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## ARIZONA DEPARTMENT OF WATER RESOURCES

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March 14, 2011

BLM Solar Energy Development Draft Programmatic EIS Comments  
9700 South Cass Avenue – EVS/240  
Argonne IL 60439

To the Solar Energy Development EIS Team:

The Arizona Department of Water Resources (Department) appreciates the opportunity to comment on the Bureau of Land Management's (BLM) Solar Energy Development Draft Programmatic EIS.

The Department supports the ongoing efforts at both the federal and state level to identify areas in Arizona that are highly suitable for renewable energy development while at the same time minimize impacts to the state's natural resources, specifically Arizona's water resources. These efforts will lead to a more streamlined process for the siting and permitting of renewable energy projects in Arizona and thereby promote greater renewable energy development and economic growth in the state.

The Department favors EIS alternatives that provide general siting and design criteria encouraging applicants to develop projects in suitable areas and use technologies that minimize resource impacts rather than those alternatives that restrict the location of potential development of renewable projects to small areas of land or to specific types of technologies.

The Department looks forward to continuing its work and cooperation with the BLM on the Restoration Energy Design Project EIS which will provide additional guidance for siting renewable energy projects in the state while at the same time minimizing impacts to natural resources by siting new projects on previously disturbed or degraded lands.

Thank you again for the opportunity to comment on the Solar Development Draft EIS.

Sincerely,

  
Sandra Fabritz-Whitney  
Acting Director



*Board of County Commissioners*  
*Lincoln County, Nevada*

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March 7, 2011

Solar Energy Draft Programmatic EIS  
Attn: Ms. Heidi M. Hartmann, Document Manager  
Argonne National Laboratory  
9700 Cass Avenue – EVS/240  
Argonne, Illinois 60439

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

Dear Ms. Hartmann:

Lincoln County, Nevada has completed a comprehensive review of the Draft Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States (DPEIS) and provides the following comments thereto. Lincoln County has participated extensively in the National Environmental Policy Act (NEPA) process leading to release of the DPEIS for public comment. During the summer of 2009, Lincoln County, through the Bureau of Land Management's Nevada State Director, requested that proposed Solar Energy Zones in Delamar Valley, Dry Lake Valley (North) and in the vicinity of the East Mormon Mountains be included in the scope of the Programmatic Environmental Impact Statement for Solar Energy Development (PEIS). The Board of Lincoln County Commissioners believe that utility-scale solar energy development on BLM-administered land, if done in the right locations, at an appropriate scale and in a manner which avoids, minimizes and/or otherwise mitigates impacts to other multiple uses, particularly to permitted grazing of livestock, can contribute to energy security in the United States and provide important economic and fiscal benefits in Lincoln County.

At BLM's invitation, Lincoln County executed a Memorandum of Understanding with the Bureau of Land Management and Department of Energy on August 3, 2009 wherein Lincoln County became a Cooperating Agency regarding preparation of the DPEIS. In a letter dated September 8, 2009, Lincoln County provided BLM's PEIS contractor with



extensive comments on the scope of issues to be addressed with the DPEIS. In this letter, Lincoln County also requested that BLM significantly reduce the size of and recommended specific locations for the boundaries of the Delamar Valley SEZ, the Dry Lake Valley North SEZ and the East Mormon Mountains SEZ. Over the past year, Lincoln County has, in its role as a Cooperating Agency, reviewed and provided extensive written comments to Chapters 3, 5, 6, 7, 11.2, 11.4 and 11.5 of the Administrative Draft Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States (ADPEIS). Lincoln County's comments have consistently sought to encourage BLM to identify and evaluate SEZs in Lincoln County of appropriate scale and location, which avoid or minimize impacts to other multiple uses, particularly to permitted grazing of livestock and recreation. Lincoln County's many previously submitted comments have also been intended to improve the accuracy and scientific defensibility of the Programmatic Environmental Impact Statement for Solar Energy Development. Lincoln County desires that the PEIS serve to facilitate expeditious utility-scale solar development on select public lands in the County.

Unfortunately, review of the DPEIS by Lincoln County has revealed a document which has failed to respond to many of the substantive comments offered over the past many months by Lincoln County. Most importantly, the DPEIS proposes SEZs in Lincoln County at a scale and in locations which will not effectively avoid or minimize adverse impacts to the environment and permitted public land uses, especially range livestock grazing. Lincoln County encourages BLM and the Department of Energy (DOE) to consider and address the following comments when preparing the Final Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States (FPEIS).

#### General Comments

1. The County recognizes the value of combining solar development activities into an energy park (SEZ) rather than widely dispersed solar installations and existing right-of-way application processes. As such, the County OPPOSES the "Solar Energy Development Program Alternative (the Preferred Alternative)" but SUPPORTS the "Solar Energy Zone Program Alternative" provided that SEZs are located in areas that limit the impacts to other multiple uses, critical habitats and resource values. **Lincoln County recommends that the FPEIS and any related Record of Decision identify the Solar Energy Zone Program Alternative as the BLM Preferred Alternative.**

SEZs should be located in areas with "Low Potential for Conflict" per the Screening Criteria listed in Instruction Memorandum No. 2011-061 regarding Right-of-Way Management for Solar and Wind Energy issued by the Department of the Interior on February 7, 2011.

The SEZ Program Alternative will limit the exorbitant amount of time, money and energy (on behalf of the County, local stakeholders and State and Federal Agencies) that goes into making sure that solar development rights-of-way are "smart from the start" and sited in appropriate locations.



2. The County has previously advocated for approximately 2,775 acres of the southern portion of the Delamar Valley SEZ (near and including Delamar Lake) to be designated as a priority area for solar development. However, after careful consideration and further input from solar developers, BLM Specialists and grazing permittees, the County has revised its stance and now advocates that the entire Delamar Valley SEZ be classified as “lands excluded from utility-scale solar energy development”. **Lincoln County recommends that the FPEIS and any related Record of Decision classify the entire Delamar Valley SEZ as “lands excluded from utility-scale solar energy development”.**

3. The County fully supports the Renewable Energy Goal found on page 73 of the Ely District Record of Decision and Approved Resource Management Plan dated August 2008 (BLM/NV/EL/PL-GI08/25+1793) that states “Goals – Renewable Energy: Provide opportunities for development of renewable energy sources such as wind, solar, biomass and other alternative energy sources while minimizing adverse impacts to other resources.”

The proposed Delamar Valley SEZ does not “minimize adverse impacts to other resources” including, but not limited to: Water Resources, Soil Resources, Vegetation Resources, Visual Resources, Recreation, Livestock Grazing, and County Socioeconomics.

From the County’s perspective, development in any portion of the proposed Delamar Valley and East Mormon Mountain SEZs would have unacceptable impacts to the above listed resources. Therefore, both the Delamar Valley and East Mormon Mountain SEZs should be classified as “lands excluded from utility-scale solar energy development”.

**Again, Lincoln County recommends that the FPEIS and any related Record of Decision classify the entire Delamar Valley SEZ and East Mormon Mountain SEZ as “lands excluded from utility-scale solar energy development”.**

4. The County does not support solar development (total acres proposed for development within SEZs) in excess of the capacity of existing or reasonably foreseeable power transmission facilities. North-south running power lines common to both the Dry Lake Valley North and Delamar Valley SEZs, include:

- An existing 69 kV LC Power District #1 Line
- The proposed 500 kV LS Power / NV Energy One Nevada Line (600 MW Capacity per LS Power)
- The proposed 500 kV NV Energy Line
- The proposed 230 kV SNWA Line

Generally the maximum transmission line capacity is 1,500 MW for a 500 kV line, 500 MW for a 230 kV line, and 75 MW for a 69 kV line. Therefore, the maximum capacity of existing transmission lines or those under consideration in the reasonably foreseeable future is approximately 3,575 MW. In reality the line capacities would likely be much less (approximately half of the maximum capacity ratings) given the line length, which results in approximately 1,800 MW of line capacity. It should also be noted that access



to these lines by project developers will be expensive, as it will require development of new power substations and associated infrastructure.

Assuming half of this maximum capacity would be available for solar (a very generous assumption) and assuming production of 9 acres / MW for a solar development (per the assumptions used in the Draft PEIS), the maximum solar acres supported by existing or foreseeable transmission line capacity within the Dry Lake Valley North and Delamar Valley SEZs is approximately 8,000 combined acres.

Assuming an 80% build-out of the designated SEZ areas (per the assumptions used in the Draft PEIS), the combined SEZ area for both the Dry Lake Valley North SEZ and the Delamar Valley SEZ combined should NOT exceed 10,000 acres. **Lincoln County recommends that the FPEIS and any related Record of Decision identify no more than 10,000 acres of BLM-administered land within the western half of the Ely Springs Cattle Allotment in Dry Lake Valley North for SEZ designation. It is important to note that the owner of the grazing permit for the Ely Springs Cattle Allotment supports solar development within the allotment and the owner's adjacent private land. Further, Lincoln County recommends that the Final PEIS and any related Record of Decision classify all portions of the proposed Delamar Valley SEZ as "lands excluded from utility-scale solar energy development".**

As shown on Figure 1, Lincoln County has identified an area within the Ely Springs Cattle Allotment portion of the Dry Lake Valley North SEZ. This above-mentioned area exceeds the 10,000-acre required maximum area per reasonably foreseeable transmission capacity. Therefore, designating the Delamar Valley SEZ as "lands excluded from utility-scale solar energy development" should have no impact on the overall feasibility of solar energy production within Lincoln County, nor should it encumber the renewable energy goals of the State of Nevada or the current Federal Administration based on the need for renewable energy and available transmission capacity.

5. After careful consideration of the characteristics of the East Mormon Mountains proposed SEZ and review of the impacts of developing the East Mormon Mountain SEZ described in the Draft Solar PEIS, Lincoln County has concluded that it can not support designation of any portion of the proposed East Mormon Mountains SEZ. Lincoln County is particularly concerned with significant impacts to existing permitted livestock grazing; excessive slopes in many areas of the SEZ; and impacts to desert tortoise and sensitive plant species which will result from solar development with the East Mormon Mountain SEZ. Removing 8,900 acres from the middle of what is left (after devastating wildland fires) of the Gourd Springs allotment will likely result in termination of the livestock ranching operation of the existing permittees. This is an unacceptable consequence of developing the proposed East Mormon Mountains SEZ for solar energy development. **Therefore, Lincoln County recommends that the Final PEIS and any related Record of Decision classify all portions of the proposed East Mormon Mountains SEZ as "lands excluded from utility-scale energy development".**



Specific Comments

Attachment 1 contains Lincoln County's comments to specific chapters of the Draft Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States.

I and my staff look forward to working with BLM, DOE, Argonne National Laboratory and their staffs in preparing a Final PEIS which facilitates utility-scale solar energy development on BLM-administered land in Lincoln County in site-specific and technology-specific locations, at an appropriate scale and in a manner which avoids or minimizes impacts to other multiple uses, particularly to permitted grazing of livestock, and which contributes to energy security in the United States while providing economic and fiscal benefits in Lincoln County.

