 0.05

distances, the distance model was fully supported (Table 2). The outcome of the BG.D partial Mantel test was the main difference between the two landscape friction quantifications, causing the barrier and distance model to not be fully supported using resistance distances (Tables 2, 3). The landscape-friction component of all hypotheses had no support based on the diagnostic expectations (Tables 2, 3).

The cumulative, least-cost paths across the 25 locations were similar in the landscape-friction and barrier models (Fig. 2). The paths for both models did not include large areas of unsuitable habitat such as the northwest corner of the range and major mountain ranges such as the Spring Mountains (Fig. 2). The barriers were apparent in both models, however, the lack of a gradient across other habitat in the barrier model made individual paths between locations more direct, making them more similar to the Euclidean distance (not shown). Similar barriers and habitat corridors were visible in the isolation-by-resistance maps (Fig. 3) when compared to the least-cost-path maps (Fig. 2). Mountain ranges (e.g., Spring, New York, Providence, and Sheep Ranges) and low elevation areas (Death and Cadiz Valley) had no current flow (Fig. 3). The northeastern portion of the desert tortoise's range in Nevada and into California,

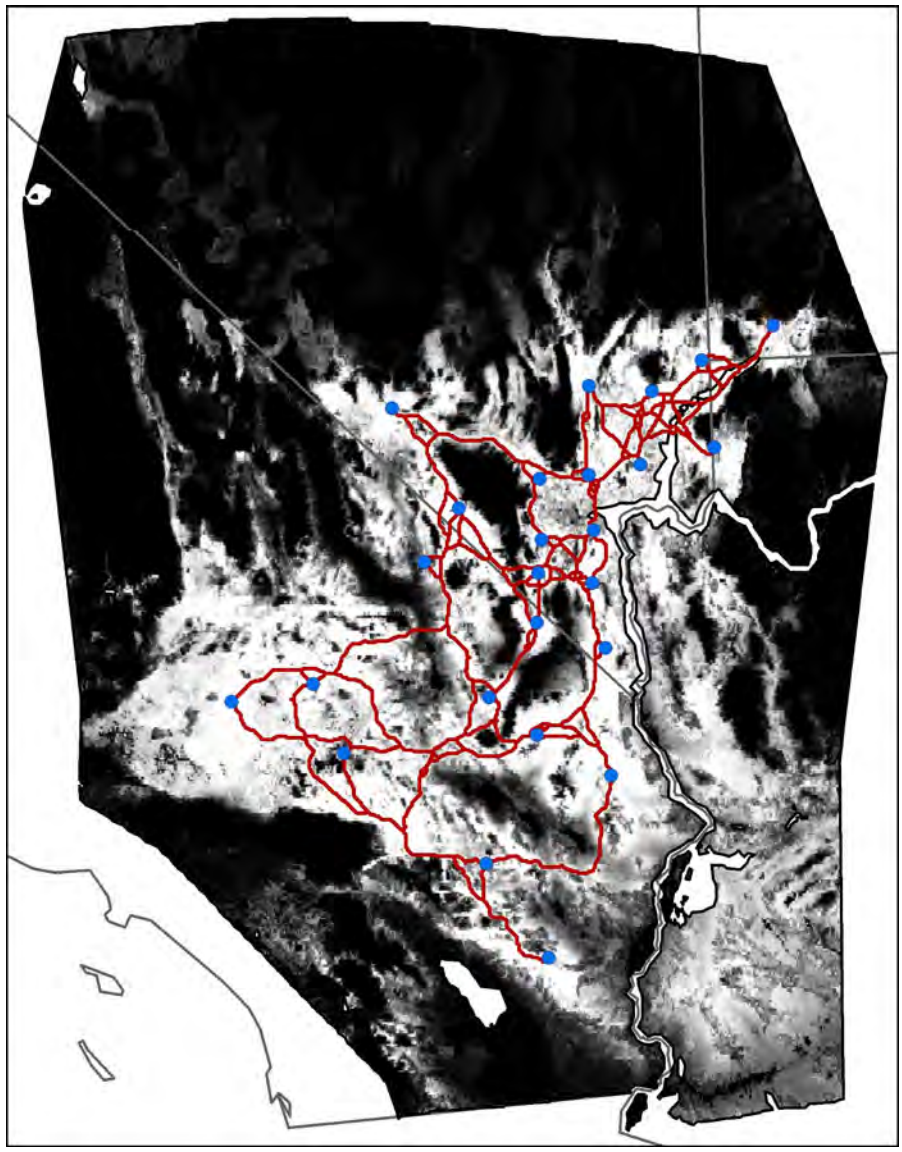

Fig. 2 Distribution of desert tortoise habitat in the Mojave Desert predicted using the 12-variable GRASP model in Program R and the cumulative least-cost path using the 25 pair-wise population comparisons. Gradient of *grey* (floating values) indicate probability of desert tortoise occurrence. *Black* indicates lowest probability (0) while *white* indicates highest probability (1). *Red lines* indicate least-cost paths between pairs of sampling locations. *Blue dots* represent the 25 population centroids

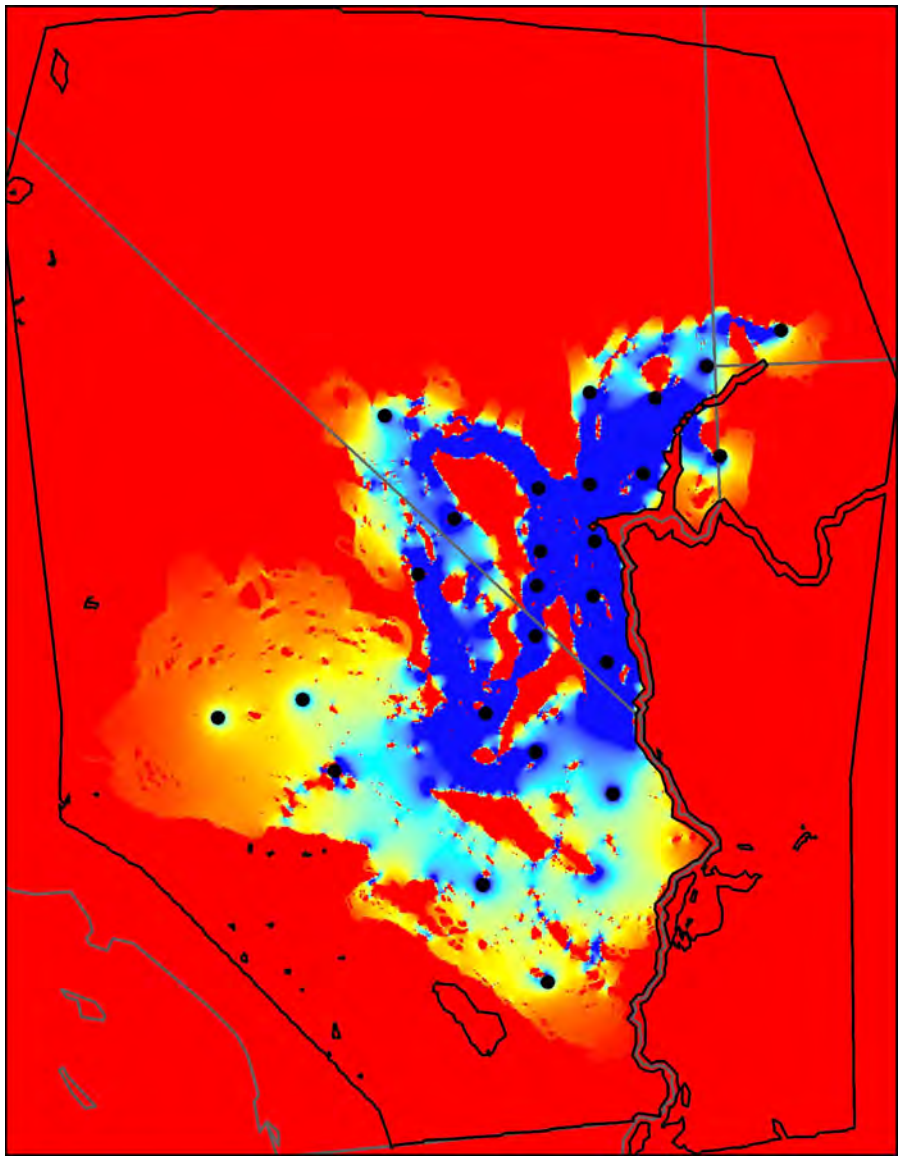

Fig. 3 Cumulative current maps between pairs of populations from the isolation-by-resistance models using the binary 12-variable habitat model (barrier). The gradients of colors indicate the probability of desert tortoise movement, with *red regions* indicating no current, *yellow* and *orange regions* representing low current, and *blue regions* representing high current. *Black dots* represent the 25 population centroids

mainly through Las Vegas valley, along the Colorado River, and regions between mountain ranges, contained areas of very high current density (Fig. 3). In contrast, natural barriers did not fragment habitat within California and had more diffuse current flow between sampling locations (Fig. 3).

Discussion

We evaluated hypotheses about isolation among populations of the Mojave desert tortoise in a causal modeling framework to determine which factors most likely limit gene flow. Hypotheses included combinations of three factors: geographic distance, dispersal barriers, and landscape friction. We identified geographic distance and dispersal barriers as dominant factors associated with genetic structure, while landscape friction, as we defined it, had little to no little influence.

Previously, the desert tortoise was identified as a model organism for studying isolation-by-distance (Edwards et al. 2004). Straight-line distances among locations of desert tortoises strongly correlates with

genetic distances, suggesting that dispersal distance is a major factor shaping genetic structure among, and within, populations (Edwards et al. 2004; Murphy et al. 2007; Hagerty and Tracy 2010). Our data supported these previous assertions, which is an unusual circumstance for natural populations. For a majority of terrestrial species, straight-line distances are correlated only weakly with genetic distance (e.g., Vos et al. 2001; Coulon et al. 2004; Broquet et al. 2006; McRae and Beier 2007). However, genetic distance correlates well with geographic distance at a landscape scale for some terrestrial turtles and tortoises (e.g., Howeth et al. 2008).

Dispersal barriers also were correlated with genetic distance, and the distance and barriers hypothesis was the best-supported model with the least-cost distance quantification. Therefore, dispersal distance may not be the only factor impeding gene flow. Gene flow among desert tortoise populations is at least partially restricted by large topographic features such as high-elevation mountain ranges (e.g., Spring Mountains, New York Mountains, Providence Mountains) and very low elevation regions (e.g., Death Valley, Cadiz Valley; Fig. 1). These apparent elevation barriers are visible in the maps of landscape friction (Figs. 2, 3) and elevation explained a high proportion of the variance in tortoise presence in the habitat model (Nussear et al. 2009). Elevation appears to be an important determinant of these partial barriers, but it is an indirect measure of several variables, including thermal environment, soil type, and vegetation assemblages (e.g., Nagy and Medica 1986; Germano et al. 1994; Zimmerman et al. 1994; Andersen et al. 2000; Nussear 2004). Thus, areas with extremely high or low elevations likely impose thermal constraints that we were unable to model directly, provide suboptimal vegetative cover, and physically impair movements.

Due to one diagnostic expectation, barriers appeared not to affect genetic structure with the resistance-distance quantification. Differences between the quantifications of landscape friction could explain this result. Most importantly, when more than one pathway is available to traverse the landscape or the size of the path increases, the resistance distance effectively decreases, but the least-cost distance does not (McRae et al. 2008). The redundancy in habitat corridors may have reduced resistance (friction) enough that the barriers were no longer correlated with genetic distance between sampling locations of desert tortoises. The underlying assumptions of the algorithm are also different. The least-cost-path algorithm, which is an overall measure of landscape friction, assumes that a disperser has complete knowledge of the landscape as it chooses the "preferred" route (McRae et al. 2008), though the feasibility of the route is not considered (Adriaensen et al. 2003). The isolation-by-resistance algorithm assumes that the disperser is equivalent to a random walker that chooses a direction for each step based only on the relative quality of the habitat in the adjacent directions, allowing the potential for wandering (McRae et al. 2008). However, it is important to recall that we investigated how the landscape influences migration rates per generation across a large geographic area, not individual dispersers among habitat patches. In this case, we can interpret the optimal path (s) as proportionally increasing the amount of gene flow.

The differences between the two quantifications can be compared by regression of the residuals from linear regressions of the friction measures against Euclidean distance. Individual comparisons with higher least-cost distances compared to the Euclidean distance (higher residuals) are locations that are separated by large mountain ranges. For example, the South I-15 corridor (SI) and Pahrump (PA) are separated by approximately 66 km straight-line distance, but are also separated by the Spring Mountains. These locations have a pair-wise F_{ST} of 0.023 (Hagerty and Tracy 2010). In contrast, two locations with an equivalent straight-line distance that are not separated by a mountain range (Amargosa Desert and Pahrump) have a pair-wise F_{ST} value of 0.009 (Hagerty and Tracy 2010). This example illustrates why the barriers and distance hypothesis was supported by the diagnostic expectations with the least-cost distance. However, individual comparisons with higher resistance distances compared to the Euclidean distance (higher residuals) are locations that are separated by "pinch points," or areas with very narrow habitat corridors that increase the resistance distance. For example, high resistance distances are connected to locations such as Red Cliffs Desert Reserve (RC), which has a very narrow area of habitat that connects it to the rest of the range (Fig. 3). These narrow habitat corridors appear to drive the results for isolation-by-resistance. Multiple habitat corridors that circumvent the mountain barriers reduce the resistance, and could explain the reduction in support for the barriers and distance hypothesis.

We did not find any support for the hypothesis that landscape friction per se causes isolation for Mojave desert tortoises and there are several potential reasons for this. First, friction accumulates with distance, so isolation-by-distance may dominate the explained variance, thus masking additional resistance. Second, our landscape variables may be insufficient to capture the factors influencing the movement of tortoises through the landscape, although they are good predictors of tortoise presence. Quantifying landscape friction relies on relevant landscape variables, which accurately reflect the cost of dispersal for the individual at the appropriate temporal and spatial scale (Balkenhol et al. 2009). Therefore, the effectiveness of the approach depends upon success in modeling landscape friction (Holderegger and Wagner 2008). Our chosen landscape variables, which describe desert tortoise habitat in the present, also may not capture the appropriate temporal scale to explain the genetic population structure (Balkenhol et al. 2009). Further, we used statistical habitat models (Austin 2002; Lehmann et al. 2002), where the chosen variables were predictors of tortoise habitat suitability, and used as a proxy for landscape friction. Thus, the cost surfaces from the habitat suitability model may only reflect habitat use and not the cost of dispersal (Epps et al. 2007).

Another potential explanation for the lack of support for landscape resistance is that the processes that influence movement at finer spatial and temporal scales may not impact observed, broad scale patterns of population structure (Lee-Yaw et al. 2009). Although heterogeneity in variables such as annual and perennial vegetation and precipitation likely influence daily, seasonal, and annual movements of tortoises, these variables provided little explanation for the patterns of genetic structure that we observed at the regional level. The effects of landscape variables may be limited at these broader spatial scales, especially for species with strong dispersal capabilities that have multiple avenues for gene flow (Lee-Yaw et al. 2009). At the regional scale, desert tortoise habitat had considerable redundancy in habitat corridors, which may reduce the impact of any high resistance areas at a local scale (Fig. 3). The most influential features in this system are likely absolute barriers to dispersal such as the Colorado River, which separates the Mojave and Sonoran populations of the desert tortoise (Murphy et al. 2007).