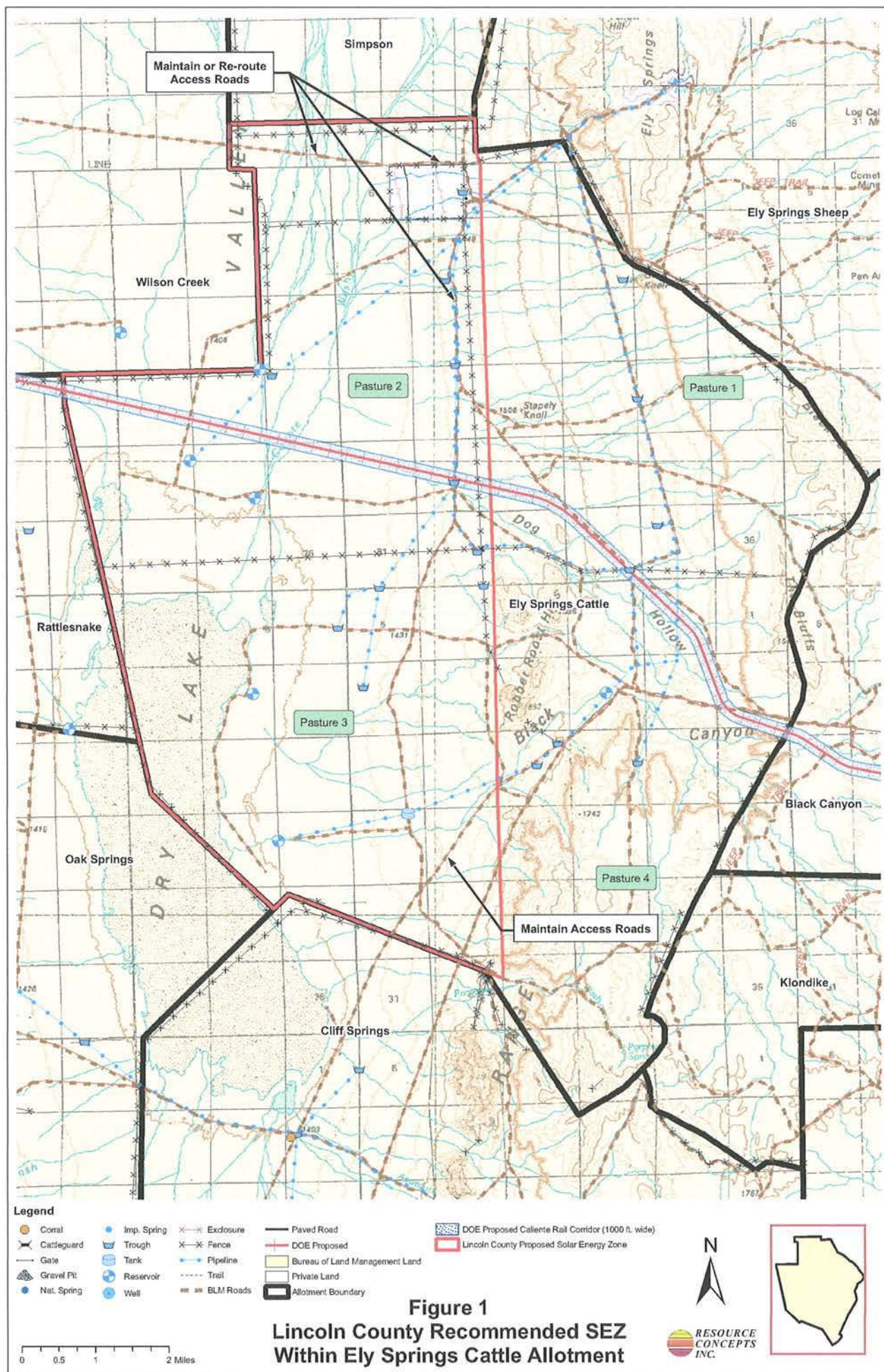
Sincerely,

  
George T. Rowe  
Chairman

cc: US Senator Harry Reid  
US Senator John Ensign  
Congressman Dean Heller  
Congressman Joe Heck  
Congresswoman Shelley Berkley  
Bob Abbey, Director, Bureau of Land Management, Washington, D.C.  
Dr. Jane Summerson, Department of Energy, Wash, D.C.  
Linda Resseguie, Bureau of Land Management, Wash, D.C.  
Jim May, Argonne National Laboratory  
Amy Leuders, Acting Director, Nevada BLM, Reno, Nevada  
Rosemary Thomas, District Manager, Ely BLM  
Victoria Barr, Field Manager, BLM Caliente Field Office  
State Senator Dean Rhoads  
State Senator John Lee  
State Assemblyman Ed Goedhart  
State Assemblyman Pete Goicoechea

Attachments Seven: Chapter 3, Chapter 5, Chapter 11.2 Delamar, Chapter 11.4 Dry Lake North, Chapter 11.5 East Mormon Mountains, Appendix A and M, and Lincoln County Recommended SEZ within Ely Springs Cattle Allotment pdf map







## Attachment 1

Lincoln County Nevada Specific Comments  
to Draft Programmatic Environmental Impact Statement  
for Solar Energy Development in Six Southwestern States



**Document Review Form**  
**Draft Solar Energy Development PEIS**

**Reviewer's Name:** Connie Simkins, (775) 962-1333, [jcciac@co.lincoln.nv.us](mailto:jcciac@co.lincoln.nv.us)  
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**Reviewer's Organization:** Lincoln Co., NV.

**Primary Disciplinary Area (e.g., ecology, land use planning, regulatory oversight):** Local Interest, County Infrastructure, Land Use, Grazing, Wildlife, Water, Socioeconomics

**Section or Chapter Number and Date of Reviewed Document:** Chapter 3 – Draft Solar PEIS dated December 2010

EIS Section	Page/Line	Comment/Suggested Revision
<b>General Comment</b>		If the PEIS is to facilitate and expedite subsequent project specific NEPA review, the Final PEIS should include a bounded analysis for all impacts to all resources. As such upper limits of generic project features (i.e. facility size, resource requirements such as land, water, employment, etc.) should be described for each technology. Several specific comments pertaining to the issue of bounding follow as examples of how the entire Chapter 3 should be revised to enable bounded analysis of impacts to be provided in Chapter 5 and elsewhere in the Final PEIS.
3.1.1	3-2/14	Is 100 to 150 ft the assumed maximum for bounded analysis purposes? Figure 3.1-1 displays a project in which the rows appear to be several hundred if not thousands of feet long.
3.1.1	3-3/11	To set the stage for later bounded analyses in Chapter 5, it would be helpful here to include a statement regarding the assumed maximum size of project anticipated on public lands. Use the assumed maximum land area required for a bounded analysis in later analyses.
3.1.1	3-4/19	This paragraph should include a statement on the maximum assumed water requirement for this generation technology. The maximum assumed water requirement would then be analyzed in Chapter 5 as the bounded analysis.
3.2.2.2.2	3-20/34-3-	Is fugitive dust the only impact anticipated? Inclusion of a discussion of impacts in Chapter 3



	<b>21/11</b>	is premature and out of context. The description of impact here and elsewhere should be moved to the Chapter describing impacts. The discussion of mitigation for fugitive dust is premature and should be moved to Chapter 5 and other sections of the Final PEIS presenting impacts and measures to mitigate impacts. Mitigation measures for myriad of other impacts are not presented in Chapter 3.
<b>3.2.5</b>	<b>3-23/25</b>	Section 3.2.5 should be re-titled Transmission Lines and Substations. In the same manner that descriptions of transmission line assumptions and design characteristics are provided, similar information should be provided for substations. For example, what size of substation would be required for each of the assumed facility power capacities listed in Table 3.1-1? How many acres would such substations occupy? In later chapters of the Final PEIS in which impacts are disclosed, the total number and size of substations required to “build out” each proposed SEZ should be specified and related impacts analyzed. In its current form, the Draft PEIS analysis of substations is woefully inadequate to facilitate expedited solar project permitting on BLM administered lands.
<b>3.7.2</b>	<b>3-49/42</b>	Later sections of the Draft PEIS do not appear to specifically identify any specific areas for competitive leasing. If competitive leasing is an option which BLM may select for certain identified areas, such areas must be identified in the Final PEIS.
<b>3.7.2</b>	<b>3-50/28-43</b>	The Draft PEIS does not appear to identify any areas within SEZs as being suitable for disposal and an analysis of each SEZ to identify such parcels is missing from the Draft PEIS. The Final PEIS should identify specific parcels within each SEZ as being suitable for disposal and include an analysis of the impacts of disposal.



**Document Review Form  
Draft Solar Energy Development PEIS**

**Reviewer's Name:** Connie Simkins, (775) 962-1333, [jcciac@co.lincoln.nv.us](mailto:jcciac@co.lincoln.nv.us)  
Jeremy Drew, (775) 883-1600, [Jeremy@rci-nv.com](mailto:Jeremy@rci-nv.com)  
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**Reviewer's Organization:** Lincoln Co., NV.

**Primary Disciplinary Area (e.g., ecology, land use planning, regulatory oversight):** **Local Interest, County Infrastructure, Land Use, Grazing, Wildlife, Water, Socioeconomics**

**Section or Chapter Number and Date of Reviewed Document:** Chapter 5 – Draft Solar PEIS dated December 2010

EIS Section	Page/Line	Comment/Suggested Revision
5.2.1	5-4/19-21	Not sure the statement regarding creation of isolated parcels is true. Under a ROW, all land will remain public. Solar sites will not be isolated from other public lands. If anything, the solar sites will be isolated but surrounding public lands will be large tracts of land.
5.2.1	5-5/15-17	Protection or relocation of monuments is a BMP or mitigation measure and should be discussed in that section.
5.2.3	5-6/44	If this PEIS is expected to expedite processing of applications to develop solar projects on public lands, impacts to legal access to private, state and public lands surrounding each proposed SEZ should be addressed within the Final PEIS and not deferred to analyses of specific project proposals. Given that boundaries of proposed SEZ are known, such an analysis in the Final PEIS is possible. In general Chapter 5 describes far too great a degree of analysis which will remain to be done in subsequent NEPA analysis seemingly rendering the Solar PEIS of little help in expediting solar land use authorizations.
5.4	5-10/21	Would be closed should be could be closed.
5.4.3.2.1	5-14/35	In addition to transmission line ROWs, this section should recognize that breaks in vegetation resulting from new roads, utility-scale solar projects and other related land uses associated



		with solar development can serve as effective fire breaks thereby reducing the risk of large fires.
5.6.3	5-19/6	As depicted on the “Nellis AFB Range Chart”, Edition 4, Special Overflight Restrictions are in place over all communities and other noise sensitive areas (ie. Pahrnagat National Wildlife Refuge) in Lincoln County, Nevada. Such Special Overflight Restrictions could be placed over designated SEZs to avoid or minimize overflight related impacts to solar facilities. This form of mitigation should be added to Section 5.6.3 of the Final PEIS.
5.7.4.1	5-30/11-24	Requirements for multiple plans will not serve to expedite development of solar projects, a purpose of the PEIS. Suggest that the Final PEIS describe these various topics as needing to be addressed in a single Plan of Development prepared for each solar project proposed to be located within an SEZ. This comment applies throughout the Draft PEIS.
5.7.4.1.1	5-31/11-13	The use of adapted species of vegetation should also be considered in order to stabilize soil and increase competitive advantage with invasive and noxious weeds.
5.7.4.1.5	5-35/17-20	See above comment and incorporate here.
5.9.3.1	5-46/ entire subsection	Requirements for multiple plans will not serve to expedite development of solar projects, a purpose of the PEIS. Suggest that the Final PEIS describe these various topics as needing to be addressed in a single Plan of Development prepared for each solar project proposed to be located within an SEZ. This comment applies throughout the Draft PEIS.
5.9.3.1	5-49/18/ entire bullet	Why would this level of hydrologic analysis be required for a solar PV project? This level of analysis would also not necessarily be required in all geographic areas. The hydrologic analysis described here is too prescriptive for the PEIS. Suggest rewording the beginning of the bullet beginning on Line 18 as follows, “ If, based upon the results of a preliminary hydrologic evaluation, further hydrologic analysis is warranted, developers may be required to conduct...”
5.9.3.1	5-50/37	If existing groundwater rights have already been approved by the State Engineer and are available for use by the solar project, no further hydrologic analysis should be required. In Nevada, new groundwater appropriations to support solar development will be reviewed and approved by the Nevada State Engineer who will determine what if any studies are required to support said applications for new appropriations of groundwater. The Final PEIS should reflect these realities in how existing and new groundwater rights and uses will be handled in Nevada.
5.10.1.1	5-63/25-27	The frequent reference to project-specific NEPA analysis and the wide range of analyses anticipated in this Draft PEIS for said NEPA analysis does not lend hope for this PEIS serving

		to expedite processing of applications to develop solar projects on public lands. The Final PEIS should provide sufficient level of detail, particularly in latter sections dealing with solar zones, to enable to BLM to undertake NEPA sufficiency analyses only to approve solar projects in designated solar zones. The Final PEIS must disclose what types of further NEPA analysis BLM believes will be required given the existence of the PEIS analyses. The BLM statement of expectation in the Final PEIS regarding future required NEPA analyses should serve to encourage rather than frustrate expedited processing of specific solar project applications, especially those located in SEZs. Suggest rewording this sentence as “These impacts may be required to be considered...”
5.13.3.1	5-212/1 <sup>st</sup> bullet	This is not a mitigation measure but an impact assessment approach and should be relocated and described as such in the Final PEIS. This bullet should also be rewritten as, “ If nearby residences ... are identified, then project developers should take measurements to assess ...



**Standard Review Form**  
 Draft Programmatic Environmental Impact Statement for Solar Energy  
 Development in Six Southwestern States

**Reviewer's Name:** Board of Lincoln County Commissioners

For technical questions, please contact prepares:  
 Connie Simkins, (775) 962-1333, [jcciac@co.lincoln.nv.us](mailto:jcciac@co.lincoln.nv.us)  
 Jeremy Drew, (775) 883-1600, [Jeremy@rci-nv.com](mailto:Jeremy@rci-nv.com)  
 Mike Baughman, (775) 315-2544, [mikebaughman@charter.net](mailto:mikebaughman@charter.net)

**Reviewer's Organization:** Lincoln County, Nevada

**Section or Chapter Number and Date of Reviewed Document:**

Chapter 11.2 – Delamar SEZ dated December, 2010

<b>EIS Section</b>	<b>Page/Line</b>	<b>Comment/Suggested Revision</b>
11.2	GENERAL	Comments provided by Lincoln County for Chapters 3, 5, 11.4 and 11.5 may also apply to this Chapter.
11.2	GENERAL	<p>The County recognizes the value of combining solar development activities into an energy park (SEZ) rather than widely dispersed solar installations and existing right-of-way application process. As such, the County OPPOSES the “Solar Energy Development Program Alternative (the Preferred Alternative)” but SUPPORTS the “Solar Energy Zone Program Alternative” provided that SEZs are located in areas that limit the impacts to other multiple uses, critical habitats and resource values.</p> <p>SEZs should be located in areas with “Low Potential for Conflict” per the Screening Criteria listed in Instruction Memorandum No. 2011-061 regarding Right-of-Way Management for Solar and Wind Energy issued by the Department of the Interior on February 7, 2011.</p>

<b>EIS Section</b>	<b>Page/Line</b>	<b>Comment/Suggested Revision</b>
		The SEZ Program Alternative will limit the exorbitant amount of time, money and energy (on behalf of the County, local stakeholders and State and Federal Agencies) that goes into making sure that solar development rights-of-way are “smart from the start” and sited in appropriate locations.
<b>11.2</b>	<b>GENERAL</b>	The County has previously advocated for approximately 2,775 acres of the southern portion of the SEZ (near and including Delamar Lake) to be designated as a priority area for solar development. However, after careful consideration and further input from solar developers, BLM Specialists and grazing permittees, the County has revised its stance and now advocates that the entire Delamar SEZ be classified as “lands excluded from utility-scale solar energy development”.
<b>11.2</b>	<b>GENERAL</b>	<p>The County fully supports the Renewable Energy Goal found on page 73 of the Ely District Record of Decision and Approved Resource Management Plan dated August 2008 (BLM/NV/EL/PL-GI08/25+1793) that states “Goals – Renewable Energy: Provide opportunities for development of renewable energy sources such as wind, solar, biomass and other alternative energy sources while minimizing adverse impacts to other resources.”</p> <p>The proposed Delamar SEZ does not “minimize adverse impacts to other resources” including, but not limited to: Water Resources, Soil Resources, Vegetation Resources, Visual Resources, Recreation, Livestock Grazing, and County Socioeconomics.</p> <p>From the County’s perspective, development in any portion of the proposed SEZ would have unacceptable impacts to the above listed resources. Therefore the Delamar SEZ should be classified as “lands excluded from utility-scale solar energy development”.</p>
<b>11.2</b>	<b>GENERAL</b>	<p>The County does not support solar development (total acres proposed for development within SEZs) in excess of the capacity of existing or reasonably foreseeable power transmission facilities.</p> <p>North-south running power lines tend to be common to both the Dry Lake North and Delamar SEZs, and include:</p> <ul style="list-style-type: none"> <li>• An existing 69 kV LC Power District #1 Line</li> </ul>



EIS Section	Page/Line	Comment/Suggested Revision
		<ul style="list-style-type: none"> <li>• The proposed 500 kV LS Power / NV Energy One Nevada Line (600 MW Capacity per LS Power)</li> <li>• The proposed 500 kV NV Energy Line, and</li> <li>• The proposed 230 kV SNWA Line</li> </ul> <p>Generally the <i>maximum</i> transmission line capacity is 1,500 MW for a 500 kV line, 500 MW for a 230 kV line, and 75 MW for a 69 kV line. Therefore, the maximum capacity of existing transmission lines or those under consideration in the reasonably foreseeable future is approximately 3,575 MW. In reality the line capacities would likely be much less (approximately half of the maximum capacity ratings) given the line length, substation and transformer configuration, which results in approximately 1,800 MW of line capacity.</p> <p>Assuming half of this maximum capacity would be available for solar (a very generous assumption) and assuming production of 9 acres / MW for a solar development (per the assumptions used in the Draft PEIS), the maximum solar acres supported by existing or foreseeable line capacity within the Dry Lake North and Delamar SEZs is approximately 8,000 combined acres.</p> <p>Assuming an 80% build-out of the designated SEZ areas (per the assumptions used in the Draft PEIS), the combined SEZ area for both the Dry Lake North SEZ and the Delamar SEZ combined should NOT exceed 10,000 acres.</p> <p>The County has identified an area within the Ely Springs Cattle Allotment that exceeds this required maximum acreage per reasonably foreseeable transmission capacity. Therefore, designating the Delamar SEZ as “lands excluded from utility-scale solar energy development” should have no impact on the overall feasibility of solar energy production within Lincoln County, nor should it encumber the renewable energy goals of the State of Nevada of the current Federal Administration based on the need for transmission capacity.</p>
11.2.1.2	11.2-3	<p>The existing 69 kV line is too small to provide for access to the grid by even one utility-scale solar project (a 69 kV line traditionally can carry from 25 MW up to 75 MW at the most. Assuming 9 acres / MW for solar development the line could only carry 675 acres worth of</p>

<b>EIS Section</b>	<b>Page/Line</b>	<b>Comment/Suggested Revision</b>
		solar energy at the very most if it were completely dedicated to solar energy). This is an invalid assumption. If the Solar PEIS is to “speed up” permitting in SEZs then construction of new transmission and related substation(s) adequate to accommodate solar build out of the Delamar Valley site must be assumed and analyzed in the PEIS.
<b>11.2.1.2</b>	<b>11.2-3</b>	<p>What entity is responsible for developing and maintaining any new roads and rights-of-way?</p> <p>All access road ROW should be in the name of Lincoln County.</p> <p>At a minimum, all new roads must be designed and built per all applicable County plans, regulations and standards. In addition to identifying which entity is responsible for developing and maintaining any new roads and rights-of-way and maintaining any existing roads used by this project, the Final Solar PEIS should consider and itemize appropriate locations to obtain this road building material.</p>
<b>Table 11.2.1.2-1</b>	<b>11.2-3</b>	Permitted but not yet built transmission lines should be included in the table. For example, the Nevada One Line Project is a fully permitted 500 kV transmission line scheduled to begin construction before release of the Draft Solar PEIS. Required substations needed to access the new line must be analyzed in the Draft Solar PEIS.
<b>Table 11.2.1.3-1</b>	<b>11.2-5</b> “Lands and Realty”	<p>The County must be consulted, and must approve any closure or relocation of County Roads within the SEZ. The County recommends that the table acknowledge this requirement.</p> <p>New roads not considered necessary for long-term operation should be abandoned and carefully reclaimed.</p> <p>This table references a new 8-mi. access road to be built to the north to connect to U.S. 93. Figure 11.2.1.1-1 shows an assumed access road to the west to access to U.S. 93. Which is correct? The County prefers the use of the existing north-south access road along the existing 69-kV power line that ties into US 93 near Oak Springs Summit.</p> <p>The County does not feel that the designated 8-mile route through Alamo Canyon is feasible to support hauling of construction and materials due to topographic limitations.</p>



<b>EIS Section</b>	<b>Page/Line</b>	<b>Comment/Suggested Revision</b>
		The existing power line road should be the preferred access route, and it should tie into US 93 on the southeastern edge of Dry Lake Valley.
<b>Table 11.2.1.3-1</b>	<b>11.2-5</b> “Lands and Realty”	The County does NOT support development of a new road and additional new disturbance. The existing road should be utilized, improved and maintained as appropriate as the only option, not a priority.
<b>Table 11.2.1.3-1</b>  <b>11.2.4.1</b>	<b>11.2-6</b> “Rangeland Resources: Livestock Grazing”	<p>The 18% of the allotment that would be “precluded” from grazing contains the highest quality forage on the most accessible topography. The loss of 606 AUMs that has been estimated is likely a gross underestimation.</p> <p>Delamar Valley Livestock that holds the grazing permit for the Buckhorn and Dry Springs Allotments. Ranch Manager John Sanders described the impacts to their overall operations within the allotment and overall operation during a field tour on February 17, 2011.</p> <p>In summary, the proposed SEZ is located in the heart of his operation. The Buckhorn Allotment provides key winter forage in the white sage flat where the SEZ is proposed to be located. If developed, the SEZ as constituted would eliminate the majority of the accessible forage within the Buckhorn Allotment in addition to 13 stockwater reservoirs, and all 3 corrals located within the allotment. These impacts would greatly limit the grazing capacity of the allotment if not rendering the allotment completely infeasible for livestock grazing. In order to accurately depict the impacts of solar development within the SEZ, the analysis should indicate the loss of most, if not all 9,268 AUMs within the Buckhorn Allotment. It should also be recognized that any loss of AUMs would be in perpetuity.</p> <p>Mr. Sanders also indicated that the SEZ as mapped within the Oak Springs Allotment would result in the loss of one watering source, sever a water pipeline, and result in the loss of two more water sources served by the water line within the Buckhorn Allotment. The impacts to the Delamar Valley Cattle Company ability to make beneficial use of this certificated water source removes their ability to retain their water certificate in good standing with Nevada Water Law.</p> <p>The lost use of water rights associated with impacted stockwater sources would also be</p>