Our study reinforces the hypothesis that habitat within the Mojave population of the desert tortoise was well connected. We can deduce from the *F*-statistics and assignment tests that gene flow among adjacent populations within the Mojave and Colorado Deserts was relatively high, at least historically (Hagerty and Tracy 2010). Las Vegas Valley was hypothesized previously to be a transitional corridor between the northern and southern reaches of the geographic range (Britten et al. 1997; Hagerty and Tracy 2010). We detected habitat corridors in Las Vegas Valley, and along the foothills of the New York and Providence Mountains (Fig. 3). In comparison to the northeastern Mojave Desert, habitat in the southwestern portion of the range is more continuous and has few "pinch points" that indicate important, restricted habitat corridors (i.e., low habitat redundancy). The Baker Sink is a low-elevation barrier that begins in Death Valley and separates these topographically different areas (Fig. 1).

Despite inferring the existence of partial barriers, gene flow was most likely possible through local interactions over many generations. Therefore, most, if not all, dispersal barriers were permeable over the long temporal scale at which tortoise population dynamics likely occur. Genetic exchange and dispersal are population-level processes, which occur over long temporal scales from decades to centuries, especially for species with long generation times (Brooks 2003; Keyghobadi 2007). Thus, our models are best used for addressing large-scale patterns of gene flow that were present for generations, not the nuances of dispersal over short time scales (McRae 2006; Epps et al. 2007; Lee-Yaw et al. 2009).

Our modeling cannot address any present day barriers to gene flow for the Mojave desert tortoise. For species with long generations times (such as the desert tortoise), detecting the effects of recent habitat fragmentation may be difficult, even when using variable molecular markers (Keyghobadi 2007, though see Murphy et al. 2008). Indeed, any changes in gene flow that have occurred over the past century, such as the construction of major highways, are likely not yet visible with microsatellite markers because the generation time for a desert tortoise is estimated to be 25 years (USFWS 1994; Hagerty and Tracy 2010). However, evidence exists that roads can cause changes in genetic structure with sufficient time (e.g., Vos et al. 2001; Epps et al. 2005), and in some cases

as few as five generations (Murphy et al. 2008). We can hypothesize that fragmentation of the Mojave Desert has altered the natural patterns of dispersal and gene flow for this species, which we began to uncover in this study. Future work should include tests of the effects of fragmentation and modeling to predict any resulting genetic effects.

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Thank you for your comment, Ann Congdon.

The comment tracking number that has been assigned to your comment is SEDDsupp20102.

Comment Date: January 26, 2012 23:57:14PM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20102

First Name: Ann
Middle Initial: M
Last Name: Congdon
Organization: Sky's The Limit
Address: P O Box 1
Address 2:
Address 3:
City: Twentynine Palms
State: CA
Zip: 92277
Country: USA
Privacy Preference: Don't withhold name or address from public record
Attachment:

Comment Submitted:

There was insufficient publication and many people have not read the report. I am requesting an extension of the public comment period for the following reasons:
The Solar PEIS Supplement (a 582-page document) with its extensive scientific data and regulatory information requires time for stakeholders to make informed comments.
An extension of the public comment period (3 months) is necessary to have sufficient time to adequately analyze the effects of 20 million additional acres of public lands and to ensure a meaningful democratic process.

The size of these variance lands east of the City of Twentynine Palms and east of the Air/Ground Combat Center will affect wildlife corridors and other environmental, cultural, and economic resources. Solar development on these lands and their proximity to the Joshua Tree National Park which attracts visitors from all over the world will have a significant effect on the local and regional tourism economy of the gate-way communities in the Morongo Basin.

Thank you for your comment, Alan Carlton.

The comment tracking number that has been assigned to your comment is SEDDsupp20103.

Comment Date: January 27, 2012 00:05:27AM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20103

First Name: Alan
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Attachment:

Comment Submitted:

Dear Secretary Salazar,

I appreciate the opportunity to submit comments to the Bureau of Land Management ("BLM") on the Supplement to the Draft Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States ("Supplement to the Draft PEIS"). I am submitting these comments as someone who cares deeply about preserving our precious Western ecosystems and wild lands. However, I also have a strong commitment to halting climate change and ending our dependence on fossil fuels.

I support developing rules to guide solar projects to the most appropriate areas to minimize impacts to wildlife and ecosystems. I strongly support limiting development on public lands to low-impact solar energy zones.
Your proposal to allow additional projects outside zones (the "Variance Process") could undermine the entire solar energy program if developers can site solar projects in areas with high environmental resource value. If the variance process is included in the final program, please make sure that variance applications are the exception not the rule by processing such applications only in areas with low resource conflicts and only when solar energy zones contain insufficient land. Variance applications should be processed in accordance with IM No. 2011-061.

I commend the BLM for excluding fragile and ecologically important areas from solar development in response to environmental concerns (the "Exclusion Areas"). I would like to see this list of Exclusion Areas expanded to include additional environmentally sensitive areas and those areas important to the survival of wildlife species such as: wildlife habitat management areas, golden eagle foraging and nesting habitat, the entire Ivanpah Valley in both Nevada and California, Citizens Wilderness Proposals, lands acquired by the BLM for conservation purposes and the entire Pisgah Valley.

Sincerely,

Thank you for your comment, Marilyn Jasper.

The comment tracking number that has been assigned to your comment is SEDDsupp20104.

Comment Date: January 27, 2012 01:25:18AM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20104

First Name: Marilyn
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Last Name: Jasper
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Comment Submitted:

We care deeply about preserving our ecosystems and wildlife habitat as well as halting climate change/dependency on fossil fuels. Rules to establish solar projects in appropriate areas that minimize impacts and to limit such projects to low-impact solar energy zones must be established and fully followed. Allowing projects outside such zones ("Variance Process") should not be allowed, especially if any high-value environmental resources would be impacted. If/when rarely allowed, Variance applications should be processed in accordance with IM No. 2011-061.
Any/All efforts to exclude fragile and important areas as well as any areas which are important for wildlife survival must given highest priority in locating solar development.

Thank you for your comment, Brian King.

The comment tracking number that has been assigned to your comment is SEDDsupp20105.

Comment Date: January 27, 2012 10:34:05AM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20105

First Name: Brian
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Attachment: Rocky Mountain Power - Comments on Solar Draft PEIS - 27January2012.pdf

Comment Submitted:

ROCKY MOUNTAIN POWER
A DIVISION OF PACIFICORP

1407 West North Temple
Salt Lake City, UT 84116

January 27, 2012

Supplemental and Draft Solar Programmatic Environmental Impact Statement (PEIS)

Rocky Mountain Power Comment Letter

To Whom It May Concern,

Rocky Mountain Power (the Company), a division of PacifiCorp, appreciates the U.S. Department of Energy, Energy Efficiency and Renewable Energy Program and the U.S. Department of the Interior, Bureau of Land Management's efforts to facilitate future siting of utility-scale solar /renewable energy development and efforts to ensure consistent application of conservation and mitigation measures applicable to such development. The Company serves over 1 million customers in three states, Idaho, Utah and Wyoming.

The Company maintains and operates transmission lines within the vicinity of SEZs identified in the PEIS in Utah and is currently planning additional lines, notably the Sigurd to Red Butte 345 kV Transmission Line Project (DEIS released in summer of 2011). As such the Company takes vested interest in energy resource development within its service territory.

The Company provides the following comments for consideration as follows:

Criteria to Identify SEZs

Criteria to identify SEZs include proximity to transmission lines, as stated specifically for the Milford Flats South SEZ on page 13.2-1, Section 13.2.1.1 General Information, lines 3-39 and is further evident in the description of the Milford Flats South SEZ which includes the following statement on page 13.2-1, lines 23-24 that "The nearest alternating current transmission line is a 345-kV line that runs north to south about 19 mi (31 km) southeast of the eastern boundary of the proposed SEZ.". The Company recognizes that proximity to transmission is one of several criteria, albeit a fairly important criterion, used to identify SEZs.

The Company concurs with the assumption made on page 13.2-3, Section 13.2.1.2 Development Assumptions for the Impacts Analysis, lines 24-29 stating "It is possible that this existing line could be used to provide access from the SEZ to the transmission grid, but the 345-kV capacity of that line may be inadequate for 576 to 1,037 MW of new capacity (note: a 500-kV line can approximately accommodate the load of one 700-MW facility). At full build-out capacity, it is likely that new transmission and/or

ROCKY MOUNTAIN POWER
A DIVISION OF PACIFICORP

1407 West North Temple
Salt Lake City, UT 84116

upgrades of existing transmission lines would be required to bring electricity from the proposed Milford Flats South SEZ to load centers; however, at this time, the location and size of such new transmission facilities is unknown."

Similar conclusions are made for the Escalante Valley SEZ (3 miles from the termination of an existing 138 kV line).

The Company would like to emphasize that the existence of a transmission line does not necessarily mean that adjacent generation sources can be accommodated by that line. Therefore, this section of the document appears to make a conclusion that may be premature and inaccurate without much further detailed study of the transmission capacity on the existing system in the vicinity of an SEZ.

Safety and Setback from Existing Facilities

The Company requests that safety issues, such as setback distances from existing and currently proposed transmission lines be incorporated and clearly articulated within the PEIS and identification of SEZs. Based on review of maps of the proposed Milford Flats South and Escalante Valley SEZs, it is difficult to determine their location in relation to the Companies currently proposed Sigurd to Red Butte 345 kV transmission line study corridor and any potential siting conflicts that may exist.

Regulatory Mechanisms

The Company encourages the BLM to consider potential Applicants' responsibilities under other federal processes and/or regulatory obligations as part of its assessment for future generation potential; especially those related to transmission system reliability and governed by the Western Electricity Coordinating Council (WECC) and/or the Federal Energy Regulatory Commission (FERC).

The Company appreciates consideration of its comments. Please contact Aaron Gibson (801-756-1201), aaron.gibson@rockymountainpower.net, with any questions.

Sincerely,

Aaron Gibson
Customer and Community Manager

Thank you for your comment, Sally Miller.

The comment tracking number that has been assigned to your comment is SEDDsupp20106.

Comment Date: January 27, 2012 10:54:38AM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20106

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Attachment: 1-27-2012 SPEIS comments FINAL+Appendix.pdf

Comment Submitted:

Please accept these comments on behalf of Audubon California, California Wilderness Coalition, Defenders of Wildlife, Natural Resources Defense Council, Sierra Club and The Wilderness Society.

Thank you.

AUDUBON CALIFORNIA
CALIFORNIA WILDERNESS COALITION
DEFENDERS OF WILDLIFE
NATURAL RESOURCES DEFENSE COUNCIL
SIERRA CLUB
THE WILDERNESS SOCIETY

January 27, 2012

Delivered via electronic submission to the BLM Solar PEIS website and U.S. mail

Ms. Shannon Stewart
Solar Energy PEIS
Argonne National Laboratory
9700 S. Cass Avenue – EVS/240
Argonne, IL 60439
Submitted via U.S. Mail and Email

RE: Comments on Supplement to the Draft Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States (California portion)

Dear Ms. Stewart:

Following are comments on the Bureau of Land Management's (BLM's) and the Department of Energy's (DOE's) jointly prepared Supplemental Programmatic Environmental Impact Statement (SPEIS) for Solar Energy Development in Six Southwestern States, submitted by Audubon California, California Wilderness Coalition, Defenders of Wildlife, Natural Resources Defense Council, Sierra Club and The Wilderness Society. Our organizations have been deeply involved in protecting California's public lands for decades and, more recently, in renewable energy development throughout the state, especially in the desert region. These comments are specific to California, and we hope you will give them serious consideration.

I. Introduction.

We appreciate that the Department of the Interior (DOI) has recognized via the issuance of the SPEIS the wisdom of adopting a "directed development" approach to large-scale solar energy development on the west's public lands, as reflected in the modified solar energy development program alternative. We applaud this modified approach and believe it will lead to the best large scale solar development projects located in the most suitable places on our public lands.[1]

[1] We believe that large scale solar development on appropriate private lands within the California desert is not only feasible but essential, and are pleased to see BLM acknowledge the importance of public-private land use planning for solar energy development in the SPEIS. See, e.g., SPEIS at p. 2-29. There may also be potential for development of some large-scale solar on Department of Defense (DOD) lands; see, e.g., http://www.serdp-estcp.org/News-and-Events/News-Announcements/Program-News/DoD-study-finds-7-000-megawatts-of-solar-energy-potential-on-DoD-installations-in-Mojave-Desert ("The study concludes that 25,000 acres are 'suitable" for solar development' on DOD lands in the Mojave Desert.")

We strongly believe that, ultimately, the success of the DOI's and the BLM's solar energy program depends on developing policy and guidelines that will guide projects to the most appropriate locations, thus limiting environmental impacts and facilitating the timely construction of the most appropriate projects. We appreciate the DOI's commitment to zone-based development, as expressed not just in this supplemental document but also in the remarks of officials at the time the supplement was released. See, e.g., Department of Interior news release, October 27, 2011; http://www.blm.gov/wo/st/en/info/newsroom/2011/october/NR_10_27_2011.html.

We look forward to working further with the DOI and the BLM to ensure that: 1) appropriate Solar Energy Zones (SEZs) are identified and designated; 2) solar projects are guided to those zones via appropriate development incentives in the zones; 3) additional information needed to ensure "smart from the start" development is incorporated into regional mitigation plans and SEZ-specific project design features; 4) additional policy and/or plans needed to support a comprehensive and environmentally responsible solar energy development program on our public lands are adopted; and 5) the decisions made in the Final PEIS are integrated into and coordinated with the Desert Renewable Energy Conservation Plan (DRECP) planning effort for the Mojave and Colorado deserts of California, and the BLM remains committed to managing its lands in the California desert in conjunction with the DRECP.

The proposal to make some BLM lands open to "variance" applications is new, and, if included in the final program, must be accompanied by measures to ensure that such applications and any resulting projects are the exception, not the rule.[2] The additional lands we believe should be excluded from variance applications are detailed below and in our comments on the Draft PEIS,[3] which we fully incorporate by reference herein. We recommend that DOI acknowledge that any variance applications considered after adoption of the Final PEIS and before adoption of the DRECP must be consistent with the developing DRECP conservation strategy pursuant to the "consistency" requirements of the California's Natural Communities Conservation Planning Act of 2003. See California Department of Fish and Game sections 2800, et seq.[4]

The deserts of California are particularly vulnerable to climate change; in fact the California Desert has been determined to be a "hot spot" for climate change. See, e.g., http://www.stanford.edu/~omramom/Diffenbaugh_GRL_08.pdf. While large-scale solar facilities may help to alleviate the effects of climate change and we therefore believe they need to be developed promptly, they have very direct impacts on the fragile desert landscape and its inhabitants, which could be exacerbated by climate change. The DOI and the BLM thus have a careful "balancing act" to do to ensure that solar development occurs in the most appropriate locations for such development while not irreversibly harming the ability of desert inhabitants to adapt to climate change.

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[2] Some of our organizations previously supported a well-defined and limited "variance" process. See letter of May 2, 2011 from California Desert Renewable Energy Working Group to Robert Abbey, Director, BLM.

[3] See NRDC, et al, April 29, 2011.

[4] Similarly, the consideration of new SEZs within the California Desert Conservation Area should also be consistent with the DRECP.

Our comments are organized as follows: We first discuss the California Desert Conservation Area (CDCA) and the DRECP; both the California-specific designation and the California-specific planning initiative have important relevance to the SPEIS. Next we discuss our recommendations for fine-tuning the California SEZs, followed by comments on recommended exclusion areas that we raised in our comments on the Draft PEIS and which we feel are not sufficiently addressed in the SPEIS. We call your attention to section six, in which we make recommendations for improving protection for the desert tortoise, a bellwether species for the California desert. Finally, we discuss issues raised by the supplement, including pending applications, and provide our recommendations for improving the maps and data that are presented in the SPEIS.