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11.2.3.3		<p>considered private property takings as the State of Nevada classifies water rights as private property.</p> <p>The County prefers that the entire Delamar SEZ be classified as “lands excluded from utility-scale solar energy development” in order to avoid these impacts to the grazing permittee. <b>In the event that <u>any portion</u> of the SEZ is deemed suitable for solar development</b>, specific mitigation actions, such as relocation of corrals, water sources and pipelines should be included as site-specific mitigation actions. The development of new water sources and corrals should also be considered to limit impacts. All mitigation actions should be conducted in close coordination with Lincoln County, the BLM Caliente Field Office, and the grazing permittee.</p>
Table 11.2.1.3-1	Special Status Species	<p>In close consultation with the USFWS, Lincoln County has recently completed the Southeastern Lincoln County Habitat Conservation Plan (SLCHCP) and related FEIS (whose planning area includes Delamar Valley). The County was issued an ESA Section 10 Incidental Take Permit for desert tortoise and southwestern willow flycatcher on May 5, 2010. Throughout the nine-year SLCHCP planning process the Las Vegas-based USFWS biologists never once indicated that Delamar Valley was potential desert tortoise habitat. In addition, the BLM Ely District RMP (November 2007) clearly does not include Delamar Valley as desert tortoise habitat (see Map 2.4.7-1). The elevations in Delamar Valley are considered to high for desert tortoise in Lincoln County. Incorrectly inferring the possible presence of desert tortoise in Delamar Valley will only serve to frustrate rather than facilitate solar energy development in this area.</p>
Table 11.2.1.3-1  11.2.5	11.2-7 “Recreation ”	<p>Consultation with the County and the BLM Caliente Field Office to ensure no loss of recreational access should be included as a SEZ-Specific Design Feature to limit impacts to recreation.</p> <p>It is absurd to think that loss of what is now limited (yet important) and dispersed recreational use of the SEZ would result in a loss of 1,754 jobs in the ROI. If this were any where close to accurate, why would anyone, particularly Lincoln County, ever consider solar development in the Delamar Valley SEZ. The inclusion of Clark County in the ROI and related all socioeconomic modeling has resulted in totally inaccurate estimates of impacts. The entire</p>



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	Access Rd Const.	<p>socioeconomic analysis must be revised.</p> <p>It will not require 186 workers to construct 8 miles of new or improve 8 miles of existing access road. This level of const. employment needs to be reconsidered. Lincoln County prefers improving the existing road.</p>
<p><b>Table 11.2.1.3-1</b></p> <p><b>11.2.6.3</b></p>	<p><b>11.2-7</b></p> <p>“Military and Civilian Aviation”</p>	<p>Per Instructional Memorandum No. 2011-061 issued by the Department of the Interior on February 7, 2011, any project conflicting with “Department of Defense operating areas, including areas with significant radar, air space or land use conflicts” should be considered as having a medium level of potential impact that can potentially be resolved. Unless SEZ-Specific Design Features can be adopted for the Delamar SEZ, it should be classified as “lands excluded from utility-scale solar energy development”.</p>
<p><b>Table 11.2.1.3-1</b></p>	<p><b>11.2-7</b></p> <p>“Geologic Setting and Soil Resources”</p>	<p>There will be major impacts to soil resources resulting in a long-term loss of vegetation and potential for major wind and water erosion. To have no proposed mitigation for this impact is a major oversight. The County requests that any developer be required to post a restoration bond to help mitigate impacts to soils as well as a soils and vegetation mitigation plan. Lincoln County should be involved in coordinating and monitoring the mitigation measures installed through this restoration bond.</p>
<p><b>Table 11.2.1.3-1</b></p>	<p><b>11.2-7&amp;8</b></p> <p>“Water Resources”</p>	<p>Impacts should include the potential for private property takings for any existing water right whose point of diversion, place of use, and manner of use or transmission system is impacted.</p> <p>SEZ-Specific Design Features should include an approach for resolving any private property taking, including loss of water rights that are considered to be private property.</p> <p>SEZ-Specific Design Features should require that only facilities with low water use requirements be developed within this SEZ. Lincoln County supports this requirement.</p>
<p><b>Table 11.2.1.3-1</b></p>	<p><b>11.2-8&amp;9</b></p> <p>“Vegetation”</p>	<p>SEZ-Specific Design Features should:</p> <ol style="list-style-type: none"> <li>1. In addition to a vegetation management plan, the developer should also be required to post a restoration bond prior to ground disturbing activities. Lincoln County should be involved in coordinating and monitoring the mitigation measures installed through this restoration bond.</li> </ol>

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		2. Complete avoidance of white sage (winter fat) vegetation
<b>Table 11.2.1.3-1</b>	<b>11.2-11</b> “Wildlife: Mammals”	Much of the proposed SEZ is within white sage (winter fat) vegetation, which is key winter forage; however, this is not addressed within the table.
<b>Table 11.2.1.3-1</b>	<b>11.2-14</b> “Air Quality and Climate”	Mitigation measures should include coordination and consultation with NDEP for air quality permitting and BMPs.
<b>Table 11.2.1.3-1</b>	<b>11.2-17</b> “Socioeconomics”	<p>The potential loss of recreation and multiple uses is of great concern to the County. No proposed mitigation is a major oversight, and could result in a major economic loss to the County. Mitigation should include coordination with recreational users to minimize impacts to recreation and and continued public access.</p> <p>The potential loss of livestock grazing is a great concern to the County. The long-term job and income numbers seem to be extremely low, and likely don't take into consideration that the Buckhorn Allotment is a small, but critical component of a much larger livestock operation that provides jobs and income from both the allotment and associated public land. The loss of grazing on the allotment is much more far-reaching that presented here.</p> <p>It should be noted that construction jobs and income are temporary and do not ultimately help to replace the loss of revenue to long-term uses such as recreation and livestock grazing. In addition, the new access road may not even be built.</p> <p>Whether the roads are paved or not is an important consideration. On the one hand, paving of the roads for access during construction will likely enhance commuting worker and truck transport safety. On the other hand during operations traffic on the access roads will be very minimal, especially if development in the SEZ is limited to solar PV, as Lincoln County recommends. Lincoln County will likely be required to maintain said upgraded access road and maintenance of a paved roadway may be far more expensive (fiscal impact) than maintenance of an upgraded gravel road. The County believes that the developer(s) should be responsible for the cost of road maintenance. Busing of employees from transportation</p>



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		<p>terminal located at Alamo and Caliente may serve to greatly reduce worker commuting traffic on the access road. All of these issues and alternatives need to be discussed and analyzed in the PEIS.</p> <p>The socioeconomic analysis in this PEIS must state and analyze the fiscal consequences of the assumption that all sales taxable materials used in construction of the solar facilities will have Lincoln County as their point of delivery for tax purposes. All shipments by rail should be off-loaded in Caliente to ensure that Lincoln County is the place of delivery for materials shipped by rail, then off-loaded and shipped to the SEZ by truck. Lincoln County does not support any such shipments being made to Las Vegas for subsequent shipment by truck to the SEZ.</p>
<b>Table 11.2.1.3-1</b>	<b>Environmental Justice</b>	<p>Because there is no population within the Delamar Valley and early statement to this effect should have been made in DPEIS and Environmental Justice should have not been carried forward for detailed analysis. The EJ analysis contained in the body of the DPEIS goes far beyond that required by CEQ Guidance regarding analysis of EJ impacts.</p>
<b>Table 11.2.1.3-1</b>	<b>11.2-18</b> "Transportation"	<p>There is the potential for some major problems associated with high traffic rates on unpaved roads leading to and within the project area.</p> <p>Mitigation must include defining who is responsible for developing and maintaining these roads and associated rights-of-way and who is responsible for dust issues associated with their use. See section 11.2-17 Socioeconomics comments</p> <p>At a minimum, all roads must be developed and maintained per applicable County plans, regulations and standards.</p>
<b>11.2.2.2</b>	<b>11.2-19</b>	<p>Later sections of the DPEIS essentially conclude that due to limitations in water resources in Delamar Valley and USAF issues, only solar PV is likely feasible in the area. Lincoln County recommends that only solar PV be considered compatible for development in the Delamar Valley SEZ. Solar PV would mitigate water resource, USAF, night sky issues and would not present "the image of "a large industrial area" associated with solar thermal technologies.</p>
<b>11.2.2.2.2</b>	<b>11.2-20</b>	<p>Reliance on the existing 69 kV line is an unreasonable assumption. Need to assume and analyze one or more new 500 kV lines and related substations are developed. Failure to do so will inhibit the ability of the Solar PEIS to facilitate solar development in Delamar Valley.</p>
<b>11.2.3.2.1</b>	<b>11.2-25</b>	<p>Impacts to the quality of within-wilderness experience from activities outside of the designated</p>

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	11.2-25	<p>wilderness boundary are not to be considered by BLM. Please verify that the analysis of impacts to the quality of the within-wilderness experience resulting from facilities located outside wilderness is appropriate. These comments also apply to specific conclusions of impact on wilderness areas on Page 11.2-27/8&amp;21.</p> <p>The analysis should note that of the various solar technologies, solar PV would have the least, if any, night sky impacts.</p>
11.2.3.2.3	11.2-28	Reliance on existing transmission is an unreasonable assumption.
11.2.3.3	11.2-29	Limiting development in the Delamar to solar PV is a mitigation measure which should be described to avoid impacts to USAF, water resources, night skies, etc.
11.2.4.1.2	11.2-33	<p>To assume that because 18% of the Buckhorn Allotment is within the SEZ equates to an 18% reduction in AUMs is incorrect. An 18% reduction in AUMs alone is not a “small” impact by any means, and the County does not support this reduction.</p> <p><b>See above comments to Table 11.2.1.3-1 “Rangeland Resources” pertinent to true impacts to the Buckhorn.</b></p>
11.2.5.2	11.2-35	The playa represents only about 2,500 acres of the total Delamar Valley SEZ yet the playa is the location where the vast majority of all recreation occurs. Later section of the PEIS suggests that development of solar on the playa may be infeasible due to blowing dust and poor, wet soils. The discussion here needs to better reflect the recreational use of the SEZ and likely impacts related to solar development therein.
Table 11.2.9.2-2	11.2-60	Wet-cooled technologies should be identified as infeasible because they all require water in amounts, which exceed the perennial yield of the Delamar Valley groundwater basin.
11.2.9.2.2	11.2-61	Lincoln County concurs with the conclusion that PV systems would be the preferred technology for full build-out scenario in Delamar Valley. Limiting development in Delamar Valley to solar PV should be considered as a mitigation measure.
11.2.9.2.4	11.2-62	In allocating virtually all of the perennial yield in the Delamar Valley for export to Las Vegas, the Nevada State Engineer found that pumping of 2500 ac. ft. would have no adverse on any other water rights or uses in Delamar or adjacent valleys (including the Pahrangat NWR). The PEIS needs to note that pumping of groundwater up to the perennial yield of the basin would result in no adverse impacts outside of Delamar Valley.



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<b>11.2.9.2.4</b>	<b>11.2-63</b>	Lincoln County concurs with the conclusion that PV systems would be the preferred technology for full build-out scenario in Delamar Valley. Limiting development in Delamar Valley to solar PV should be considered as a mitigation measure.
<b>11.2.9.3</b>	<b>11.2-63</b>	Existing groundwater rights can also be purchased or leased from a willing owner. A specific water rights holder, such as the Southern Nevada Water Authority (SNWA) should not be singled out as this shows predetermined bias.
<b>Figure 11.2.10.1-2</b>	<b>11.2-68</b>	The inclusion of wetlands west of U.S. 93 on this map is not necessary and may imply impacts when none exist. Also, construction of the access road would not have any impact to the west of U.S. 93 as the road would tie into the east side of U.S. 93. the one-mile impact buffer at the west end of the access road is misleading as no construction would occur outside of the existing U.S. 93 ROW west of the existing highway.
<b>Table 11.2.10.1-1</b>	<b>11.2-69</b>  <b>11.2-69 / 17-20</b>  <b>11.2-69 / 35-36</b>	<p>Because of its importance as winter livestock forage, the locations of white sage (winterfat) within the Delamar SEZ should be depicted on a map and acreage impacts to the species shown on Table 11.2.10.1-1.</p> <p>The County strongly suggests including USDA NRCS / BLM published soil survey information with accompanying Ecological Sites provided for any parts of the SEZ. The broad land cover types utilized under the SWReGAP are useful but lack-site specific information that will be vital to project development and restoration activities. (line 17-20)</p> <p>This sentence suggests that vegetation has deteriorated over time as a result of livestock grazing. What evidence is available to support this statement? Early grazing practices did in fact impact vegetation, however the resilience of the native plants, including range management practice over the past 60 years under BLM management has greatly restored the native plants, many of which are unique and of extreme value. Review of the Ecological site information will show that rangelands are in fact in generally good condition today. We question the value of line 35 and 36 to the report on this premise.</p>
<b>11.2.10.1</b>	<b>11.2-75</b>	The area described here is outside the area of indirect impacts and should not be described here. This paragraph should be deleted.
<b>11.2.10.2</b>	<b>11.2-78</b>	This is an erroneous conclusion reached because the 1-mile impact corridor for the access road has been inappropriately extended 1 mile to the west of the intersection of the access road and

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		U.S. Hwy 93. Construction would be limited to the 400' wide U.S. Hwy 93 ROW and would likely be concentrated on the east side of U.S. 93.11.2.11.2.3
<b>11.2.10.3</b>	<b>11.2-81</b>                      <b>11.2-82</b>	<p>The County supports the following additional mitigation measures:</p> <ol style="list-style-type: none"> <li>1. Areas dominated by white sage vegetation should be avoided.</li> <li>2. All surface disturbances shall be limited to the maximum degree possible by clearly delineating limits of disturbance.</li> <li>3. Development must begin within a month of the original disturbance or the site must be revegetated with native and adapted species in order to prevent invasion of noxious weeds and loss of soil due to wind and water erosion.</li> <li>4. The use of existing roads shall be required in lieu of developing new roads.</li> </ol> <p>Re-establishment of vegetation will in fact be very difficult, particularly if supplemental water is not made available to assure plant establishment. Winterfat communities are extremely sensitive and difficult to reestablish. Coordinate with Charlie Clements, USDA-ARS, Reno Lab, assure that best indigenous science is applied. Winterfat communities area reason that the Valley fans and floors are so highly values as a source of winter forage for livestock, wildlife, and also wild horses. This plant has a protein content of &gt;14%. It is very susceptible to misuse or disturbance. Every effort should be made to either avoid winterfat stands, or to tighten the footprint to minimize disturbances.</p> <p>Fugitive dust can encourage dust pneumonia in livestock and/or discourage use in the affected areas thus creating distribution problems. Every effort should be made to reduce dust during and post construction by use of water trucks on site, and use of effective erosion control practices during and after construction.</p> <p>It would have been good to see an example of the proposed Integrated Veg Management Plan and Ecological Resources Mitigation and monitoring plan. These plans should be developed in coordination with local governments and user groups that have long-term experience with the existing environment and planning. Review and inputs should also include USDA ARS, UNR CABNR, and NDOW.</p>

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		<p>The use of mechanical and/or biological methods to control invasive species is very questionable. To mechanically disturb any areas will potentially result in an increase in invasive species. We know of no biological treatments short of animal grazing that can be effectively utilized for the species of concern.</p> <p>Halogeton is recognized as a poisonous plant for livestock.</p>
11.2.11.1.3	11.2-90	Please show "Unnamed Wash" on reference maps, so it is clear what area is being referred to.
11.2.11.2.3	11.2-92	This bulleted sentence should begin, "In areas where project construction would occur during the nesting season, pre-disturbance surveys..."
Table 11.2.11.2-1	11.2-93	<p>Because access road construction would not occur west of the U.S. 93 ROW, there would be no direct impacts to 12,210 acres of potentially suitable southwestern willow flycatcher habitat.</p> <p>Because the Nevada State Engineer will not allow groundwater pumping beyond the perennial yield of Delamar Valley and because the State Engineer has determined that pumping the perennial yield of Delamar Valley would have not impacts on other basins and areas, including the Pahrnagat NWR, there would not be impacts to 100,949 acres of potentially suitable southwestern willow flycatcher habitat.</p> <p>Why is there discussion of impacts to potentially suitable southwestern willow flycatcher habitat? Habitat related take is only associated with impacts to "existing" suitable habitat. If there are no impacts to "existing suitable" habitat, there are no impacts to disclose.</p>
11.2.11.4.1	11.2-124	<p>No access road construction would occur outside the 400' wide ROW for U.S. Hwy 93 and most, if not all, access road construction would occur on the east side of the highway. Extension of the area of indirect effects 5,280' (1 mile) west of U.S. Hwy 93 is inappropriate. The discussion here of potential impacts to Pahrnagat Creek is then, also necessarily inappropriate.</p>
Figure 11.2.12.1-1	11.2-129	The depiction of the occurrences of ESA species on this map is not consistent with Figure 11.4.12.1.1 for Dry Lake Valley North in those areas where the two maps overlap.



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<b>Table 11.2.12.1-1</b>	<b>11.2-148</b>	There is no desert tortoise habitat in Delamar Valley (see previous Lincoln County comments regarding this issue).
<b>11.2.12.1.1</b>	<b>11.2-162</b>	Only the western portion of the proposed access road is included in areas identified by USFWS-Las Vegas and BLM Ely District as desert tortoise habitat. Delamar Valley itself is not identified by either agency as desert tortoise habitat. Not sure there are any “known occurrences” or sightings of desert tortoise in the access road corridor.
<b>11.2.12.2</b>	<b>11.2-104</b>	Is this a “bounded analysis”. As a general comment, all analyses in the Solar PEIS should be specified and defensible as bounded analyses. Bounding the assessment of impacts will serve to facilitate timely development of solar projects in SEZs ultimately designated by BLM/DOE. Failure to do an adequate bounded analysis will result in excessive requirements for additional NEPA.
<b>1.2.13.2.2</b>	<b>11.2-208</b>	The assumption of avoided emissions from replacement of existing fossil-fueled plants by solar generation is unrealistic given the capital investment associated with existing power plants. Rate payers are unlikely to be willing to pay for these stranded assets. If this assumption is to be made in the Solar PEIS then the socioeconomics section must assess the loss in employment associated with shuttering existing fossil-fuel plants.  More likely, solar will avoid future emission which would have otherwise been associated with additional fossil-fuel fired plants.
<b>11.2.15.2.2</b>	<b>11.2-241</b>	If impacts are minimal and given a lack of receptors in the area, no further modeling need be suggested. Suggest deleting the last sentence of this paragraph.
<b>11.2.16.2</b>	<b>11.2-245</b>	Here and elsewhere, it is not clear whether the 58 acres is entirely new disturbance or includes that portion of the existing road which is already disturbed. If the existing road is to be rebuilt, the net acreage of new disturbance needs to be referred to here and elsewhere in the ADPEIS.
<b>11.2.17.1.3</b>	<b>11.2-252</b>	Pioche should be Caliente. The UPRR mainline does not pass through Pioche.
<b>11.2.17.3</b>	<b>11.2-257</b>	Mitigation might include upgrading the existing access road rather than constructing a new access road, which would reduce new disturbance. This needs to be considered throughout the document.
<b>11.2.18.2</b>	<b>11.2-262</b>	Through the formal Native American consultation process concerns raised in one consultation

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	<b>11.2-262</b>	<p>for another project can not be extrapolated or assumed to apply to solar development in Delamar Valley. For example, the SNWA water project has been very controversial and concerns raised by Tribes with that project can not serve as a proxy for concern over development of solar in Delamar Valley. The fact is that Delamar Valley solar development-specific Tribal consultation has not identified any Tribal concerns with solar development in Delamar Valley. This is what must be disclosed in the PEIS.</p> <p>In addition to what? As a result of formal Native American consultation to date, there have been no specific concerns identified. Delete the word additional.</p>
<b>11.2.18.3</b>	<b>11.2-263</b>	As a matter of policy, BLM will not require off-site mitigation. However, Lincoln County would intend to address offsite mitigation during consideration of County-issued special use permits which will be required for development of solar in the SEZ. Lincoln County's role in requiring offsite mitigation should be discussed in the PEIS.
<b>11.2.19.1</b>	<b>11.2-265</b>	As discussed in previous comments, the manner in which Clark County has been included in the affected environment and the inability of IMPLAN to consider Lincoln County impacts as anything more than noise within the ROI has resulted in a complete mis-statement of the potential impacts of solar development in Delamar Valley. This entire section needs to be significantly revised to better reflect the likely impacts of solar development in Delamar Valley. IMPLAN is an input-output model which generally works well for small rural economies. IMPLAN does not handle mixing of the very large Clark County economy with the very small Lincoln County economy. Suggest talking to Dr. Tom Harris of the University of Nevada Reno, Center for Economic Development about the appropriate use of IMPLAN in modeling impacts of solar development in Delamar Valley.
<b>Table 11.2.19-4</b>	<b>11.2-268</b>	Current unemployment rates are available and should be used, 2009 population data are available from the Nevada State Demographer.
<b>11.2.19.2.1</b>	<b>11.2-278</b>  <b>11.2-279</b>	<p>The inclusion of Clark County in the ROI has rendered the estimated impacts presented in this section useless and misleading.</p> <p>With unemployment in Lincoln County and Clark County exceeding 12 and 13 percent, respectively it is unlikely that any one will be in-migrating to the ROI for solar development related employment.</p>