II. The California Desert Conservation Area.

Congress established the CDCA in 1976. See Section 601 of the Federal Land Policy and Management Act (FLPMA), 43 U.S.C. §§ 1701 *et seq*. In enacting this statute, Congress found that "the California desert environment is a total ecosystem that is extremely fragile, easily scarred, and slowly healed" and stated that its "purpose" in designating the CDCA was "to provide for the immediate and future protection and administration of the public lands in the California desert …, and the maintenance of environmental quality." Id., §§ 1781 (a)(2), (b). Congress further directed the preparation of "a comprehensive, long-range plan" for the CDCA with public participation. Id., §§ 1781 (a) (6), (d).

While we recognize that times have changed and additional demands for uses of public lands within the CDCA for renewable energy development have arisen, we nonetheless underscore the importance of FLPMA's provisions for the CDCA, and the importance of the CDCA to our organizations and the millions of Americans who annually utilize and enjoy these lands. Public lands within the CDCA are important for their historical, scenic, archaeological, environmental, biological, cultural, scientific, educational, recreational and economic resources, and there is strong public support for preserving these lands and their multiple resource values. We believe BLM's directed development approach will best help to meet state and federal renewable energy goals while preserving public lands and resources of key importance within the CDCA.

In addition to the provisions of FLPMA for the CDCA, the preferred alternative in the SPEIS and each of the alternatives needs to be consistent with the overall goals and objectives for management of public land resources, including but not limited to wildlife and vegetation, as contained in the CDCA plan, as amended. We emphasize the importance of this requirement by citing the following language from the BLM:

> "[T]he intent of the CDCA Plan is to ensure as nearly as humanly possible that the recognition brought by Congress and the people into law—that the California Desert is not a wasteland but a precious public resource—is effectively guaranteed in its management, that the uses of today do not preclude the users of tomorrow, and that we preserve and develop these assets wisely with full regard for their social and environmental as well as economic values.

CDCA Plan, as amended, p. 7 (1980).

III. The Desert Renewable Energy Conservation Plan and the SPEIS.

We thank the BLM for acknowledging the importance of the DRECP and affirming its commitment to the DRECP process, an issue we raised in our comments on the Draft PEIS. We believe it is critically important that the decisions made in the Final PEIS and the accompanying Record of Decision (ROD) are integrated into the DRECP process and that the BLM commits in the Final PEIS to managing its lands in the California desert consistent with the DRECP as provided in FLPMA.

We especially appreciate BLM's commitment to: "rely on the California DRECP planning effort…to identify new or expanded SEZs" (SPEIS at p. 2-28); "use the DRECP as the foundation for possible amendments to the CDCA Plan and three RMPs" (id. at p. 2-29); and "identify priority areas for renewable energy development (potentially through the identification of additional SEZs) and associated conservation on BLM lands within the DRECP planning area" (id. at p. 2-29). That being said, we recognize and appreciate that the Solar PEIS is a stand-alone document, and that it contains a mechanism to identify new SEZs in the future independent of other planning processes. See, e.g., SPEIS at p. 2-29, Appendix D.

Additional coordination is needed between the BLM and other agencies involved in the DRECP process. Specifically, we believe BLM should take the following actions to ensure improved coordination and consistency between the Solar PEIS and the DRECP:

1. The BLM and the DOI should take steps to ensure that the Final PEIS, ROD and the solar program that is established afford sufficient flexibility to permit compliance with FLPMA's "consistency language," which requires that BLM land use plans "be consistent with State … plans to the maximum extent [the Secretary] finds consistent with the Federal law and the purposes of this Act." 43 U.S.C. § 1712 (c)(9). The ROD signed for the Final PEIS should not pre-empt the DRECP nor preclude conservation on BLM lands that may be identified for such purposes via the DRECP. In other words, DOI and the BLM need to ensure that the PEIS, accompanying ROD and the new solar program are consistent with the mandates of FLPMA, but also that the Bureau retains sufficient flexibility to ensure consistency with recommendations for BLM lands that may be developed via the DRECP.
2. The BLM should specifically list or describe (e.g., via an appendix to the Final PEIS) potential public or combined public-private (i.e., "conjunctive") lands that have been suggested by stakeholders during the PEIS process as having the potential to be designated as additional solar development zones and that could be subject to intensive review and analysis in the DRECP planning process. Examples include the specific areas that have been suggested by our organizations in the Daggett Triangle and Western Mojave areas of California.[5]

   We appreciate that the BLM has already issued a Draft EIS for potential renewable energy development within the West Chocolate Mountains Renewable Energy Evaluation Area (July 1, 2011), an area which was suggested by several of our organizations and others.
3. The BLM indicates that SEZ-specific regional mitigation plans will be developed, and that initial regional mitigation plans will be presented in the Final PEIS. SPEIS at p. 2-24. Development of plans that fall within the DRECP planning area should be coordinated with the other agencies in the Renewable Energy Action Team (REAT), so that the range

[5] See Appendix C to Draft PEIS comments of NRDC, et al.

of feasible mitigation measures across both public and private lands can be identified and analyzed. BLM should clarify in the Final PEIS that it will coordinate with the DRECP planning effort in the development of those plans that affect the DRECP planning area, and that it will manage the public lands within the CDCA consistent with the DRECP to the maximum extent possible under FLPMA.

IV. Proposed Solar Energy Zones.

We appreciate that some of our comments and recommendations on the four proposed SEZs that were presented in the Draft PEIS were incorporated into the SPEIS. In particular, we very much appreciate that both the proposed Pisgah and Iron Mountain SEZs were dropped, although, as discussed below, we believe that the Pisgah SEZ should be completely excluded from solar development, as was Iron Mountain. For each of the remaining two SEZs, Riverside East and Imperial East, we recommend that the BLM include in the Final PEIS a chart that identifies not only the additional land and resource data that are needed to perform necessary analyses but also who is responsible for compiling the data and completing each item listed, and a timetable for completion of the individual tasks. We also request that BLM commit to accepting and responding to comments on the SEZ-specific regional mitigation plans and design guidelines that are presented in the Final PEIS.[6]

Within specific SEZs, we recommend that a tiered mitigation strategy be adopted entailing, in priority order, 1) impact avoidance, 2) impact minimization and 3) compensation for unmitigated impacts through off-site habitat acquisition and enhancement for key species and their habitats. The feasibility of compensatory habitat acquisition and enhancement must be verified so that needed actions can be implemented in a timely and effective manner.

A. Iron Mountain.

We thank the BLM for deleting the proposed Iron Mountain SEZ, and for recognizing concerns about this SEZ that were raised by numerous stakeholders including conservation organizations, solar industry developers, utilities and others. We also thank the BLM for identifying the proposed Iron Mountain SEZ as an "exclusion area" in Table 2.2-1 (SPEIS at p. 2-17). The area's extremely high value wilderness and other resources coupled with the lack of nearby or planned transmission amply justifies this decision. We remain concerned, however, that substantial acreage within the Citizens'-proposed Iron Mountain Wilderness, which partially overlaps the former SEZ, remains open to variance applications; we request that this area be added to the list of exclusion areas. Please see our comments and a map showing the overlap in Appendix A.

B. Pisgah.

We thank the BLM for deleting the proposed Pisgah SEZ. However, we oppose these lands remaining open to variance applications. See SPEIS at B-14. The area contains superlative resources, including:

- Twelve special status species;
- Habitat that provides essential connectivity between the western Mojave, eastern Mojave and northern Colorado deserts;

[6] As well as other sections the BLM says will be presented in the Final PEIS.

- A significant drainage from the Cady Mountains that has not been mapped by the National Wetlands Inventory;
- Lands acquired with private conservation funds and Land and Water Conservation Fund monies (775-1700 acres);
- Desert tortoise habitat and connecting corridors;
- Desert bighorn sheep habitat and potential to disrupt metapopulations and intermountain movements;
- Golden eagle habitat;
- Mojave fringe toed-lizard habitat;
- Rare plants, including white-margined beard tongue (*Penstemon albomarginatus)*, *Androstephium breviflorum* and *Castela emory*.
- Significant cultural sites.

See comments of NRDC at al. on Draft PEIS. The same reasons we advanced in opposition to the designation of these lands as a SEZ support their designation as an exclusion area that is not subject to variance applications.

As previously noted, in our comments on the Draft PEIS we suggested that BLM assess the "Daggett Triangle," three combined public-private land areas totaling more than 16,000 acres located west of the proposed Pisgah SEZ. We request that these areas be specifically identified in the Final PEIS as public and/or combined public-private lands that may be appropriate for further analysis as part of the DRECP as a public/private solar zone.

C. Riverside East.

We thank the BLM for addressing a number of our site-specific concerns within the proposed Riverside East SEZ. BLM has designated "no development" areas for 11,547 acres within the SEZ, including a portion of McCoy Wash, Ford Dry Lake and Palen Dry Lake, and areas previously identified for non-development through site-specific project level NEPA analysis.[7] Additionally, BLM has reduced the size of the SEZ by 43,439 acres, eliminating other areas of concern to our organizations (e.g., Pinto Wash, Upper Chuckwalla Valley). We appreciate these modifications.

Nonetheless, we believe this SEZ will benefit from further fine-tuning, and we have the following recommendations. Some of these issues were raised in our comments on the Draft PEIS; we also bring to your attention several issues that have surfaced since issuance of the Draft PEIS.

Issues Raised in Previous Comments on Draft PEIS, Riverside East SEZ.

1. Connectivity areas for habitat, wildlife and climate change adaptation.

[7] While we welcome these decisions, we believe the public needs more clarity about them. The BLM should provide readily accessible maps that will enable stakeholders to clearly understand which areas have been eliminated from potential development within the Riverside East SEZ. For example, we are confused as to what part of McCoy Wash is proposed for non-development. See detailed comments under Microphyll Woodlands and in section IX.

In our comments on the Draft PEIS, we requested that the BLM identify key connectivity areas to preserve habitat integrity for a variety of wildlife and plant species now and into the future as our planet's climate changes.[8]

Due to the linear nature of the Riverside East SEZ and the potential of solar development in this SEZ to sever connections between the Sonoran and Mojave ecosystems, the BLM must provide landscape level habitat linkages within and across this SEZ (e.g., for desert tortoise, Mojave fringe-toed lizard, desert bighorn sheep, etc). We recommend that such movement corridors be roughly delineated via the process of developing the SEZ-specific design features and the initial regional mitigation plan for the Riverside East SEZ, and that they be further refined at the project-specific level.

The BLM should coordinate the mapping of wildlife and habitat linkages with other agencies via the REAT and the DRECP planning process. In fact, the BLM now has good access to data, the Western Wildlife Crucial Habitat Assessment Tool (CHAT). This initiative should assist the agency and its partners in identifying critical habitat and wildlife linkages, or corridors, which should be protected by the SPEIS and the DRECP. See Instruction Memorandum (IM) No. 2012-039; see also http://www.blm.gov/wo/st/en/info/regulations/Instruction_Memos_and_Bulletins/national_instruction/2012/IM_2012-039.html.

We also are concerned that the SPEIS fails to acknowledge the importance of preserving migratory bird pathways and stopovers on the Pacific Flyway. Migratory birds can be affected by solar development, particularly power towers. The BLM should also work with the REAT to ensure that the appropriate data are collected and migratory bird pathways and stopovers are mapped as promptly as possible and preserved in the future. If sufficient data are not now available, we request that BLM require the gathering of data for migratory bird pathways and stopovers for all site-specific power-tower projects that are proposed within the vicinity of the Riverside East SEZ (including any projects that are proposed outside the SEZ within variance areas nearby). We also request that BLM require strict monitoring and utilize "adaptive management" in its processing and management of power tower proposals throughout the California desert, so that these projects can be adjusted over time as needed to minimize impacts on resident and migratory birds.

The preservation of habitat connectivity is not only important in the Riverside East SEZ, but throughout the California desert. We request that BLM commit to working with other agencies with jurisdiction in the desert to develop a plan for protecting these areas, especially in light of climate change.

2. Sand Transport, sand transport corridors and sand source areas.

[8] A recent scientific paper indicates the importance of maintaining plant species richness in the face of climate change: "Our results suggest that the preservation of plant biodiversity is crucial to buffer negative effects of climate change and desertification in drylands." See Maestre et al, http://in.bgu.ac.il/SiteAssets/Pages/news/Plant_Species_Richness/Science%20Plant%20Species%20Richness%20and%20biodiversity.

The SPEIS has improved the proposed Riverside East SEZ by incorporating "non-development" areas within the SEZ, presumably in part to avoid the critically important sand transport corridors and sand source areas. However, as proposed, the "non-development" areas do not include all areas of the sand transport corridor as identified by several sources. Muhs et al. (2003) specifies a much larger area of Aeolian sand in the SEZ. In 2011, the California Public Utilities Commission undertook additional investigation and identification of the sand transport corridor in this area.[9] In their review, the sand transport corridor is much more extensive, originating in the Pinto Basin of Joshua Tree National Park, the Palen Valley and the Palen/McCoy Valley and extending eastwards to the edge of the agricultural development in the Palo Verde Valley south of Interstate 10.

The BLM should exclude additional contiguous areas of the sand transport corridor and sand source areas, via the SEZ-specific regional mitigation plan and/or in the SEZ-specific design features, for a number of reasons. First, disruption of sand transport corridor functionality near corridor sources affects all downwind resources. Secondly, sand dune habitat is a rare resource on the landscape and because the geological and geographical features that transport sand and form dunes are extremely limited, the species that have evolved to rely on this unique habitat are also quite rare and typically endemic only to dune systems. Because of the uniqueness of the Aeolian habitat, impacts to sand transport systems are therefore comparatively greater than to other habitat types. Impacts are also much more challenging to mitigate because of the limited habitat type and complex Aeolian requirements that form and maintain the sand transport and dune habitat. Lastly, any facility put in or even adjacent to a sand transport corridor will suffer significant impacts from sand abrasion and require regular clearing of sand from the structures, increasing maintenance and operational costs.[10]

The final program needs to ensure the consistent conservation of sand transport corridors and sand dune areas across the region, and not just in the Riverside East SEZ. Several additional corridors and dune systems have been identified within the CDCA.[11] As previously stated in our comments on the Draft PEIS, models have also been developed to identify conservation areas that are essential to maintain sand transport corridors.[12] These data and models should be incorporated into the analysis and key areas that maintain the Aeolian function of the sand transport corridors should be included as BLM-administered lands not available for solar development.

3. Microphyll woodlands.

We appreciate that the BLM appears to have identified a portion of McCoy Wash, containing important microphyll woodland habitat, as a "non-development area" within the Riverside East SEZ. However, the BLM also appears to have left a substantial amount of acreage of this important habitat type potentially open to development, an action that could place this key ecosystem at risk. [13] In numerous conversations our organizations have had with BLM staff, they

[9] See ESA-PSW 2011 www.cpuc.**ca**.gov/environment/info/aspen/dpv2/sfeir/apps/ap3.pdf
[10] The lifespan of these projects also will likely be decreased.
[11] See Muhs 2003
[12] See, e.g., Barrows 1996
[13] For example, the red line on the map on p. C-59 that we presume indicates McCoy Wash does not appear to adequately protect the microphyll woodlands in McCoy Wash. See section IX below.

have expressed the belief that, given the extensive acreage of this habitat type included in the Right of Way issued for the Blythe solar energy project, no additional loss of microphyll woodland habitat should be permitted. We request that additional microphyll woodland habitat within the Riverside East SEZ be identified for non-development via SEZ-specific design features and/or the SEZ-specific regional mitigation plan for Riverside East. BLM carefully mapped this habitat type ("Desert Dry Wash Woodland") as part of the Northern and Eastern Colorado Desert (NECO) Management Plan (2002). See NECO Plan, Map 3-3. These mapping data should be used as the foundation for identifying additional microphyll woodlands for non-development within the SEZ, through SEZ-specific design features and/or the regional mitigation plan for the Riverside East SEZ.