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11.2.19.2. 1	11.2-280  11.2-280  11.2-280	<p>There are no USFS grazing permits directly impacted by the Delamar Valley SEZ.</p> <p>Add a new sentence to the end of the paragraph as follows. “If the reduction in authorized grazing use in the SEZ cause a reduction in permittee herd size, then economic impacts would also be associated with reduced efficiency and use of commensurable private property including water rights and/or supplemental feeding and associated transportation costs.”</p> <p>It is ridiculous to think that 110 direct and 186 total jobs would be created through construction of either a new 8 mile access road or upgrading of an existing access road.</p>
11.2.19.2. 2	11.2-281	<p>Given high unemployment rates in Lincoln and Clark counties, it is wrong to assume that there would be in-migration to the combined area. There is likely to be in-migration into Lincoln County, depending upon how long construction lasts. Again, all analyses in 11.2.19 need to be redone to hone in on impacts to Lincoln County, apart from the dominating effect Clark County has had on the analyses.</p>
11.2.19.2. 2	11.2-288	<p>Appendix M offers no explanation of methods and assumptions used to estimate sale tax impacts. The estimates presented on Page 11.2-288 appear low. If project cost is \$1million per MW and just 10 percent of project cost is taxable equipment, a sale tax rate of 6-7 percent would yield as much as \$1 million, not the \$200,000 described in the text. The methods and assumptions used in calculating all sales and use taxes, personal and property taxes and any other taxes should be clearly stated. In fact, it does not appear as though personal property or ad valorem (property taxes) have been considered at all.</p>
11.2.20	11.2-291/all  11.2.20-1	<p>There are no people resident in Delamar Valley so pursuant to CEQ Guidelines there are no environmental justice (EJ) impacts.</p> <p>Definition of an additional 50-mi. impact radius for environmental justice is not defensible. If such an approach were applied to an industrial project in New Jersey any project in that state would be found to have an EJ impact in many locations throughout the state. The EJ Executive Order and related CEQ Guidelines followed evidence that noxious or undesirable industrial projects were being sited disproportionately in <u>neighborhoods</u> or <u>communities</u> characterized by predominately low-income and/or minority populations. Never was the issue of EJ ever intended to be applied to an area 50 miles beyond a valley absent of any population wherein an</p>



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		industrial project (solar development) is being proposed. The analysis of EJ presented in the ADPEIS is unnecessary beyond a simple finding that there are no persons residing in Delamar Valley and hence there are, nor given the CEQ Guidelines could there be, no EJ impacts from solar development in Delamar Valley.
<b>Table 11.2.22.1-1</b>	<b>11.2-304</b>	For many of the resources/issues listed in this table there were no impacts identified from Delamar Valley SEZ development. No cumulative impact analysis for these resources/issues is required. Native American Concerns, EJ, Minerals are examples.
<b>11.2.22.2.2</b>	<b>11.2-311</b>	The cumulative impact analysis must address the possible designation of a Dry Lake Valley North SEZ?
<b>11.2.22.4</b>	<b>Entire Section</b>	Generally, the analysis of cumulative impacts fails to offer any real quantitative analysis of impacts. For example, how many acres of vegetation in Lincoln County would be disturbed by all of the on-going and reasonably foreseeable future actions and what would be the effect of such cumulative impacts on resource trends? How much water would be required by all projects? What would be the total employment in Lincoln County from all the projects?

**Standard Review Form**  
 Draft Programmatic Environmental Impact Statement for Solar Energy  
 Development in Six Southwestern States

**Reviewer's Name:** Board of Lincoln County Commissioners

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**Reviewer's Organization:** Lincoln County, Nevada

**Section or Chapter Number and Date of Reviewed Document:**

Chapter 11.4 – Dry Lake Valley North SEZ dated December, 2010

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11.4	General	<p>The County recognizes the value of combining solar development activities into an energy park (SEZ) rather than widely dispersed solar installations and existing right-of-way application process. As such, the County OPPOSES the “Solar Energy Development Program Alternative (the Preferred Alternative)” but SUPPORTS the “Solar Energy Zone Program Alternative” provided that SEZs are located in areas that limit the impacts to other multiple uses, critical habitats and resource values.</p> <p>SEZs should be located in areas with “Low Potential for Conflict” per the Screening Criteria listed in Instruction Memorandum No. 2011-061 regarding Right-of-Way Management for Solar and Wind Energy issued by the Department of the Interior on February 7, 2011. The SEZ Program Alternative will limit the exorbitant amount of time, money and energy (on behalf of the County, local stakeholders and State and Federal Agencies) that goes into making sure that solar development rights-of-way are “smart from the start” and sited in appropriate locations.</p>

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		<p>The County has previously advocated for a 10,200-acre solar energy zone within the northeast portion of the Ely Springs Cattle Grazing Allotment. After further input from the Ely Spring Cattle Allotment Permittee, County Commission and various stakeholders, Lincoln County has revised its position to include the western half of the Ely Springs Cattle Allotment as lands suitable for utility-scale solar energy development (Per Attached Map of the Ely Springs Cattle Allotment). The County proposed SEZ would include approximately 30,400 acres of BLM-administered public land.</p> <p>The County is willing to support this area as an SEZ site because the grazing permittee has invited development within their allotment. The permittee also has substantial water rights associated with the allotment that could be utilized. There are existing and planning transmission lines and corridors within or adjacent to the area, and the majority of the suggested area is included within the Dry Lake North SEZ proposed in the DPEIS.</p>
11.4	General	<p>The County does not support solar development (total acres proposed for development within SEZs) in excess of the capacity of existing or reasonably foreseeable power transmission facilities.</p> <p>North-south running power lines tend to be common to both the Dry Lake North and Delamar SEZs, and include:</p> <ul style="list-style-type: none"> <li>• An existing 69 kV LC Power District #1 Line</li> <li>• The proposed 500 kV LS Power / NV Energy One Nevada Line (600 MW Capacity per LS Power)</li> <li>• The proposed 500 kV NV Energy Line, and</li> <li>• The proposed 230 kV SNWA Line</li> </ul> <p>Generally the <i>maximum</i> transmission line capacity is 1,500 MW for a 500 kV line, 500 MW for a 230 kV line, and 75 MW for a 69 kV line. Therefore, the maximum capacity of existing transmission lines or those under consideration in the reasonably foreseeable future is approximately 3,575 MW. In reality the line capacities would likely be much less (approximately half of the maximum capacity ratings) given the line length, substation and transformer configuration, which results in approximately 1,800 MW of line capacity. Assuming half of this maximum capacity would be available for solar (a very generous</p>



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		<p>assumption) and assuming production of 9 acres / MW for a solar development (per the assumptions used in the Draft PEIS), the maximum solar acres supported by existing or foreseeable line capacity within the Dry Lake North and Delamar SEZs is approximately 8,000 combined acres. Assuming an 80% build-out of the designated SEZ areas (per the assumptions used in the Draft PEIS), the combined SEZ area for both the Dry Lake North SEZ and the Delamar SEZ combined should NOT exceed 10,000 acres.</p> <p>The County has identified an area within the Ely Springs Cattle Allotment that exceeds this required maximum acreage per reasonably foreseeable transmission capacity. Therefore, designating the Delamar SEZ and those portions of the Dry Lake North SEZ not supported by the County as “lands excluded from utility-scale solar energy development” should have no impact on the overall feasibility of solar energy production within Lincoln County, nor should it encumber the renewable energy goals of the State of Nevada of the current Federal Administration based on the need for transmission capacity.</p>
11.4	General	<p>The County fully supports the Renewable Energy Goal found on page 73 of the Ely District Record of Decision and Approved Resource Management Plan dated August 2008 (BLM/NV/EL/PL-GI08/25+1793) that states “Goals – Renewable Energy: Provide opportunities for development of renewable energy sources such as wind, solar, biomass and other alternative energy sources while minimizing adverse impacts to other resources.”</p> <p>The proposed Dry Lake North SEZ does not “minimize adverse impacts to other resources” including, but not limited to: Water Resources, Soil Resources, Vegetation Resources, Visual Resources, Recreation, Livestock Grazing, and County Socioeconomics.</p> <p>Lands not supported by the County for solar development in the above comment, but under analysis by the DPEIS within the proposed Dry Lake North SEZ should be classified as “lands excluded from utility-scale solar energy development”.</p>
11.4.1.1	11.4-1/20	The nearest existing rail is in Caliente 15 miles away.
11.4.1.1	11.4-1/25	<p>Revise to read, “A 69 kV transmission line owned and operated by the Lincoln County Power District No. 1 passes through the SEZ.”</p> <p>This section should also describe the NV Energy/LS Power 500 kV On Line transmission line</p>

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		which is under construction and will be located immediately adjacent to the Dry Lake Valley North (and Delamar Valley) SEZs.
11.4.1.1	11.4-2/Figure 11.4.1.1-1	<p>This and other similar figures need to depict the existing 69 kV and under construction 500 kV transmission lines available to serve the Dry Lake Valley North proposed SEZ.</p> <p>The branch rail line between Caliente and Prince no longer exists and should be removed from Figure 11.4.1.1-1 and all other figures depicting said rail line.</p> <p>Rather than constructing new access from State Route 318 into the Dry Lake Valley North SEZ, Lincoln County would prefer the existing road along the east side of Dry Lake Valley North from U.S. 93 be upgraded to access the SEZ. All access road ROW should be in the name of Lincoln County. In addition to identifying which entity is responsible for developing and maintaining any new roads and rights-of-way and maintaining any existing roads used by this project, the Final Solar PEIS should consider and itemize appropriate locations to obtain this road building material.</p>
11.4.1.1	11.4-3/8-13	<p>The County supports an alternative SEZ area that is 10,000 acres and meets all of BLMs solar development criteria.</p> <p>The County recognizes the value of combining solar development activities into an energy park rather than widely dispersed solar installations, but not at the expense of all other multiple uses in the area. The County alternative took into consideration the acceptable balance of existing multiple uses with new solar development.</p>
11.4.1.2	11.4-3/33-34	<p>The statement here “the location and size of such new transmission facilities are unknown” is not true. The location and size of the fully permitted and under construction 500 kV On Line transmission line (which will be located immediately adjacent to the Dry Lake Valley North SEZ) are known as is the location of NV Energy’s proposed second 500 kV transmission line through Dry Lake Valley North (which is undergoing ROW processing/permitting and NEPA analysis by BLM). In addition, the 230kV and 600kV transmission lines proposed by Southern Nevada Water Authority and Transwest, respectively, should be described in this section. The text here needs to describe these transmission assets which will be/or are likely to be available to serve the Dry Lake Valley North SEZ.</p>
11.4.1.2	11.4-3/39-40	<p>The existing 69 kV line is too small to provide for access to the grid by even one utility-scale</p>

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		solar project. The assumption that the existing 69 kV line will be available to serve the Dry Lake Valley North SEZ is not a valid assumption. If the Solar PEIS is to “speed up” permitting in SEZs then construction of new transmission and related substation(s) adequate to accommodate solar build out of the Dry Lake Valley North site must be assumed and analyzed in the PEIS.
<b>11.4.1.2</b>	<b>11.4-4/Table 11.4.1.2-1</b>	<p>Permitted but not yet built transmission lines should be included in the table. For example, the On Line project is a fully permitted 500 kV transmission line for which construction has begun. In addition, NV Energy has a pending ROW application for a second 500 kV transmission line which will run the length of Dry Lake Valley North and be located adjacent to the proposed SEZ. Required substations needed to access the On Line and NV Energy transmission lines must be analyzed in the Draft Solar PEIS.</p> <p>The table should reflect access to the Dry Lake Valley North from U.S. 93 to the south rather than from S.R. 318 to the west. Lincoln County prefers access of the Dry Lake Valley North SEZ by way of U.S. 93 which is currently a higher quality road and for which a Lessor degree of impact would be required to upgrade the road to serve the Dry Lake Valley North SEZ. At a minimum, access to U.S. 93 to the south should be analyzed in the DPEIS as an alternative to accessing the SEZ via S.R. 318. This table should also reflect the existing route from the SEZ east over Bennett Pass to US 93 near Panaca.</p>
<b>Table 11.4.1.3-1</b>	<b>General</b>	Comments provided for a similar table in Chapter 11.5 of the DPEIS for the Delamar SEZ also apply to this section. Additional comments listed below are specific to this SEZ and should be considered in addition to comments made for the Delamar SEZ.
<b>Table 11.4.1.3-1</b>	<b>11.4-5 “Lands and Realty”</b>	<p>Solar development will also require coordination with existing and pending ROWs for the DOE Proposed Caliente Rail Corridor from Caliente to Yucca Mountain, the ONLine transmission line, NV Energy’s proposed second 500 kV transmission line and the SNWA pipeline corridor and related 230 kV transmission line.</p> <p>This section of the table should also disclose the acres of disturbance associated with construction of a new access road or upgrading the existing road from the SEZ south to U.S. 93. In addition to identifying which entity is responsible for developing and maintaining any new roads and rights-of-way and maintaining any existing roads used by this project, the Final Solar PEIS must consider and itemize appropriate locations to obtain this road building and</p>



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		maintenance material.
<b>Table 11.4.1.3-1</b>	<b>11.4-5</b> “Specially Designated Areas and Lands with Wilderness Character”	<p>The County agrees that the Dry Lake North SEZ would adversely affect the Silver State OHV Trail (SST), which was legislatively designated as part of the 2004 Lincoln County Land Act. Not proposing any mitigation actions is a major oversight.</p> <p>The County suggests adjusting the eastern-most boundary of the SEZ to avoid the SST and/or provide a provision that development would NOT result in the closure of any roads and routes associated with the SST.</p>
<b>Table 11.4.1.3-1</b>	<b>11.4-5</b> “Rangeland Resources: Livestock Grazing”	<p>The County adamantly opposes the closure of the Simpson Allotment, and does not support any solar development within the allotment.</p> <p>The County has, and continues to support solar development within Dry Lake Valley North only within the Ely Springs Cattle Allotment and associated private lands.</p> <p>The County adamantly opposes the closure of the Dry Lake Valley use area within the Wilson Creek Allotment, and does not support any solar development within the allotment.</p> <p>The County adamantly opposes the closure of the Thorley use area within the Wilson Creek Allotment, and does not support any solar development within the allotment.</p> <p>The County strongly recommends that the SEZ boundary be reconstituted to completely avoid all grazing allotments with the exception of the Ely Springs Cattle Allotment, for which the owner of the grazing permit thereto supports solar development within the allotment and the owner’s adjacent private land.</p>
<b>Table 11.4.1.3-1</b>	<b>11.4-6</b> “Rangeland Resources: Wild Horse and Burros”	<p>The County opposes the closure of this large of an area within the Silver King HMA.</p> <p>The suite of mitigation actions proposed for the Wild Horses and Burros should also be applied to livestock grazing allotments in both the Dry Lake North and Delamar SEZs.</p>
<b>Table 11.4.1.3-1</b>	<b>11.4-6</b> “Recreation”	This section should include the following wording at the end of the existing sentence: “... and would limit recreational access”.

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		<p>The proposed mitigation should be changed so that the new solar development would avoid the existing Silver State Trail, rather than rerouting the existing trail. Planning and promotional efforts for the Silver State Trail have already occurred, so altering the Congressionally designated trail would be much more difficult and have a much broader impact than might be anticipated.</p> <p>Another mitigation action should be added to ensure no loss of public access for recreational activities. This area is popular for other types of public land recreation such as hunting. To not include mitigation that ensures continued public access to a very large area is a major oversight.</p>
<p><b>Table 11.4.1.3-1</b></p>	<p><b>11.4-6</b> “Military and Civilian Aviation”</p>	<p>The County fully supports early coordination with the Department of Defense to resolve any issues with military airspace. Lincoln County suggests limiting solar development in Dry Lake Valley North to solar PV or parabolic troughs with no related improvements exceeding 200’ in height.</p> <p>Has the FAA been consulted in terms of potential issues with the nearby Lincoln County Airport? The DPEIS is silent with regard to potential impacts at said airport.</p>
<p><b>Table 11.4.1.3-1</b></p>	<p><b>11.4-6</b> “Geologic Setting and Soil Resources”</p>	<p>There are going to be major impacts to soil resources, and not providing any mitigation is extremely problematic. Lincoln County suggests the following mitigations be added:</p> <ol style="list-style-type: none"> <li>1. Avoid soil disturbance to the extent possible in all development areas by clearly delineating the boundaries of disturbance</li> <li>2. Avoid soil disturbance to the extend possible in development of associated infrastructure by clearly delineating the boundaries of disturbance and utilizing previously disturbed areas to the fullest practical extent, including existing roadways</li> <li>3. Require that development occur within a month of any land clearing activities, and if that doesn’t occur, require revegetation or engineering measure to limit wind and water erosion</li> <li>4. Require that site developers post a restoration bond so that post-project reclamation is assured</li> </ol>
<p><b>Table 11.4.1.3-1</b></p>	<p><b>11.4-8</b> “Vegetation”</p>	<p>This section needs to identify the significance of white sage as a winter forage source and provide related SEZ-Specific Design Features requiring that areas of white sage vegetation be avoided.</p>

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Table 11.4.1.3-1	11.4-10 “Wildlife: Mammals”	That portion of the SEZ near Bennett Pass will impact a major deer migration area. The County suggests limiting the SEZ to only the western portion of the Ely Springs Cattle Allotment and avoiding the Black Canyon Range and Bennett Pass proper.
Table 11.4.1.3-1	11.4-11 “Special Status Species”	In close consultation with the USFWS, Lincoln County has recently completed the Southeastern Lincoln County Habitat Conservation Plan (SLCHCP) and related FEIS. The County was issued an ESA Section 10 Incidental Take Permit for desert tortoise and southwestern willow flycatcher on May 5, 2010. Throughout the nine-year SLCHCP planning process the Las Vegas-based USFWS biologists never once indicated that Dry Lake Valley North was potential desert tortoise habitat. In addition, the BLM Ely District RMP (November 2007) clearly does not include Dry Lake Valley as desert tortoise habitat (see Map 2.4.7-1). The elevations in Dry Lake Valley North are considered to high for desert tortoise in Lincoln County. Incorrectly inferring the possible presence of desert tortoise in Dry Lake Valley North within the PEIS will only serve to frustrate rather than facilitate solar energy development in this area.
Table 11.4.1.3-1	11.4-16 Native American Concerns	This second section of the first paragraph of this section needs to be deleted. Implying concerns based upon Tribal comments to other projects is inappropriate and speculative at best. The second paragraph of this section must be deleted as it is speculative in nature. To date, no Tribal concerns with the Dry Lake Valley North proposed SEZ have been offered by Tribes. The text should note that Tribal consultation is on-going.
Table 11.4.1.3-1	11.4-16 “Socioeconomics”	<p>The impacts to grazing are drastically underestimated. Revisions to the Socioeconomic impact section of the DPEIS should be reflected in a revised Table 11.4.1.3-1. The impacts to grazing will extend beyond the loss of AUMs but also the loss of value and use of related range improvements and water rights and related private lands owned by grazing permittees impacted by the Dry Lake Valley North SEZ. This section needs to be revised to summarize the full scope of direct and indirect socioeconomic impacts to grazing.</p> <p>Impacts to the Silver State Trail system the recreation impacts may be well underestimated.</p> <p>It should be noted that the loss of jobs and income for grazing and recreation are long-term losses while construction jobs and income are short-term income.</p> <p>Are new access roads anticipated to be paved? Whether the roads are paved or not is an</p>

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		<p>important consideration. On the one hand, paving of the roads for access during construction will likely enhance commuting worker and truck transport safety. On the other hand during operations traffic on the access roads will be very minimal, especially if development in the SEZ is limited to solar PV, as Lincoln County recommends. Lincoln County will likely require solar project developers to financially support County maintenance of said upgraded access road and maintenance of a paved roadway may be far more expensive (fiscal impact) than maintenance of an upgraded gravel road. Busing of employees from transportation terminal located at Alamo and Caliente may serve to greatly reduce worker commuting traffic on the access road. All of these issues and alternatives need to be discussed and analyzed in the PEIS.</p> <p>The socioeconomic analysis in this PEIS must state and analyze the fiscal consequences of the assumption that all sales taxable materials used in construction of the solar facilities will have Lincoln County as their point of delivery for tax purposes. All shipments by rail should be off-loaded in Caliente to ensure that Lincoln County is the place of delivery for materials shipped by rail, then off-loaded and shipped to the SEZ by truck. Lincoln County does not support any such shipments being made to Las Vegas for subsequent shipment by truck to the SEZ.</p>
<p><b>Table 11.4.1.3-1</b></p>	<p><b>11.4-16</b> “Environmental Justice”</p>	<p>Because there is no population within the Dry Lake Valley North an early statement to this effect should have been made in DPEIS and Environmental Justice (EJ) should have not been carried forward for detailed analysis. The EJ analysis contained in the body of the DPEIS for Dry Lake Valley North (and the Delamar Valley and East Mormon Mountain SEZs) is inconsistent with and goes far beyond that required by Executive Order 12898 and as recommended by CEQ Guidance (December 10, 1997) regarding analysis of EJ impacts.</p>
<p><b>Table 11.4.1.3-1</b></p>	<p><b>11.4-17</b> “Transportation”</p>	<p>The DPEIS should have considered the feasibility of construction camps located temporarily in Dry Lake Valley North (similar to approach taken by DOE in the Yucca Mountain related Caliente Rail Alignment EIS).</p>
<p><b>11.4.2.1</b></p>	<p><b>11.4-19/14</b></p>	<p>U.S. 95 should be U.S. 93.</p>
<p><b>11.4.2.2</b></p>	<p><b>11.4-19/33</b></p>	<p>Later sections of the DPEIS essentially conclude that due to limitations in water resources in Dry Lake Valley North and USAF issues, only solar PV or dish engine technology is likely feasible in the area. Lincoln County recommends that only solar PV or dish engine technology be considered compatible for development in the Dry Lake Valley North SEZ. Solar PV or parabolic dish technology would mitigate water resource, USAF, night sky issues and would</p>



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11.4.2.2.2	11.4-20/26-28	<p>not present “the image of “a large industrial area” associated with solar thermal technologies.</p> <p>The existing 69 kV line is too small to provide for access to the grid by even one utility-scale solar project. The assumption that the existing 69 kV line will be available to serve the Dry Lake Valley North SEZ is not a valid assumption. If the Solar PEIS is to “speed up” permitting in SEZs then construction of new transmission and related substation(s) adequate to accommodate solar build out of the Dry Lake Valley North site must be assumed and analyzed in the PEIS.</p> <p>Reliance on the existing 69 kV line is an unreasonable assumption. Need to assume and analyze one or more new 500 kV lines and related substations are developed. Failure to do so will inhibit the ability of the Solar PEIS to facilitate solar development in Dry Lake Valley North.</p> <p>The location and size of the fully permitted and under construction 500 kV On Line transmission line (which will be located immediately adjacent to the Dry Lake Valley North SEZ) are known as is the location of NV Energy’s proposed second 500 kV transmission line through Dry Lake Valley North (which is undergoing ROW processing/permitting and NEPA analysis by BLM). The text here needs to describe these transmission assets which will be/or are likely to be available to serve the Dry Lake Valley North SEZ.</p>
11.4.3.2.2	11.4-27/18-21 11.4-27/23-26	<p>Reliance on existing transmission is an unreasonable assumption.</p> <p>Analysis of the impact of constructing access from the SEZ south to U.S. 93 is needed here and elsewhere in the DPEIS.</p>
11.4.4.1.2	11.4-29/21	<p>This entire section needs to be revised to disclose all direct and indirect impacts to livestock grazing including, but not limited to, loss of AUMs; loss of investment value in range improvements; loss of investment value of stock water rights; and loss of value to private land used in conjunction with public land grazing lands no longer available due to SEZ designation. BLM has not taken the requisite “hard look” at impacts to livestock grazing resulting from designation of the Dry Lake Valley North SEZ.</p> <p>Please utilize the attached map of range improvements within the Dry Lake Valley to fully disclose all potential impacts to range improvements within or adjacent to the proposed SEZ</p>