Issues Raised Since Release of Draft PEIS, Riverside East SEZ.

Since the Draft PEIS was released, several issues have arisen that the supplement has not analyzed. These issues should be addressed in the Final PEIS, subsequent management plan amendments, the regional mitigation plan, through SEZ-specific design features and/or at the project-specific level.

1. Lands with wilderness characteristics.

Since the Draft PEIS was issued, BLM conducted an inventory of "Lands with Wilderness Characteristics" (LWC) pursuant to Section 201 of FLPMA and IM 2011-154. The results of this inventory in the Riverside East SEZ are presented in the SPEIS at p. C-60. The inventory identified 11,925 acres of LWC, approximately 7,175 acres (60%) within the Riverside East SEZ (approximately 40% of the LWC lie just outside and west of the Riverside East SEZ). Large-scale solar energy development and the preservation of LWC are inherently incompatible, and we request that the LWC identified within this SEZ be removed from the SEZ or identified as a "non-development" zone within the SEZ.[14]

The LWC identified by the BLM that are within the Riverside East SEZ overlap with other areas of importance that we have previously argued should not be developed. These include dissected (alluvial) fan habitat important to desert tortoise,[15] and microphyll woodland habitat which has not been adequately protected by the delineation of McCoy Wash. It should also be noted that the LWC identified on the map on page C-60 of the SPEIS appear to overlap closely with the microphyll woodland habitat that is located in the western portion of the proposed McCoy Solar project.

The LWC outside the SEZ are also adjacent to the Palen-McCoy wilderness, and are proposed as a variance area. We request that the LWC identified outside the Riverside East SEZ be added to the list of exclusion areas. The BLM should recommend these lands as an addition to the designated wilderness and manage them in the interim to protect their wilderness characteristics. The fact that these lands are located in a major wash makes them a poor potential site for solar development. The area is also home to several sensitive species, including California leaf-nosed bat, desert tortoise, California McCoy snail, Harwood's milk-vetch and Las Animas colubrina.

[14] If this does not happen, then the BLM should devise mitigation at the project-specific level to mitigate for the loss of wilderness characteristics.
[15] See discussion below.

2. Dissected fans.

Since the Draft PEIS was issued, three projects have been approved within the proposed Riverside East SEZ.[16] During the processing of each of these project applications, the U.S. Fish and Wildlife Service identified "dissected fans" as important habitat for the Threatened desert tortoise. The following language is from the Fish and Wildlife Service's Biological Opinion on the Desert Sunlight project:

> We recommend that the BLM amend the CDCA Plan to prohibit additional renewable energy development (i.e., utility-scale solar and wind energy facilities) within the upper bajadas (mapped as "dissected fans" on the Landforms Map 3-4 in BLM 2002) adjacent to the mountains of northeastern Riverside County. This recommendation is intended to protect the higher quality desert tortoise habitats in the recovery unit.

Desert Sunlight Biological Opinion; 7/6/2011. See http://www.blm.gov/pgdata/etc/medialib/blm/ca/pdf/palmsprings/desert_sunlight.Par.83759.File.dat/Desert%20Sunlight%20BO.pdf. There is similar language in the Biological Opinions for the other projects.

Due to the importance of preserving dissected fans for desert tortoise, we recommend that the BLM identify and map the dissected fans and include measures to avoid development in these habitats in the forthcoming design features, regional mitigation plans and site-specific project level analyses.

3. Visual Resource Management Class II & III height limits.

The BLM has proposed ten foot height limits on solar infrastructure within the Riverside East SEZ, consistent with criteria for Visual Resource Management (VRM) Class II & III lands; these are proposed as "visual resource mitigation requirements." SPEIS at p. C-58-59. While we appreciate the BLM's acknowledgement of the visual impacts of large scale solar development, we are concerned about the fact that the proposed limitations on development within the SEZ for visual reasons will effectively limit the technology that can be utilized in these areas. Of greater concern, these limits also put increased pressure on the BLM to allow development in areas outside the SEZ, e.g., in variance areas. Most importantly, the proposed limits significantly reduce the acreage of the proposed SEZ. If further reductions in the size of the Riverside East SEZ are going to occur, we strongly prefer they be for biological or cultural reasons, e.g., designated wildlife movement corridors, desert tortoise habitat connectivity areas, etc., rather than to minimize visual impacts. Large scale solar developments inherently have significant visual impacts, and such impacts need to be accepted as part and parcel of such development.[17]

D. Imperial East

The BLM should adopt SEZ-specific design features for the proposed Imperial East SEZ to help mitigate for impacts to the flat-tailed horned lizard consistent with the rangewide management

[16] I.e., Desert Sunlight, Blythe and Genesis solar projects.

[17] We do believe that visual impacts can and should be mitigated via the development of site-specific design features and mitigation measures identified in the initial regional mitigation plan for the Riverside East SEZ; both the design features and the regional mitigation measures should be included in the Final PEIS. Site-specific visual impacts should also be mitigated on a project-level basis.

strategy for the Flat-tailed horned lizard, and with the management goals and objectives for the East Mesa Wildlife Habitat Management Area. Protections for the flat-tailed horned lizard should also be incorporated into the initial regional mitigation plan for this SEZ.

We appreciate that the BLM has designated five acres of wetlands within this SEZ as a non-development area.

V. Exclusion Areas.

We appreciate that the BLM has made modifications to the list of exclusion areas originally proposed, i.e., those areas that will not be subject to variance applications. See Table 2.2-1 (SPEIS at p. 2-16). We are particularly pleased that the following areas were added to the list of exclusion zones:

- Lands within Mojave Trails National Monument, including proposed wilderness areas;
- Lands encompassed by the (withdrawn) Iron Mountain SEZ;
- Non-development lands identified in EISs for already approved solar energy projects (e.g., Genesis, Blythe and Desert Sunlight);
- Lands proposed for transfer to the National Park Service.

We believe that the following lands and land use categories identified immediately below should also be added to the list of exclusion areas. These areas were identified as candidates for exclusion in our previous comments.[18] We also recommend desert tortoise proposed connectivity areas for exclusion; see section VI.

1. Citizens Wilderness Proposals.

While we appreciate that citizens' proposed wilderness within the proposed Mojave Trails National Monument and proposed additions to Death Valley National Park wilderness were excluded, parts of four citizens'-inventoried proposed wilderness areas[19] remain open to variance applications: Bighorn Mountain, Iron Mountain, Palen-McCoy and Volcanic Tablelands. Additionally, lands proposed for variance applications overlap with 20,600 acres of the Vinagre Wash Special Management Area in Senator Feinstein's California Desert Protection Act legislation (2011) and with acreage in the McCoy Wash area that contains LWC as identified by the BLM, which we discuss above. Please see Appendix A to these comments for a detailed description of these areas provided by the California Wilderness Coalition and our reasons why they should be excluded from development.

2. Wildlife Habitat Management Areas.

Wildlife Habitat Management Areas (WHMAs) were established by the BLM in its management plan for the CDCA, and subsequent amendments to the plan, each of which was subject to extensive public participation. See, e.g., Northern and Eastern Colorado Plan Amendment, 2002; West Mojave Plan Amendments, 2006; CDCA Plan Amendments, 1981-1990. According to the wildlife element of the CDCA Plan, WHMAs and their associated site-specific plans are one of

[18] For more detail on these and other proposed exclusion areas see our comments on the Draft PEIS.
[19] The inventory of these public lands as potential wilderness areas was coordinated by the California Wilderness Coalition. Bighorn, Iron Mountain and Volcanic Tablelands were inventoried between 1998-2001; Palen-McCoy in 2006.

two primary management tools designed to achieve the objective of the CDCA to protect wildlife habitat important to a suite of species. As we have previously requested, the BLM should include WHMAs as a new category of exclusion areas or under criteria #8. See SPEIS at p. 2-16.[20]

Because proposed development in WHMAs is bound to be controversial,[21] designating the WHMAs as exclusion areas will save BLM and developers time and money, and avoid costly delays.

3. Golden Eagle habitat.

In our comments on the Draft PEIS, we asked that the BLM take special care to protect Golden Eagle, a fully protected species under the Bald and Golden Eagle Protection Act of 1940. The SPEIS, however, does not acknowledge the importance of Golden Eagle.

Specific lands important to Golden Eagle as nesting territories and associated foraging habitats should be excluded from variance applications. These lands include the WHMAs, as mentioned above (some are of particular importance to Golden Eagle), and additional lands as appropriate that have been designated by the BLM as "Key Raptor Areas" and which are within proposed variance areas.

4. Ivanpah Valley Public Lands.

The Ivanpah Valley is a unique valley spanning the state line between California and Nevada. Because of this political boundary, impacts to biological resources from renewable energy developments in different parts of the same valley are evaluated by different states. The Ivanpah Valley is important because it is home to a dense population of the federally threatened desert tortoise as well as rare plant communities. A small portion of the valley in California is designated as a desert tortoise Area of Critical Environmental Concern (ACEC) under the Northern and Eastern Mojave Plan. A portion of federally designated critical habitat is also identified in the southeastern part of the valley.

Surveys on both sides of the state line indicate an extant, robust population of desert tortoise. In fact, the U.S. Fish and Wildlife Service's (FWS) October 10, 2010 Biological Opinion on the Ivanpah Solar Electric Generating Station (ISEGS), which is located in the southwestern part of the valley, states at p. 63: "We recommend that the Bureau amend the California Desert Conservation Area Plan to prohibit large-scale development (e.g., solar energy facilities, wind

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[20] In Table 2.2-1, BLM has already identified as exclusion areas

> "All areas where…*BLM has made a commitment to take certain actions* with respect to sensitive species habitat..."

(Emphasis ours.) The BLM should clarify in the Final PEIS specifically which "certain actions" are meant to be included in this category of exclusion areas.

[21] As our experience with the Desert Sunlight Project attests: the fact that a WHMA was located within the proposed project area required additional time to resolve this project with the company. Other projects proposed or permitted that overlapped to varying degrees with WHMAs include the Palen Solar Power Project and Genesis Solar Energy Project.

development, etc.) within the area bounded by Interstate 15, the State line, and Clark Mountains." This recommendation was limited to the land on the California side of the border, because the local office of the consulting agencies' jurisdiction was in California.

As the BLM is well aware, the ISEGS project quickly reached its "take" limit of desert tortoises and had to re-initiate consultation with the Service, which resulted in a new Biological Opinion on June 10, 2011. In the new Biological Opinion, the FWS expanded its recommendation to include the whole of the Ivanpah Valley, stating "We recommend that the Bureau amend the necessary land use plans to prohibit large-scale development (e.g., solar energy facilities, wind development, etc.) within all remaining portions of the Ivanpah Valley to reduce fragmentation within the critical linkage between the Ivanpah Critical Habitat Unit and the Eldorado Critical Habitat Unit." (at pg. 92-93). This new recommendation recognizes that the whole valley is important to the survival of this population of desert tortoise, and that the linkage between the Ivanpah Critical Habitat Unit, which is in California, and the Eldorado Critical Habitat Unit, which is in Nevada, must be kept intact.[22] In line with the direction already identified by the FWS, BLM-administered lands within the Ivanpah Valley should be included as an exclusion area not available for further solar development.

Although BLM is undertaking a new cumulative effects analysis for a portion of the Ivanpah Valley (and which does not include much of the valley in Nevada), it has not finished the analysis. Nor has the BLM developed either a comprehensive bi-state assessment or a long-term management plan for this important valley. Meanwhile, the entire Ivanpah Valley has been nominated as an ACEC, in order to provide further safeguards for the desert tortoise in this important valley as well as a suite of very rare plants and significant cultural values present there. To avoid further degradation of the valley, we urge that it be excluded from solar development.

5. Lands Acquired for Conservation.

As previously noted in our comments on the Draft PEIS, the BLM should exclude lands that were purchased with Land and Water Conservation Funds and donated to BLM for conservation purposes from being subject to variance applications.

VI. Desert Tortoise.

The desert tortoise is a bellwether species for the Mojave and Sonoran desert ecosystems. Listed as a federal threatened species by the FWS in 1990, desert tortoise numbers remain low in spite of ongoing recovery efforts, and this animal remains in an imperiled state. Since renewable energy development has the potential to significantly and irreversibly affect desert tortoise populations and the ability of this iconic species to recover, it is essential that the DOI adopt standards for solar energy development in the Final PEIS that will provide for the recovery of desert tortoise populations and the species as a whole. These standards should include: 1) the protection of key habitat for the desert tortoise, including occupied and unoccupied but

[22] See also Hagerty, B.E., K.E. Nussear, T.C. Esque, and C.R. Tracy. 2010. Making molehills out of mountains: landscape genetics of the Mojave desert tortoise. Landscape Ecology. DOI 10.1007/s10980-010-9550-6.

suitable habitat, and 2) the protection of key connectivity habitats and linkages for the desert tortoise.

We recommend that the United States Geological Survey (USGS) desert tortoise habitat suitability model[23] and desert tortoise density be used to provide interim criteria for areas where variance applications will be accepted but also recognize that development of a more detailed model is needed to guide conservation of the species at the appropriate scale required for solar project siting. The USGS desert tortoise habitat suitability model was intended to provide guidance for conservation planning at the range-wide scale, and represents the most comprehensive effort to define suitable habitat for the species to date. The one kilometer cell size used for this analysis and the emphasis on topographical, soil, and meteorological data as predictors make the model useful for predicting at the landscape-scale, but they do not provide the needed precision for analyses at the sub-regional scale or at the solar project sitting level. Until additional refinement of a habitat model is completed by FWS, the following criteria should be met:

For applications in variance areas that are within the range of desert tortoise but outside of proposed connectivity areas, (as modified by our recommendations in these comments), the applicant must provide documentation of the following:

- Project area has less than or equal to 2 tortoises (>160 mm Midline Carapace Length) per square mile; and
- Where Habitat Potential Index Value is 0.7 or greater, verification that the habitat condition is "highly converted."[24] This verification should be provided through application of science-based models of land conditions through field inspection.

Our recommended criterion of two adult desert tortoises per square mile is based on current range-wide density estimates within recovery units that range from three to 36 per square mile.[25]

The predicted habitat suitability rating of 0.7 and above (on a scale of 0 to 1.0) is significant because 95% of the lands with a rating of greater than 0.7 in the USGS habitat suitability model also had confirmed presence of desert tortoises based on field survey data. This habitat model, based on 10 environmental factors that included soils, vegetation, precipitation, elevation, and topography, is a sufficiently robust, science-based model, for interim land use planning and conservation planning for the Desert tortoise and its habitat, but further refinements are needed to make habitat suitability predictions more accurate and precise, both to protect important habitat as well as to ensure that areas not important for the species are not mis-identified.

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[23] Nussear, K.E., T.C. Esque, R.D. Inman, L. Gass, K.A. Thomas, C.S.A. Wallace, J.B. Blainey, D.M. Miller, and R.H. Webb. 2009. Modeling habitat of the desert tortoise (*Gopherus agassizii*) in the Mojave and parts of the Sonoran Deserts of California, Nevada, Utah, and Arizona: U.S. Geological Survey Open-File Report 2009-1102, 18 p.

[24] "Highly converted" refers to urban, suburban and agricultural lands that are heavily altered. While some can support conservation targets, their ecological context is highly compromised.

[25] U.S. Fish and Wildlife Service. 2010. DRAFT Range-wide Monitoring of the Mojave Population of the Desert Tortoise: 2010 Annual Report. Report by the Desert Tortoise Recovery Office, U.S. Fish and Wildlife Service, Reno, Nevada. 49 pp.

Pursuing a model at finer scales would require the use of variables that directly or indirectly assess the resources used by tortoises when selecting habitat, such as the presence of plants used for forage, vegetation diversity, density of annuals vs. perennials, and so on. In addition, habitat connectivity analyses must be integrated with habitat suitability analyses in order to ensure that the focus is on preserving suitable and occupied habitat that is connected with other population areas as well as to ensure these connectivity areas themselves are preserved to provide meta-population persistence.

The USGS desert tortoise habitat suitability model does not account for urban development, habitat destruction/fragmentation, or natural disturbances that have lowered habitat quality in recent years. Thus, we recommend using The Nature Conservancy's (TNC's) Mojave Desert Ecoregional Assessment[26] and the Conservation Biology Institute's Framework for Effective Conservation Management of the Sonoran Desert in California[27] to exclude these lands as having little or no habitat or conservation value. We recognize that it may be necessary to verify the habitat condition through field inspection and to accurately assess the adult desert tortoise density. We also recognize that modeling of suitable desert tortoise habitat needs to be refined through further field study and analysis, and that updated models should be developed soon and applied to our recommended criteria in variance areas as they become available.

Successful recovery of the desert tortoise requires that existing populations and their higher rated habitats are protected from deleterious human impacts. If recovery actions are successful to the point of promoting population increases, lands included in our recommended Modified Option 2 where solar energy development would be inappropriate could be the very areas into which newly recruited tortoises would need to move in response to climate change or simply expand their population in response to successful recovery efforts.

Preserving connectivity between desert tortoise conservation areas is vital to promoting gene flow and maintaining and enhancing desert tortoise populations. Connectivity can only be preserved by maintaining intact landscape-level habitat, so it is critical that connectivity areas be conserved and protected.

We therefore strongly recommend that connectivity areas be excluded from development. We also recommend that the BLM's proposed connectivity habitats shown on Figure 2.2-2 (SPEIS at p. 2-36) be replaced with the connectivity (or "linkage") habitats recommended by the FWS in its comments on the Draft PEIS. See comments of U.S. Fish and Wildlife Service, Draft PEIS, May 6, 2011, Figure B-2. It is important to understand that agency's recommendations identified lands to be included in a "*…minimum linkage design necessary for the conservation and recovery*

[26] Randall, J. M., S.S. Parker, J. Moore, B. Cohen, L. Crane, B. Christian, D. Cameron, J. MacKenzie, K. Klausmeyer and S. Morrison. 2010. Mojave Desert Ecoregional Assessment. Unpublished Report. The Nature Conservancy, San Francisco, California. 106 pages + appendices. Available at: http://conserveonline.org/workspaces/mojave/documents/mojave-desert-ecoregional-2010/@@view.html.

[27] Conservation Biology Institute. 2009. A Framework for Effective Conservation Management of the Sonoran Desert in California. Prepared for The Nature Conservancy. 78 pp. + appendices.

of the Mojave population of the desert tortoise…" (FWS DPEIS comments, Figure B-2. Emphasis ours.

VII. Issues Raised by the Supplement.

A. Prioritization of Areas for additional data/analysis collection (via Action Plans).

The BLM notes at p. 2-41 of the SPEIS that it will "prioritize the collection of additional data and analysis (listed in the Action Plans in Appendix C of the SPEIS) in those SEZs that are most likely to be developed in the near future." We request that the BLM prioritize the Riverside East SEZ for such action. As the agency is well aware, there are additional projects presently being considered in this SEZ (see Appendix A of the SPEIS). The timely completion of additional analysis for this SEZ will facilitate development in the locations that are best suited for such intensive use in the fragile desert.

We also believe that an initial regional mitigation plan should be developed for the Riverside East SEZ and presented in the Final PEIS. Due to the number of SEZ-specific issues that need to be mitigated, early development of a regional mitigation plan for the Riverside East SEZ will ensure that projects are processed in a timely manner.

B. Pending Applications – CA projects.

Our organizations have reviewed the so-called "first in line" projects for California that are listed in Appendix A of the SPEIS. We believe the list for California needs to be revised.

Certain developers have gone through the permit review process, have ended up with rights of way and have proceeded not to develop approved projects (e.g., Blythe Solar Project, Imperial Valley Solar Project). This is an unconscionable waste of the BLM's time and taxpayer dollars. In order to prevent this situation from occurring in the future, the BLM needs to do two things: First, the BLM needs to tighten up its diligence requirements and weed out the companies that are not serious or capable of developing projects. Second, since the BLM is going to rely on IM 2011-060 and IM 2011-061 issued in February 2011 to process applications on this list, we would like to help the BLM prioritize the pending projects, using the criteria in the IM and our deep and widespread knowledge of the environment, to ensure that the projects BLM processes first are truly those that are the least problematic. For the projects that are problematic, sufficient time should be allotted for other development options to be found (e.g., suitable locations within SEZs or on degraded private lands) so that these projects are not processed or permitted in the original locations proposed.

As an example of what we consider a "problematic" project, we question why Broadwell Lake is still on BLM's list of first in line projects. The proposed project is within the proposed Mojave Trails National Monument, which is a proposed exclusion area. We believe this project should be rejected by BLM and removed from the list.

We also believe that the BLM should not approve projects in the California desert that are inconsistent with the developing conservation strategy within the DRECP planning area.

VIII. Cumulative Impacts.

Our organizations were disappointed not to see any further analysis of cumulative impacts in the SPEIS, either for the revised solar development program (including the variance areas), or for past, present and reasonably foreseeable development within the Riverside East and Imperial East SEZs. The BLM intends to defer these analyses to the Final PEIS. See, e.g., SPEIS at 2-80. We hope and expect to see a complete analysis of cumulative impacts in the Final PEIS, and look forward to providing comment on it.

IX. Mapping and Biological Information.

We appreciate the effort to provide spatial data via the SPEIS website to the public for further review and analysis of the information contained in the Draft PEIS and the Supplement. Where there is additional spatial data desired that is not included in the downloadable zip files, we request that the BLM develop a system to provide that information to the public. For those who do not have GIS capabilities, we request that the BLM publish more clearly defined maps of both the proposed SEZs and proposed variance areas in the Final PEIS.

The maps provided in the Supplement are inadequate as illustrated by the following three examples. First, there is no map provided of the proposed variance areas listed in Table 2.2-1. While the website contains a map of proposed variance areas,[28] it is at a coarse scale and it is difficult to tell exactly where the variance areas are located. Secondly, in the Riverside East SEZ, what we believe to be McCoy Wash is indicated by a red line but it is not listed as such nor is the width of the exclusion area for that particular area specified anywhere in the document or on the maps. See SPEIS at p. C-59. A further reconnaissance of this non-developable area near the McCoy Wash revealed that it was a less than one quarter mile-wide corridor running through the McCoy wash and microphyll woodland system that is actually greater than one mile wide. Lastly, the desert tortoise connectivity corridors map on p. 2-36 contains no citations or explanation of the data used to generate the map.

These and other problems with the presentation of maps and data[29] need to be remedied as soon as possible so that stakeholders understand what is being proposed and the potential impacts of the proposed action on the environment. We recommend that revised maps and relevant data be made available for public review as soon as possible via the website, and that they be included in the Final PEIS.

X. Conclusion.

We thank the DOI and the BLM for proposing an approach to solar energy development on public lands in California that will direct appropriate large-scale solar energy development needed to help alleviate the effects of climate change to specific locations that can best accommodate such development, ensure the timely development of projects and help ensure that the natural and cultural resources of the California desert are protected for future generations. We respectfully request that you incorporate our proposed modifications to

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28 http://solareis.anl.gov/documents/supp/maps/alternatives/Solar_Supplement_CA_Statewide_Poster.pdf

29 E.g., we recommend that the data used to develop the desert tortoise variance recommendations on pp. 2-36 – 2-37 be made available as soon as possible and be included as an appendix to the Final PEIS.

ensure that projects are limited to the most appropriate locations in order to avoid permanent damage to the very fragile web of life in the California deserts.

Sincerely,

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Attachments:

Appendix A: Proposed wilderness areas and Special Management Area that should not be included in variance zones.

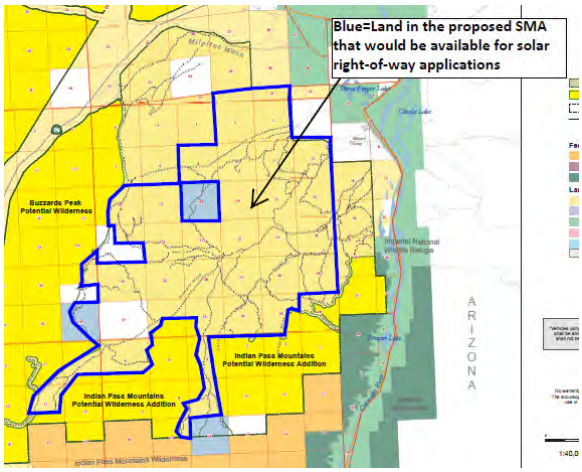
APPENDIX A

Proposed wilderness areas and other lands that should not be included in variance zones

Prepared by California Wilderness Coalition

The Proposed Vinagre Wash Special Management Area

Approximately 20,600 acres of the Vinagre Wash Special Management Area (SMA) that is proposed in Senator Dianne Feinstein's California Desert Protection Act of 2011 (S. 138) is zoned as a proposed variance area under the Modified Program Alternative in the SPEIS.

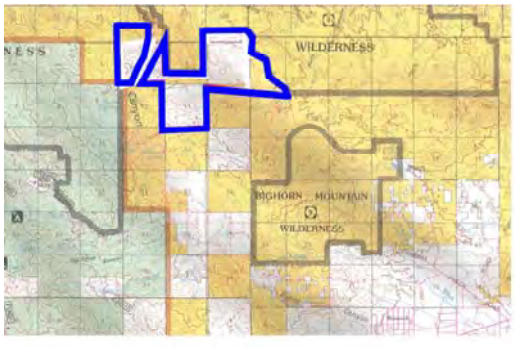


The proposed SMA should be excluded from the variance area because it is composed of extremely rugged, rolling terrain that is inappropriate for solar development and the portions that are relatively flat are in large washes that experience violent flash floods. In addition, the area is used by the US Navy for training purposes, it is popular for family recreation, it is adjacent to the Indian Pass Wilderness and lands that are proposed as potential wilderness in S. 138, it contains many important Native American cultural sites and it is known for its great ecological diversity and importance (for example, it includes one of the few Gila woodpecker populations to be found in California and the largest Sonoran desert woodland in North America). Lastly, many former private lands in the area were once owned by the Catellus Corporation and they were donated to the BLM with the specific understanding that they would be managed for conservation purposes.

Bighorn Mountain Proposed Wilderness Addition

There are several small parcels of proposed variance areas scattered across approximately 1,620 acres of this proposed wilderness addition.

We request that the proposed wilderness addition be excluded from the variance zone because this rugged, boulder-strewn landscape dotted with yucca, pinyon pines, Joshua trees and occassional Jeffrey pines is quite mountainous and is therefore completely inappropriate for solar development. The area is also too ecologically sensitive for it to be developed, since it is an important transition zone and wildlife migration corridor between the Mojave Desert and the San Bernardino Mountains. Mule deer, mountain lion, bobcat, golden eagles, Nelson's bighorn sheep and the southern rubber boa all call the area home.

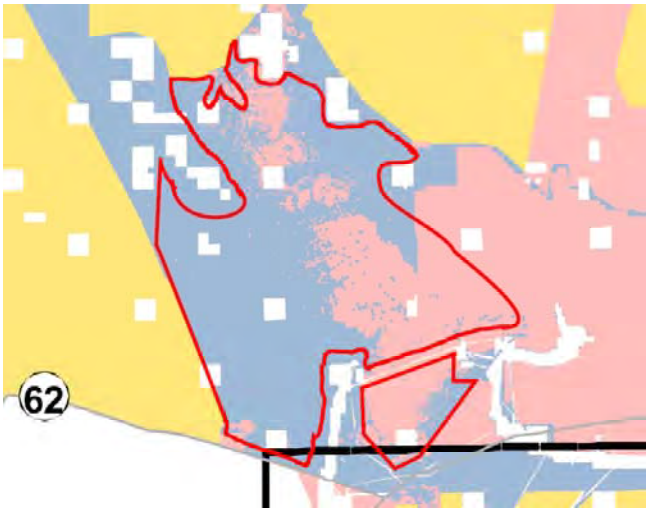


Bighorn Mountain Additions

The proposed addition was included in Senator Barbara Boxer's, Representative Hilda Solis' and Representative Mike Thompson's California Wild Heritage Act in the 107th-110th Congresses and it is possible that it could be included in future legislation as well.

Iron Mountain Proposed Wilderness

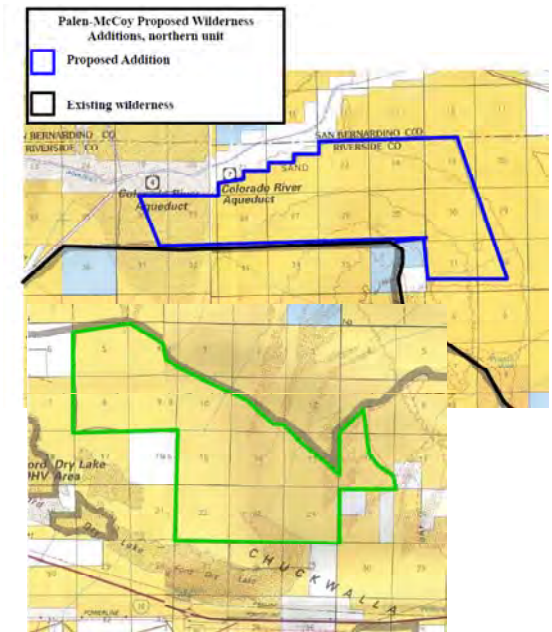
At roughly 120,000 acres, Iron Mountain is the largest remaining unprotected roadless area in California. The region is composed of the extremely rugged Iron Mountains, the Kilbeck Hills, sweeping bajadas, "perched" sand dunes (unusual dunes that are located atop cliffs) and playas. As is shown on the map at left, there is substantial acreage of proposed variance areas scattered across the majority of this proposed wilderness.



We request that the proposed wilderness addition be excluded from the from the variance zone because the region is a critical habitat corridor between the Old Woman Mountains Wilderness and the Sheephole Wilderness for Nelson's bighorn sheep. Other sensitive species known to live in the area include desert tortoise, Alverson's foxtail cactus, Harwood's eriastrum, small-flowered androstephium, Mojave fringe-toed lizard, prairie falcon and hepatic tanager. In the years ahead the importance of the proposed wilderness as both a corridor and as core habitat will continue to grow as lands to the south and east of Iron Mountain may be developed. Much of the proposed variance area between the Kilbeck Hills and the Iron Mountains currently consists of vast sand dunes that are also inappropriate sites for development because of the ecological importance shifting sands play in the Mojave Desert's ecosystem.

Palen-McCoy Proposed Wilderness Additions

The Palen-McCoy Wilderness contains immense valleys and four steep mountain ranges. It also includes bajadas, salt flats, washes, dunes and in some ways it is a microcosm of the Mojave Desert. While working on what became the Omnibus Public Land Management Act of 2009, staff of the CWC identified four wilderness-quality areas that could be added to the adjacent existing wilderness, two of which were added by Congress and two that were not.

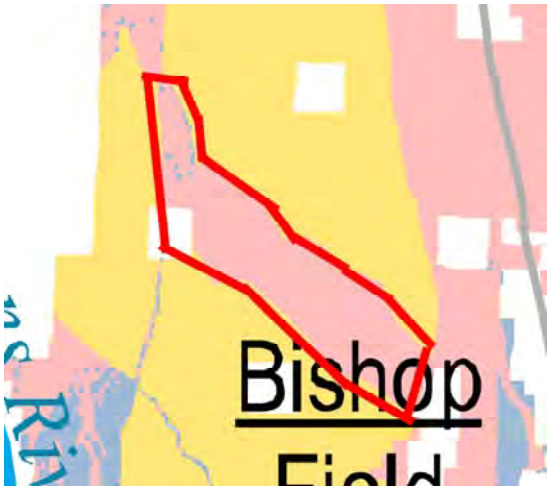


One of the remaining areas that has not yet been protected as wilderness is on the north (approximately 7,000 acres) and the other is on the south

(approximately 11,000 acres). These areas are home to Bendire's thrasher, California leaf-nosed bat, California McCoy snail, desert tortoise, hepatic tanager, Le Conte's thrasher, Mojave fringe-toed lizard, Nelson's bighorn sheep, pallid bat, and prairie falcon. The region's midland ironwood forest is the largest such ecosystem in the California desert.

The existing wilderness and the adjacent roadless land together comprise one of the largest remaining wild areas in southeastern California. Four mountain ranges, dunes, gigantic washes, large bajadas and other landforms come together in the region and help explain its diverse wildlife and plant habitat. These two areas should be excluded from the possibility of development.

Volcanic Tablelands Proposed Wilderness. The Volcanic Tablelands rise several hundred feet above the floor of the Owens Valley. The landscape is rugged and is comprised of hard volcanic tuff, which is highly uneven in its topography. The Volcanic Tablelands also contain extensive cultural resources including village sites, renowned petroglyphs and other archaeological resources. There are four BLM wilderness study areas (WSAs) on the Volcanic Tablelands (Fish Slough, Volcanic Tableland, Chidago Canyon and Casa Diablo), and the Citizens' Wilderness Proposal acreage for this area abuts all but Volcanic Tablelands as is shown at left. Not only does the region contain superlative resources, the variance lands identified are unfit for siting of large-scale solar development projects due to their topography and also their small size (77 acres). For these reasons, the lands should be excluded from consideration for variance applications. Remaining non-citizens' wilderness inventory lands in the vicinity of the Volcanic Tablelands should also be excluded for the same reasons.



Thank you for your comment, Leslie Barrett.

The comment tracking number that has been assigned to your comment is SEDDsupp20107.

Comment Date: January 27, 2012 10:55:56AM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20107

First Name: Leslie
Middle Initial: J
Last Name: Barrett
Organization: Celtic Energy Corporation
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Address 2:
Address 3:
City: Santa Monica
State: CA
Zip: 90401
Country: USA
Privacy Preference: Don't withhold name or address from public record
Attachment: PEIS Variance Request.pdf

Comment Submitted:

CELTIC ENERGY CORPORATION

1507 SEVENTH STREET, SUITE 540
SANTA MONICA, CA 90401

January 26, 2012

Solar Energy Draft PEIS
Argonne National Laboratory
9700 South Cass Avenue
EVS/240
Argonne, IL 60439

Comments on the Supplement to the Draft Solar PEIS

Dear Agencies:

Celtic Energy Corporation ("CEC") is a developer of renewable solar and wind energy projects. CEC and its partners currently have over 12 utility-scale renewable energy projects in three four western states with over 2,000 MW under development. In California, this development includes four major wind energy projects on Bureau of Land Management ("BLM") managed lands. California represents a strategic and important focus for CEC's development portfolio.

CEC also supports the efforts of the Department of Energy ("DOE"), the BLM and all the co-operating agencies in supporting the goal for the responsible development of renewable energy in the western United States. CEC shares this objective through sensible siting and conscientious development.

When reviewing any development proposal, CEC takes great care in identifying and analyzing prospective site characteristics. CEC evaluates its compatibility with surrounding land uses and whether residual impacts to the environment are minimized. After much detailed analysis, CEC believes that it has found such a potential solar development site. This site is unique in that it retains excellent solar resources, has likely mitigatible environmental impacts, is on land largely previous disturbed, is adjacent to transmission rights-of-way, substations and other solar developments, and has little other apparent public use.

We have reviewed the proposed Solar Development Area Maps and find that this excellent potential solar development site has not yet been specifically identified. The site is; however,

partially within areas identified as a proposed Variance area. The characteristics of the proposed solar development site are as follows:

- Project Name – Mojave Diamonds
- Land Owner – United States Department of the Interior, managed by the BLM
- Acreage – 6000 acres approx.
- Location – County of Kern, California (10 miles north of the community of Mojave)
- Address – West of State Route 14 between Randsburg Cutoff and Pine Tree Canyon
- Sections – T31S R36E, Sec. 24, 26 and 34; T31S R361/2E, Sec. 12, 13, 24, 25 and 36; T32S R35E, Sec. 24 and 26n2; and T32S R36E, Sec. 4, 8, 10e2, 12sw, 14ne, 18 and 22w2nw,swnw,news,nese
- APN's – Various
- Map – See enclosed

CEC appreciates that given the project acreage, this site may not be suitable as an independent Solar Energy Zone; however, we believe that portion of the proposed site currently designated as a variance area should be extended to the whole site.

Additional supporting factors include:

- The surrounding area is a hub for existing and permitted solar and wind electricity generation
    - Los Angeles Department of Water & Power ("LADWP") Barren Ridge Substation is at the northern boundary
    - Southern California Edison ("SCE") recently constructed Windhub Substation and proposed Highwind Substation are within seven miles of the project boundary
    - LADWP's proposed 230kV Transmission Line crosses the Mojave Diamonds Project site boundary (anticipated construction date of 2014)
    - LADWP's existing 230kV Transmission Line is proposed to be upgraded through the Mojave Diamonds project site
    - BLM Classification – Limited with Type II Application accepted

- There are numerous other major solar projects planned on adjacent lands
    - 100MW Cal City Solar, east of Mojave Diamonds Project site
    - 96MW Barren Ridge Solar, northeast of Mojave Diamonds Project site
    - 18MW Nautilus Solar Energy, Cantil Site, northeast of Mojave Diamonds Project
    - 100MW RE Distributed Project, adjacent easterly.
    - 38MW Ridge Rider Solar, northeast of Mojave Diamonds Project site

- In order to accommodate the flexibility described in the program objectives, the modified program alternative allows for utility-scale development in variance areas outside of the Solar Energy Zones and exclusion areas in accordance with a proposed variance ordinance. As the draft Solar PEIS document indicates, there are twenty-nine categories of lands that would be excluded from solar development. None of these categories are found at the proposed Mojave Diamonds Solar Project site. Moreover, the site is:
    - Project to accommodate a PV Array system of approximately 200MW total.
    - Site is not within the BLM-administered lands considered off-limits to development. Rather the site has been serialized by BLM as CACA052842
    - Lands have a slight southeast slope of approximately 3%
    - Solar isolation levels are greater than 7.0 kWh/m2/day
    - The Mojave Diamonds site is not in or adjacent to designated critical habitat, special management areas, wilderness study areas or ACECs
    - Preliminary biological assessments indicates that the site has no apparent critical habitat for any threatened or endangered species
    - The site is not a right-of-way exclusion areas or avoidance area
    - The site is not a special recreational management area or other special use area

According to the map published by the Argonne National Laboratory, dated October 2011, titled "BLM-Administered Lands in California Available for Application for Solar Energy ROW Authorizations under the Modified BLM Alternatives Considered in the Supplement", the Mojave Diamonds Project site appears only partially to have been included in Lands Available for Application – Modified Program Alternative (Variance Areas). For all the reasons stated above, including that the project application has already been accepted by the BLM, CEC believes the proposed PEIS can be enhanced with the inclusion of this Mojave Diamonds Project site.

We appreciate the opportunity to comment of the proposed Solar PEIS and are available at any time to discuss further the recommendations included in this transmittal. Should you have any questions or require further information, please do not hesitate to contact me.

Sincerely,

Leslie J. Barrett

Leslie John Barrett, PE, MBA, Esq.
President

Celtic Energy Corporation
1507 Seventh Street, #540
Santa Monica, CA 90401

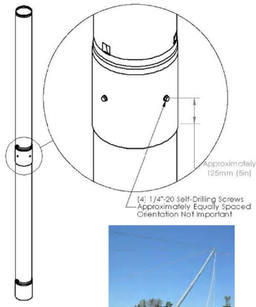
Location Map

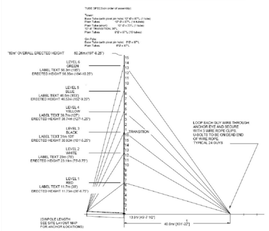
Legend

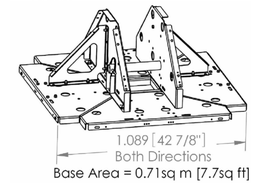
- Met Tower
- Project Boundary
- 250' LADWP Easment
- Aqueduct Buffer 150FT
- North America Railroads
- LADWP Barren Ridge NEW 230Kv
- Kern Roads
- Aqueduct
- Sections
- Townships

NOTES:

1. Wind forces and allowable member loads are calculated according to TIA/EIA standards.
2. Wind speeds are fastest mile wind velocity per EIA-222-F.
3. MES is non linear material mode in Algor FEA software and elastic analysis in SAP Software have been used to determine member forces an all the other loads.
4. Foundation has been analysed in Algor FEA software and any necessary anchor bolts, ground anchors and stakes.







Base Area = 0.71sq m [7.7sq ft]

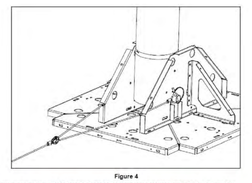
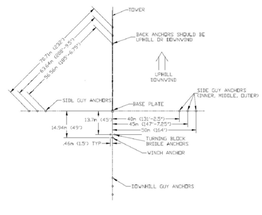


Figure 4

Drive ground rods through the baseplate holes so they can provide additional anchoring for the baseplate.



MT	N	W	N1	W1
MT1	35° 13' 8.831"	118° 4' 7.114"	35.219119610	-118.06864288
MT2	35° 8' 4.151" N	118° 10' 35.121	35.134486424	-118.17642258

Mojave Diamonds Project

Project Site Plan

CELTIC ENERGY CORPORATION

Celtic Energy Corporation
1507 7th Street, #540
Santa Monica, CA 90401

Tel. 800-590-8839
relations@windnrginc.com
windnrginc.com

Date: 10/11/2011
Serial Number
CACA 052842

BLM Ridgecrest Field Office

Project #12349
Drawn By: NRG Consulting Engineers

Thank you for your comment, Nada Culver.

The comment tracking number that has been assigned to your comment is SEDDsupp20108.

Comment Date: January 27, 2012 11:00:55AM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20108

First Name: Nada
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Last Name: Culver
Organization: The Wilderness Society
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Address 2:
Address 3:
City: Denver
State: CO
Zip: 80202
Country: USA
Privacy Preference: Don't withhold name or address from public record
Attachment: TWS Comments on Supplement to Solar PEIS - 2nd letter.pdf

Comment Submitted:

One of 2 letters TWS will be submitting today is attached.

THE WILDERNESS SOCIETY

January 27, 2012

Solar Energy Draft PEIS
Argonne National Laboratory
9700 S. Cass Avenue
EVS/240
Argonne, IL 60439

Re: Comments on Supplement to Draft Solar PEIS

To Whom It May Concern:

Please accept these comments on the Supplement to the Draft Solar Programmatic Environmental Impact Statement (PEIS). We appreciate the Bureau of Land Management providing further information and an opportunity for public comment. This letter is submitted in addition to the letter that The Wilderness Society is submitting with other organizations, in order to highlight a number of important issues that merited further discussion.

BLM should refine the proposed process for designating new SEZs in the Final PEIS.

We generally support the new SEZ identification process proposed in the Appendix D to the Supplement and recommend that it be strengthened in a few key areas to ensure that new SEZs are truly needed and are suitable for designation.

Key recommended changes:

- The Final PEIS should specify that petitions for new SEZs solely based on supporting single solar ROW applications will be denied – individual applications outside of zones should be handled through the variance process, and a developer proposing a single project should not justify designating a new SEZ.
- The Final PEIS should include, as part of the technical and economic feasibility criteria, consideration of planned or potential power plant retirements and subsequent changes to transmission access.
- The BLM should add the screening criteria recommended in [section XX of the group comment letter] and in the state-specific comments submitted separately to the list of screening criteria for new SEZs that will be incorporated into the Final PEIS.
- Among additional factors to be considered for new SEZs identified in the Supplement, the BLM should include opportunities for co-location of energy

development, such as co-location of solar development with wind or oil and gas projects, in the Final PEIS.

- While the appearance of exclusion areas within new SEZs can make sense in some situations (such as a few isolated wetlands within a very large SEZ), the BLM should take into consideration the fact that while these areas will be excluded from development, their productivity and health may be severely compromised if they are surrounded by solar development. For this reason, every effort should be made to minimize the designation of SEZs with significant numbers and/or acreage of exclusion areas within them.

The Final PEIS should set out additional specific incentives for development in SEZs.

The Modified Solar Energy Development Program Alternative will not limit development to zones, so it is important that BLM provide incentives and reduce disincentives for locating projects in SEZs. We support the incentives set out in Section 2.2.2.2.3 of the Supplement, including faster permitting with appropriate tiering of NEPA analysis, regional mitigation plans, transmission analysis, economic benefits, maintaining BLM's Renewable Energy Coordination Offices and teams, and incentives to transmission developers. We recommend that the Final PEIS detail the following **additional incentives**:

- Applications in SEZs will be given priority for agency resources including for processing;
- Applications for development outside of SEZs will be subject to a surcharge (of up to 50% for pending applications) on the per acre rental fee; and
- Applications in SEZs will be processed as Category 5 rights-of-way (master agreements), which allows more flexibility on cost-sharing between the application and BLM, while applications outside of SEZs will be processed as Category 6 right-of-way grants.

In addition, the Supplement now sets out a detailed approach to processing pending applications, which pertains to applications submitted before the date of publication for the Supplement for applications outside SEZs, but only pertains to applications submitted before June 30, 2009, for applications within SEZs. This differential treatment could be seen as a disincentive to applicants in zones and should be changed.

DOE should strengthen the preferred alternative.

We support DOE's preferred alternative, especially with the addition of more detailed information on the proposed programmatic guidance, which identifies general mitigation measures (for specific resources and for prioritizing disturbed lands and avoiding sensitive lands) and areas to avoid impacts. Supplement, pp. 3-1 – 3-7. We recommend specific improvements below.

Key recommended changes:

- DOE's programmatic environmental guidance in the Final PEIS should identify *excluded* categories of lands and explicitly incorporate the exclusion areas set out by BLM.
- DOE's guidance continues to reference streamlining environmental review but does not define what this means. In our comments on the Draft PEIS, we noted that DOE had not explained this term. We reiterate the importance of the Final PEIS stating that DOE will conduct all necessary environmental reviews associated with individual projects, which is not addressed in the Draft PEIS or the Supplement.
- The Final PEIS should set out programmatic mitigation measures to ensure that they are more than just "considerations." DOE's program can adopt the measures developed by the BLM and could also include additional incentives for siting in best locations, such as already-disturbed lands.

Specific guidance is needed on solar energy development – set out in TWS letter of August 26, 2011.

On August 26, 2011, The Wilderness Society provided specific recommendations for additional interim guidance to be issued prior to release of the Supplement to the solar energy review, which would ultimately form an integral part of the BLM's solar energy program. We noted that this guidance should also be incorporated into the Final PEIS and, as recommended in the BLM's response, we are resubmitting and incorporating by reference our detailed recommendations on specific guidance that should be set out in the Final EIS. Areas of guidance that are not currently addressed in the Supplement are:

- Targeted guidance on use of off-site mitigation and compensation;
- More specific NEPA requirements, such as release of a preliminary range of alternatives, defining a reasonable range of alternatives, and describing the scope of cumulative impacts analysis; and
- Onsite use of natural gas to support solar energy development.[1]

Criteria for addressing pending applications should be strengthened to better support the BLM's stated goal to facilitate environmentally responsible solar development, primarily in zones.

Section 1.7.2 of the Supplement states that the BLM will continue to process pending applications and defines "pending applications" as those on file prior to issuance of the Supplement, except for those in SEZs, which are only considered "pending" if submitted prior to June 30, 2009. We support BLM's acknowledgment that it has broad authority under FLPMA to reject pending solar applications prior to completing the NEPA process

[1] Our original recommendations also included direction on a pilot program for competitive leasing; however, in light of the recently-issued Advance Notice of Proposed Rulemaking Regarding a Competitive Process for Leasing Public Lands for Solar and Wind Energy Development, we will provide our comments and recommendations directly through that formal process.

and prior to issuance of the Solar PEIS ROD. However, in order to better support the agency's goals, we recommend the following specific improvements.

Key recommended changes:

- BLM should focus on eliminating unacceptable project applications from its processing queue without delay. With few exceptions, areas identified as exclusion or high conflict areas, as defined by IM 2011-061, represent lands with important environmental, cultural, or recreational values. BLM should quickly identify which project applications are within areas that would be excluded under the Final EIS or in high conflict areas and reject those with documented conflicts. The agency should also apply diligence requirements set out in IM 2011-060 to these applications.
- Pending applications within SEZs should be given the opportunity to choose to be analyzed under the program set out in the Solar PEIS ROD.
- Pending applications outside SEZs that are not on excluded or high conflict lands should also be given the opportunity to choose to submit a new application within a SEZ.
- Pending applications should only include those submitted prior to June 30, 2009.

Thank you for your consideration of our comments.

Very truly yours,

Nada Culver
Senior Director, Agency Policy & Planning
1660 Wynkoop Street
Denver, CO 80202
(303)-650-5818 Ext. 117

ATTACHMENT

THE WILDERNESS SOCIETY

August 26, 2011

Via electronic mail and U.S. Mail

Director Robert Abbey
Bureau of Land Management
U.S. Department of the Interior
1849 C St NW
Washington, DC 20240

Re: Needed guidance for development of solar energy on BLM lands

Director Abbey:

We are writing to commend you for the continued evolution of your agency's program to administer solar energy resources on the public lands and to ask for additional action in advance of a final programmatic environmental impact statement and record of decision. We recognize you inherited an agency facing a significant backlog of renewable energy applications as the result of a decade of inattention and inactivity. The substantial progress made toward rationalizing development of these critical clean energy resources is due principally to your "smart from the start" vision, your leadership, and your strong commitment to building upon lessons learned.

Nowhere is this more evident than in the ongoing effort to finalize the programmatic environmental impact statement for solar energy. The Bureau has made a strong commitment to compile additional information on the proposed Solar Energy Zones originally identified by the agency as priority areas for solar development, as well as key policy issues such as criteria for identifying new Solar Energy Zones and additional details regarding how the zone-based program will operate going forward. By striking the right balance between protecting wildlife and wild lands and facilitating faster and cheaper development, this program is the way forward to create green jobs and clean power for years into the future.

However, while this additional effort is underway there is a continuing need to provide guidance for the benefit of field staff, applicants, and other stakeholders. We offer the following recommendations for additional interim guidance to be issued prior to release of the supplement to the solar energy review. As a key part of the BLM's solar energy program, we also expect this guidance to be incorporated into the final programmatic environmental impact statement.

1. Targeted guidance on use of off-site mitigation and compensation.

The BLM is in need of tailored guidance on the use of off-site mitigation in the context of solar energy development, which would acknowledge the range of resources and uses to be addressed, as well as guide the agency in developing and requiring use of this important tool.

Industrial-scale solar energy development is currently occurring on the public lands using multi-decade rights of way and is likely to prevent all or most other uses of sites for at least the term of those ROWs, if not beyond, due to modifications sites during construction and operations. Instruction Memorandum (IM) 2011-003 prescribes 30-year terms. Off-site mitigation can – and should – provide a way to compensate for the loss of use of the affected public lands. In fact, off-site mitigation is already being used to address impacts from solar energy projects to habitat for both plants and wildlife in California. The Draft Solar PEIS only specifically contemplates use of off-site mitigation for visual resources, cultural resources and wetlands. The application to wetlands is based on existing "no net loss" policy. Draft PEIS, p. 5-65. With respect to loss of visual resources, the Draft states:

> In addition to mitigation measures that directly reduce the visual resource impacts of solar energy and associated facilities, the off-site mitigation of visual impacts may be an option in some situations. Off-site mitigation should be considered in situations where nonconforming proposed actions may lead to changing the VRM Class objectives through an RMP amendment. Unavoidable visual impacts may then be mitigated by a correction or remediation of a nonconforming existing condition resulting from a different proposed action located within the same viewshed for impacts of approximately equal magnitude, and within the same or a more protective VRM class. The off-site mitigation serves as a means to offset and recover the loss of visual landscape integrity. **For example, off-site mitigation could include reclaiming unnecessary roads, removing abandoned buildings, reclaiming abandoned mine sites, putting utility lines underground, rehabilitating and revegetating existing erosion or disturbed areas, or establishing scenic conservation easements. In situations where off-site mitigation opportunities are absent within the same viewshed, then different viewsheds that need mitigation of visual impacts because they could affect highly sensitive visual resources (e.g., along National Scenic and Historic Trails, Wild and Scenic River corridors, Scenic or Backcountry Byways, etc.) may be considered.** BLM policy guidance on off-site mitigation procedures is contained in BLM Instruction Memorandum No. 2008-204, Offsite Mitigation (BLM 2008f).

Draft PEIS, Section 5.12.3.7 Use of Off-Site Mitigation Measures for Visual Resources, pp. 5-203 – 5-204 (emphasis added).

The Draft PEIS also references the use of offsite mitigation for impacts to cultural resources, without detailed discussion. Draft PEIS, p. 5-220. However, despite the obvious and ongoing need for use of off-site mitigation to address the impacts of large-scale solar energy development, the Draft PEIS does not address the issue in detail. There is no discussion of the many other resources that will be affected or lost, and should be subject to off-site, compensatory

mitigation; and there is no detailed direction as to how needed off-site mitigation should be developed and applied.

Further, the agency's current guidance on offsite mitigation (IM 2008-204 "Offsite Mitigation ") does not specifically address solar development or distinguish among the types of "large development projects" where offsite mitigation might be appropriate, which are identified as:

- Oil, gas, or geothermal fields, or individual wells that will make up a large field and associated rights-of-way;
- Major road, electrical, or pipeline rights-of-way projects;
- Wind farms or solar arrays;
- Municipal water reservoirs;
- Mining operations; and
- Recreation and Public Purposes Act leases or patents in important habitat.

In light of the long-term and virtually exclusive use of large blocks of the public lands required for solar energy development, clearer direction is needed regarding the use of off-site mitigation.

The BLM could meet this need for additional direction on the use of off-site mitigation for solar energy development by supplementing IM 2005-069 with additional guidance focused on the use of offsite mitigation for solar energy projects that includes the following elements and statements:

- Recognition that solar development is likely to prevent all or most other uses of sites for decades at a time and, therefore, it is expected that offsite mitigation will be needed to address impacts to a variety of resources and uses.
- Clarification of the agency's authority to require offsite mitigation (even if the applicant does not propose its use).
- Direction that resources and uses that should be considered for off-site mitigation (including compensatory mitigation) include, but are not limited to habitat for wildlife or plants, water, recreation, scenic values, cultural resources, and ecosystem function[1].
- Off-site mitigation requirements will be developed for each project with input from the applicant and state wildlife agencies, as well as other experts.
- NEPA analyses for projects will incorporate off-site mitigation, including a range of alternatives.
- In order to rely upon off-site mitigation to reduce impacts, the agency must[2]:
    - Have authority to implement the measures,
    - Have a reasonable expectation that it will have the resources needed to implement and monitor the mitigation measures, and
    - Have a reasonably, scientifically-based expectation that the mitigation measures will effectively avoid or reduce impacts.

[1] In California, offsite mitigation is being used to address habitat loss. While the California Fish and Game Department has required some of this mitigation, the BLM's California Desert Conservation Area Plan also specifies mitigation ratios for loss of certain categories of lands, including critical habitat.
[2] Consistent with Council on Environmental Quality Memorandum of January 14, 2011.

2. Baseline terms and conditions for ROWs that address solar energy and set out the BLM's authority to change and supplement terms.

As indicated, solar energy development is currently permitted and managed through a right-of-way grant that sets out terms and conditions, using the agency's standard form (SF299). The SF299 is used for a wide variety of uses, but historically has not been used to permit actions that become an exclusive use for decades, such as industrial-scale energy development. While the BLM can adapt the ROW form for individual projects, there are specific terms that should apply to all solar energy projects. A standard set of terms and conditions that applies to the construction, operation and reclamation of solar energy projects would ensure that the information gathered and lessons learned from the BLM's recent processing of numerous applications is used to improve all projects. These terms and conditions should include some of the innovative and carefully tailored terms developed as part of protest resolution discussions in California, such as:

- Provision for designating "unavailable" areas within rights-of-way to better manage a contiguous area and protect important resources;
- Requirement that any compensatory lands acquired as part of mitigation will be subject to permanent protection via fee acquisition and transfer for permanent management and conservation;
- Commitment not to assert or otherwise claim any water rights, surface or groundwater, beyond the use permitted under the specific ROW terms;
- Provision for the BLM to require modified or new monitoring as new information is developed or concerns identified and to incorporate such results into site management activities;
- Requirement to make monitoring results available to the public;
- Notice and commitment that substantial changes in the proposed and approved technology will require additional NEPA review before construction and operation can proceed.

These terms should also address and discourage speculative permit applications. The BLM should include in its standard terms a clear statement that assignment or transfer will not permitted in the first three years after authorization is given without a demonstration of need and technical and economic viability of the party interested in acquiring the approved ROW grant before approving reassignment or transfer. Additionally, BLM should provide for review and application of the same criteria in the event of a change in ownership of the company holding the grant and assert its authority to cancel a grant if viability is in question. Finally, BLM should require construction activity to commence within 12 months of a grant except under extraordinary circumstances with BLM's explicit approval.

The BLM should either create a new right-of-way grant application form for solar energy development or create a supplement to the SF299 specific to solar energy development. In addition to setting out specific terms for management of projects, each ROW should include terms to protect the BLM's ability to reassess and impose additional protective measures based on new information or policies, including but not limited to newly-discovered listed species or monitoring data. The BLM should specifically preserve its prerogative to apply new policies and new program requirements, such as diligence requirements, zoning/prioritization decisions, best

management practices and bonding requirements, many of which should be developed in detail through the Solar PEIS and will likely continue to be refined[3].

The agency already makes use of similar terms in other documents providing for development on public lands. For example, oil and gas leases include stipulations to advise lessees that they will be subject to new terms in similar situations. IM 2010-117 (Oil and Gas Leasing Reform) sets forth in Appendix I a comparable approach requiring all leases to contain stipulations preserving the Bureau's right to impose new restrictions upon discovery of special status species or cultural and historic resources.

3. More detailed guidance on inventory of cultural and historic resources and consultation.

Preserving our shared cultural history is an important part of the BLM's mission, cited in both the Federal Land Policy and Management Act (FLPMA) and the National Historic Preservation Act. BLM is legally obligated to consult with Tribal entities and other consulting parties, including State Historic Preservation Officers, local governments, and other interested individuals and organizations, at the earliest feasible opportunity. In addition, BLM is required to identify sites that are eligible for listing or are listed on the National Register of Historic Places, and take develop measures to avoid or mitigate damage to cultural resources and historic properties. Unsuccessful efforts to engage and respond to the concerns of Tribal entities and other interested, consulting parties have led to not only publicized resentment but also legal actions and even an injunction against construction of an approved solar energy project. While the agency is working on a programmatic agreement (PA) for solar energy, a structured approach to not only compliance but also proactive outreach will better position proposed projects for success and can build on the provisions of the PA.

The BLM can issue new guidance for early, timely, personalized, and in-person consultation and outreach to Tribes and other consulting parties. This guidance can apply as part of finalizing Solar Energy Zones, as part of prioritizing areas for development within zones, throughout the processing of applications, and during construction and operation of projects. Key elements of the guidance would be:

- At each step, consultation and outreach should incorporate:
  - Sufficient time for response from Tribal representatives,
  - In-person conference to discuss concerns and try to reach resolution as early as
  - possible,
  - Formal response from agency staff demonstrating efforts to accommodate
  - Tribal concerns, and
  - Identification and evaluation of historic properties.
- Identification and evaluation may be conducted in progressive stages of detail, but should be completed prior to the application stage and be conducted at each stage as soon as there is enough information to make it feasible to do so.
- All parties to PAs should be given opportunities to provide input at all stages identified above.

[3] The agency already uses lease stipulations with similar language for new information, determinations and policy in oil and gas leases, which can provide a reference.

- PAs for the Solar Energy PEIS and for other zones, priority areas or individual projects should follow the steps outlined above for consultation, identification and evaluation, as well as addressing Tribal concerns and potential impacts to cultural and historical resources.

4. More specific NEPA requirements –

The National Environmental Policy Act (NEPA) dictates that BLM take a "hard look" at the environmental consequences of a proposed action and the requisite environmental analysis "must be appropriate to the action in question."[4] In order to take the "hard look" required by NEPA, BLM is required to assess impacts and effects that include: "ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic, historic, cultural, economic, social, or health, whether direct, indirect, or cumulative." 40 C.F.R. § 1508.8. NEPA regulations define "cumulative impact" as:

> the impact on the environment which results from the incremental impact of the action when **added to other past, present, and reasonably foreseeable future actions** regardless of what agency (Federal or non-Federal) or person undertakes such other actions. **Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.**

40 C.F.R. § 1508.7 (emphasis added). In the context of industrial-scale solar energy development, these impacts are wide-ranging and significant. Specific guidance for thorough analysis of projects will ensure impacts are identified early on and can be addressed through improvements or even rejection of projects. There are a number of key aspects of NEPA analysis of solar energy projects that should be addressed in new or amended policy guidance:

a. Preliminary range of alternatives is issued for public comment.

NEPA requires BLM to "[e]ncourage and facilitate public involvement in decisions which affect the quality of the human environment"; and notes that "public scrutiny" is "essential to implementing NEPA." 40 C.F.R. § 1500.1(b); § 1500.2(d). Releasing a range of preliminary alternatives for public comment, prior to finalizing and issuing a formal Draft EIS (or EA), would advance NEPA's twin goals of providing meaningful public participation in government decisions and ensuring government decisions affecting the quality of the environment are fully informed by all relevant information.

The BLM and other federal agencies already make use of this tool. Numerous BLM offices have used preliminary alternatives as a way to expand opportunities for public comment on resource management plans (RMPs). For instance, the Arizona Strip BLM Office provided preliminary management alternatives, giving the public a chance to submit comments and giving the BLM valuable insight into their management approaches (available on-line at: http://governor.utah.gov/rdcc/Y2003/03-2902.pdf). The Las Cruces Field Office (New Mexico)

[4] *Metcalf v. Daley*, 214 F.3d 1135, 1151 (9th Cir. 2000); *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 348 (1989).

also held workshops and solicited public comments on preliminary alternatives for the Tri-County RMP (see RMP Newsletter 3, available at http://www.blm.gov/nm/st/en/fo/Las_Cruces_District_Office/tricounty_rmp.html) and the Trackways National Monument (see press release, available at http://www.blm.gov/pgdata/etc/medialib/blm/nm/field_offices/las_cruces/las_cruces_planning/trackways_rmp.Par.97147.File.dat/NewsRelease_ptnm_workshop9_2010.pdf, and preliminary alternatives highlights, available at http://www.blm.gov/pgdata/etc/medialib/blm/nm/field_offices/las_cruces/las_cruces_planning/trackways_rmp.Par.4873.File.dat/Issue_summaryV2_rgedit.pdf).

Requiring BLM field offices to provide a preliminary range of alternatives for comment as part of NEPA analysis for solar energy projects would allow the agency to identify key issues or places or approaches to a project that are not being considered but could lead to serious opposition, or improvements in a project, or even substantial legal flaws in the analysis.

b. Reasonable range of alternatives is analyzed.

NEPA requires the BLM to consider alternatives to the proposed action.[5] This requirement has been described as the "heart" and "linchpin" of the environmental review by the courts and the Council on Environmental Quality ("CEQ"), respectively.[6] Agencies must "rigorously explore" all reasonable alternatives to the proposed action and "[d]evote substantial treatment to each alternative considered in detail including the proposed action so that reviewers may evaluate their comparative merits." 40 C.F.R. § 1502.14(a). Further, in defining what is a "reasonable" range of alternatives, NEPA requires consideration of alternatives "that are practical or feasible" and not just "whether the proponent or applicant likes or is itself capable of carrying out a particular alternative"; in fact, "[a]n alternative that is outside the legal jurisdiction of the lead agency must still be analyzed in the EIS if it is reasonable."[7] The foregoing principles are equally applicable to an EA.

IM 2011-059 provides initial guidance on the range of alternatives, but should contain more specificity regarding reasonableness and should also be revised to acknowledge the important information that can be gained from analyzing alternatives in different locations. Consequently, in the context of a solar energy project, BLM guidance should clarify that a reasonable range of alternatives includes the proposed alternative, a no action alternative, and at least two additional alternatives that consider:

- ,
- alternate locations beyond the specific boundaries of proposed rights-of way, including private land alternatives,
- smaller "footprint" or size than the proposed action, which could reduce environmental impacts,

[5] 42 U.S.C. § 4332(2)(C)(iii); *Bob Marshall Alliance v. Hodel*, 852 F.2d 1223, 1228-1229 (9th Cir. 1988).
[6] *See Monroe County Conservation Council v. Volpe*, 472 F.2d 693, 697-698 (2nd Cir. 1972); 40 C.F.R. § 1502.14.
[7] Council on Environmental Quality, Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations, Questions 2A and 2B, available at http://ceq.hss.doe.gov/nepa/regs/40/40p3.htm; 40 C.F.R. §§ 1502.14, 1506.2(d).

- different technology from that in the proposed action, which may be more efficient or reduce environmental impacts (such as using less water), if feasible, and
- a range of reasonable foreseeable development for the proposal and adjacent lands, including consideration of non-project alternative.

c. Cumulative impact analysis should take into account connected actions and additional projects affecting resources in the area.

To satisfy NEPA's hard look requirement, the cumulative impacts assessment must do two things: First, BLM must catalogue the past, present, and reasonably foreseeable projects in the area that might impact the environment. [8] Second, BLM must analyze these impacts in light of the proposed action.[9] If BLM determines that certain actions are not relevant to the cumulative impacts analysis, it must "demonstrat[e] the scientific basis for this assertion."[10] A failure to include a cumulative impact analysis of actions within a larger region will render NEPA analysis insufficient.[11] While the treatment of this issue has improved with recent EISs, more work is needed.

For solar energy projects, guidance should define the needed cumulative impact analysis to ensure sufficient review of all likely connected actions (such as transmission associated with a proposed project) and additional projects planned for the area, all of which can have compounding effects and significant effects on natural resources. In particular, it is clear that other proposed solar projects and their associated transmission in the California Desert are likely to cause significant impacts on habitat for the desert tortoise , which should affect the size, design, technology, and mitigation measures that would be required to responsibly permit additional development of a new project in tortoise habitat. To date, BLM EISs have conceded these effects but have not analyzed the impacts of such development on potential tortoise recovery or whether the cumulative impacts can in fact be mitigated. Completing a more thorough analysis of cumulative impacts would enable the agency to determine mitigation that is needed on a landscape level, such as protecting migration corridors, as well as more site-specific adjustments to project boundaries or technology to provide added protection for wildlife, plants or water that are being stressed from a variety of uses.

5. Dealing with pending applications

In advance of a final PEIS and ROD, BLM has the opportunity to resolve confusion surrounding which applications will be treated under which set of rules with a clear policy statement is how the Bureau will address pending applications. Specific recommendations were offered by a coalition of developers and conservationists, and should form the basis for new guidance to be issued immediately.

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[8] *Muckleshoot Indian Tribe v. U.S. Forest Service*, 177 F.3d 800, 809–10 (9th Cir. 1999).
[9] *Id.*
[10] *Sierra Club v. Bosworth*, 199 F.Supp.2d 971, 983 (N.D. Ca. 2002).
[11] *See, e.g., Kern v. U.S. Bureau of Land Management*, 284 F.3d 1062, 1078 (9th Cir. 2002) (analysis of root fungus on cedar timber sales was necessary for an entire area).

New guidance should spell out which applications will be subject to the land use and other requirements to be finalized in the ROD. In February 2011, the Bureau issued significant new policy guidance sending a clear indication to new applicants that, in combination with the Draft PEIS, development will be confined to areas of low resource conflict. Accordingly, any new applications filed on or after March 1, 2011, should be governed by the terms of the Solar PEIS ROD when finalized. This rule should not apply to boundary adjustments to move an existing project application to a nearby area in order to avoid environmental or cultural conflicts, even if this relocation would technically require a "new" application.

To improve the processing of other pending applications submitted before March 1, 2011, the existing guidance for the administration of solar energy development on public lands must be improved and revised as follows:

- The BLM should establish a new processing fee structure for the costs of "holding" a location, set at a level sufficient to dampen speculation and to acknowledge the acreage that may be subject to restriction while BLM processes complicated applications for utility-scale solar projects. Neither BLM's current ROW regulations and guidance nor BLM's guidance on processing solar energy applications adequately addresses this risk. All applicants would be required to pay these processing fees in full into escrow before application processing begins.
- The BLM should clearly define all POD requirements and enforcement mechanisms.
- The Bureau should revise the screening criteria laid out in IM 2011-061 with the screens proposed by industry and conservation community partners in December 2010,[12] respecting the additional accommodations provided to the National Park Service. The Bureau should coordinate with the Department of Energy, Treasury, and other federal agencies to apply screens within their expertise to ensure that limited public resources are focused on only the most viable applications. The Secretary of the Interior is not the only person who is concerned about the "flipping" of ROW authorizations that has occurred to date.
- Pending applications should then be subject to environmental screening as follows:
    - Early outreach prior to NOI (as provided under IM 2011-061).
    - Project Rating according to environmental criteria, based on available data, to group pending applications by likelihood of conflict as described in screens (high, medium and low) and applicants notified.
    - All pending applications, regardless of when filed, that are determined by the BLM to be in high conflict areas following consultation with the applicant and stakeholders, should be rejected.

6. Leasing pilot program

Solar development is administered using a right-of-way application under FLPMA. This legal instrument is a poor fit for commercial energy development. ROW relates to the *use of lands* not the *development of a resource* on or emanating from lands. The placement of facilities *on*, or other physical use *of*, federal lands is very different from the commercial development of a resource. ROW authorizations under FLPMA are intended for and better suited to limited uses of

[12] *See California Desert Renewable Energy Working Group letter to Director Abbey*, December 22, 2010.

lands under a multiple-use framework, than to long-term, exclusive commercial resource development operations.

For other energy resources, leases have proven more appropriate than ROW authorizations for resource development in collecting a fair return to taxpayers and ensuring the long-term certainty required by developers and the public alike.

The Bureau should take immediate steps to prepare for a transition to leasing solar energy resources on public lands. It is clear that the management of these fuel sources benefits from leasing systems designed to deal with long-term, commercial operations. But the Bureau should carefully evaluate the elements of a leasing system most appropriate for a young industry like solar. To do so, the Bureau should initiate a pilot demonstration effort evaluating methods of competitive offering in the case of overlapping applications in solar energy zones, with the purpose of experimenting with ways to resolve competitive interest to the maximum benefit of government and taxpayers.

7. Standardized and mandatory policies and design features

The Draft Solar PEIS includes a set of "Current and Proposed Bureau of Land Management Solar Energy Development Policies and Design Features" as Appendix A, which may be incorporated into the agency's Solar Energy Program. A key aspect of incorporating these practices into the program and into all future projects will be creating a version of the list that can be issued as soon as possible and made mandatory (where applicable) to all projects.

BLM and other federal agencies have developed an effective way to make a "menu" of terms and mitigation measures required to all projects as they are applicable. The Record of Decision on the PEIS for the West-wide Energy Corridors includes Appendix B – Interagency Operating Procedures (available at http://corridoreis.anl.gov/documents/docs/Energy_Corridors_final_signed_ROD_1_14_2009.pdf), which applies as follows:

> These Interagency Operating Procedures (IOPs) are adopted as part of the plan amendments and are mandatory, as appropriate, for projects proposed within the Section 368 corridors. Not all IOPs will be appropriate for all projects; those that apply to pipelines, for instance, are not appropriate to transmission lines. These IOPs are practicable means to avoid or minimize environmental harm from future project development that may occur within the designated corridors. The IOPs set forth below are not intended and should not be construed to alter applicable provisions of law or regulation or to reduce the protections afforded thereby to the resources addressed in the IOPs.

These IOPs address all aspects of project, including design, transportation, specific affected resources, construction, decommissioning, and consultation. In addition, the IOPs clarify where they may apply differently to different ecosystems.

A similar list of practices and procedures can be finalized and issued *immediately* to apply to all projects, and then updated and incorporated as part of finalizing the PEIS, as well. The BLM can and should make this list available immediately, without waiting for the Solar PEIS to be finalized.

As part of issuing a list of mandatory policies and design features, the BLM should also include an analysis of their effectiveness –in terms of evaluating the broader categories and their application in specified situation. In the Draft Solar PEIS, the BLM asserts that its "comprehensive set of mitigation requirements would ensure that impacts from solar energy development on BLM-administered lands would be mitigated to the fullest extent possible." Draft Solar PEIS, p. 6-104. However, in order to rely on these measures, the agency must provide data and analysis that demonstrate why the proposed policies and design features will "constitute an adequate buffer against the negative impacts that may result from the [proposed alternatives]."[13] Simply identifying mitigation measures, without analyzing the effectiveness of the measures, violates NEPA. Agencies must "analyze the mitigation measures in detail [and] explain how effective the measures would be . . . A mere listing of mitigation measures is insufficient to qualify as the reasoned discussion required by NEPA."[14] Thus, in addition to providing the scientific basis for adopting these policies and practices, the BLM must discuss why the selected mitigation measures are likely to be successful in the context of NEPA analysis for individual projects.

As part of our comments on the Draft Solar PEIS, we provided a compilation of best management practices for renewable energy siting and development drawn from scientific, peer-reviewed research prepared by Utah Clean Energy and several other conservation groups in the West (attached as Appendix VIII to those comments). We once again urge the BLM to carefully examine this document as part of producing a compendium of design features that are scientifically supported. IM 2011-003 references certain best management practices and applicable documents that are made available in different locations, but does not provide an easily accessible, comprehensive listing that is needed to make inclusion of these provisions in permits for individual projects practical, realistic, and likely.. Guidance providing such a listing and making it mandatory for all solar energy projects in applicable contexts should not be delayed.

8. <u>On-site use of natural gas especially with regard to hybrid plants</u>

Increasingly, developers are turning to hybrid generation options on private lands projects to bolster the variability of the solar resource. Pairing natural gas-fired generation with solar energy development can be a logical match, but the economic and environmental advantages of renewable energy generation (like solar) can be eclipsed if a distinction is not clearly drawn between solar development technologies that may require a minimal amount of natural gas and those that depend on a non-renewable fossil fuel as a chief generation resource.

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[13] *Nat'l Parks & Conservation Ass'n v. Babbitt*, 241 F.3d 722, 734 (9th Cir. 2001).

[14] *Nw. Indian Cemetery Protective Ass'n v. Peterson*, 764 F.2d 581, 588 (9th Cir. 1985), *rev'd on other grounds*, 485 U.S. 439 (1988).

Co-locating a solar facility with a large natural gas facility to gain an advantage for developing natural gas-fired electricity on public lands should be clearly addressed and discouraged. Guidance should be issued to address on-site use of natural gas or other non-renewable fuels used in the generation of electricity to firm solar and wind generation, and define what constitutes a renewable energy project.

We sincerely hope the BLM will not delay in issuing this critical guidance and appreciate your attention to these recommendations. As always, we are available and interesting in meeting with you to discuss these important matters further.

Very truly yours,

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Thank you for your comment, Claire Sears-Barker.

The comment tracking number that has been assigned to your comment is SEDDsupp20109.

Comment Date: January 27, 2012 11:11:18AM
Supplement to the Draft Solar PEIS
Comment ID: SEDDsupp20109

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Comment Submitted:

Thank you for taking the effort to compile and go through all the comments and bring public meetings to us through-out this process.

I want to emphasize that at this point in our technological advances-and our increased dedication to conservation-the Government should be supporting the "Distributed Generation Modeling" to address our nations energy issues in a way that is compliant and complimentary to the word moniker "green". Please see "Solar Done Right" for more information, or google "Bill Powers". Every community has distinct renewable resources, but the sun shines almost everywhere.

Corporate use of public lands should be the LAST option to follow before utilizing already denigrated (preferably private) lands. Communities-within these developments-should have clear and dependable economic benefit.

In particular-developing SEZ's within the San Luis Valley-not only is planning on export that is not supported by transmission at this time-but is also not going to make substantial economic benefits to the tax structure of any of the communities.

With the proposed decrease in irrigation pumping of lands within the SLV, we have in our midst-already denigrated lands of higher acreages than those proposed in the SEZ studies, which would bring economic benefit under tax distributions-if not in long term employment....distributive modeling near point of use is a much "greener" option all the way around. Leave undeveloped land-undeveloped-please.

Thank you for listening.
Claire