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		<p>including impacts to:</p> <ul style="list-style-type: none"> <li>• 3 extensive pipeline systems, associated spring sources and water rights</li> <li>• 2 stockwater wells and associated water rights</li> <li>• 18 stockwater troughs and associated water rights</li> <li>• 11 stockwater reservoirs and associated water rights</li> <li>• 1 stockwater tank and associated water rights</li> <li>• 5 livestock corrals and associated water rights</li> <li>• Allotment and pasture fencing</li> </ul> <p>It should also be noted that all stockwater sources are also extensively utilized by wild horses and wildlife, and the loss of these sources will also impact them.</p>
11.4.4.1.2	11.4-30/22	<p>Lincoln County supports a “no net loss of grazing AUMs” standard on a countywide basis; therefore, a 28% reduction in AUMs authorized by the Caliente Field Office is completely unacceptable to the County.</p> <p>Since the lost AUM estimations are based on simple ratios of the percentage of allotment within the SEZ it is likely these are gross underestimations. In addition, several of the permittees that attended the February 17, 2011 field tour indicated that livestock impacts within the Dry Lake North SEZ were enterprise-level impacts. As an example, the Simpson Allotment provides several months worth of winter forage. Without it, the grazing permittee would also be adversely impacted in their operation on surrounding summer allotments and private property holdings, including water rights and base property, would also be greatly impacted.</p> <p>Because of these impacts the County believes the SEZ as constituted violates the Ely District Record of Decision and Approved Resource Management Plan dated August 2008 (BLM/NV/EL/PL-GI08/25+1793) [Ely RMP] that states “Goals – Renewable Energy: Provide opportunities for development of renewable energy sources such as wind, solar, biomass and other alternative energy sources while minimizing adverse impacts to other resources” in addition to “Management Actions – Livestock Grazing LG-1: Make approximately 11,246,900 acres and 545,267 animal unit months available for livestock grazing on a long-term basis (see</p>

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		Map 19).”
11.4.4.1.2	11.4-31/9-14	<p>Permittees should be reimbursed for much more than simply their share of range improvements. The County finds this approach to mitigation completely inadequate.</p> <p>Who is ultimately responsible for determining the extent of the impacts and appropriate mitigation measures?</p> <p>The County recommends developing a local “Impact and Mitigation Identification Committee” to identify site-specific impacts and develop appropriate mitigations. The committee must include representation from the N-4 Grazing Board.</p>
11.4.4.1.3	11.4-31/40	Accessing the Dry Lake Valley North SEZ fro U.S. 93 to the south and upgrading of the existing road, rather than construction of a new access road, should be included as a measure to avoid or minimize impacts.
11.4.9.1.3	11.4-62/21	Suggest deleting this entire paragraph and focusing on Dry Lake Valley North.
<b>Table</b> 11.4.9.2-2	11.4-66	Wet-cooled technologies should be identified as infeasible because they all require water in amounts which exceed the perennial yield of the Dry Lake Valley North groundwater basin.
11.4.9.2.2	11.4-67/12-18	Lincoln County concurs with the conclusion that Dry-cooling or non-cooled solar systems would be the preferred technologies for full build-out scenario in Dry Lake Valley north. Limiting development in Dry Lake Valley to such technologies should be considered as a mitigation measure.
11.4.9.3	11.4-69/31	Existing groundwater rights can also be purchased or leased from a willing owner.
11.4.10.3	11.4-85/9	<p>The County supports the following additional mitigation measures:</p> <ol style="list-style-type: none"> <li>1. Areas dominated by white sage vegetation should be avoided.</li> <li>2. All surface disturbances shall be limited to the maximum degree possible by clearly delineating limits of disturbance.</li> <li>3. Development must begin within a month of the original disturbance or the site must be revegetated with native and adapted species in order to prevent invasion of noxious weeds and loss of soil due to wind and water erosion.</li> <li>4. The use of existing roads shall be required in lieu of developing new roads.</li> </ol>
11.4.11	11.4-83/18-28	For a 60’ road, BLM would never allow 5,280’ of temporary ground disturbance during construction, perhaps 200’ at best. The 1.0 mile area of indirect effects for the access road is excessive. The area of indirect effect should not be projected west of State Route 318 or south

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		of U.S. Hwy 93 (the southern access route involving upgrading of an existing road is preferred by Lincoln County).
<b>11.4.11.2.3</b>	<b>11.4-128/35-38</b>	There are hundreds of thousands of comparable foraging habitat for use by golden eagles and other raptors. Unlike a wind project wherein raptors can be killed through collisions with blades, no direct impacts to raptors resulting from solar energy generation not involving power towers have been identified. Why is any mitigation for golden eagles or other raptors required if there are no impacts from solar generation other than power towers ?
<b>11.4.11.4.1</b>	<b>11.4-155/42-46 11.4-149/1-6</b>	Why describe these surface water features if they are outside the potential effects area? These sentences should be deleted.
<b>11.4.11.4.2</b>	<b>11.4-156/40-46 11.4-157/1-6</b>	Because “No permanent water bodies or streams are present within the boundaries of the proposed Dray Lake Valley North SEZ, the assumed new access road, or the area of indirect effects” (Page 11.4-156, lines 16-17), all of the text in lines 40-46 on Pg. 11.4-156 and lines 1-6 on Pg. 11.4-157 do not apply and should be deleted.
<b>Figure 11.4.12.1-1</b>	<b>11.4-153</b>	The depiction of the occurrences of ESA species on this map is not consistent with Figure 11.2.12.1-1 for Delamar Valley in those areas where the two maps overlap.
<b>11.4.12.2.1</b>	<b>11.4-183/29-46</b>	In close consultation with the USFWS, Lincoln County has recently completed the Southeastern Lincoln County Habitat Conservation Plan (SLCHCP) and related FEIS. The County was issued an ESA Section 10 Incidental Take Permit for desert tortoise and southwestern willow flycatcher on May 5, 2010. Throughout the nine-year SLCHCP planning process the Las Vegas-based USFWS biologists never once indicated that Dry Lake Valley North was potential desert tortoise habitat. In addition, the BLM Ely District RMP (November 2007) clearly does not include Dry Lake Valley as desert tortoise habitat (see Map 2.4.7-1). The elevations in Dry Lake Valley North are considered to high for desert tortoise in Lincoln County. Incorrectly inferring the possible presence of desert tortoise in Dry Lake Valley North within the PEIS will only serve to frustrate rather than facilitate solar energy development in this area.  If no desert tortoise habitat exists in Dry Lake Valley than why would consultation with USFWS pursuant to Sec. 7 of ESA be required. This sentence should be deleted.
	<b>11.4-184/1-3</b>	
<b>11.4.12.3</b>	<b>11.4-197/4-9</b>	If no desert tortoise habitat exists in Dry Lake Valley than why would consultation with



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		USFWS pursuant to Sec. 7 of ESA be required. This sentence should be deleted.
<b>11.4.13.2</b>	<b>11.4-205/23-24</b>	<p>The assumption of avoided emissions from replacement of existing fossil-fueled plants by solar generation is unrealistic given the capital investment associated with existing power plants. Rate payers are unlikely to be willing to pay for these stranded assets. If this assumption is to be made in the Solar PEIS then the socioeconomics section must assess the loss in employment associated with shuttering existing fossil-fuel plants.</p> <p>More likely, solar will avoid future emissions which would have otherwise been associated with additional fossil-fuel fired plants.</p>
<b>Table 11.4.13.2-1</b>	<b>11.4-197</b>	Why does 9,000 acres or more of solar development in Dry Lake Valley North result in lower PM <sub>10</sub> and PM <sub>25</sub> than development of 6,000 acres of solar in Delamar Valley (see Table 1.2.13.2-1, Pg. 11.2-213 of the DPEIS)? This apparent inconsistency suggests that one or both analyses are wrong.
<b>11.4.13.2.2</b>	<b>11.4-199/9-13</b>	<p>The assumption of avoided emissions from replacement of existing fossil-fueled plants by solar generation is unrealistic given the capital investment associated with existing power plants. Rate payers are unlikely to be willing to pay for these stranded assets. If this assumption is to be made in the Solar PEIS then the socioeconomics section must assess the loss in employment associated with shuttering existing fossil-fuel plants.</p> <p>More likely, solar will avoid future emission which would have otherwise been associated with additional fossil-fuel fired plants.</p>
<b>Figure 11.4.14.1-1</b>	<b>11.4-212</b>	The branch rail line between Caliente and Prince shown on this figure no longer exists and should be removed from the figure.
<b>11.4.16.2</b>	<b>11.4-251/42</b>	<p>The text should specify if the new access route follows the alignment of an existing road (hence a road upgrade would be proposed) or if the road to be constructed would be entirely new. To limit new disturbance and related impacts, Lincoln County recommends upgrading existing roads rather than constructing new roads.</p> <p>In contrast to earlier sections of Chapter 11.4 which indicate the access route will be to the west of the SEZ to S.R. 318, here the text indicates the access route will be from the south of the SEZ to U.S. 93. Lincoln County prefers the access be to the south to U.S. 93. Whether both alternatives for access need to be evaluated for all resource issues should be determined by</p>

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		BLM. In any case, Lincoln County recommends that BLM select the south access to U.S. 93 as preferred and carry said access forward for further analysis throughout the Final PEIS. If there are no environmental advantages to the western access alignment to S.R. 318 over the south access to U.S. Hwy 93 there is no need to analyze the western access route as an alternative in the Final PEIS.
11.4.17.1.3	11.4-259/33-42	There is no longer a Pioche to Bullionville Railroad. Nor is there any longer a branch line between Caliente and Prince. The closest rail line to the Dry Lake Valley North SEZ is the UPRR mainline passing through Caliente.
11.4.17.3	11.4-264/17-24	An SEZ-specific design feature to be added here would include upgrading the existing access road south from the Dry Lake Valley North SEZ to U.S. Hwy 93 which would reduce new disturbance rather than constructing a new access road along this southerly alignment or to S.R. 318 to the west. This needs to be considered throughout the document.
11.4.18.2	11.4-269/6-7	The sentence beginning, “ In the area, the Southern Paiute...” should be deleted. Through the formal Native American consultation process concerns raised in one consultation for another project can not be extrapolated or assumed to apply to solar development in Dry Lake Valley North. For example, the Southern Nevada Water Authority water project (which also crosses Dry Lake Valley) has been very controversial and concerns raised by Tribes with that project can not serve as a proxy for concern over development of solar in Dry Lake Valley. The fact is that Dry Lake Valley North SEZ -specific Tribal consultation has not identified any Tribal concerns with solar development in Dry Lake Valley. This, and this alone, is what must be disclosed in the PEIS as far as impacts go. The PEIS should note that tribal consultation is on-going. The PEIS should not presume and identify issues of possible concern to Native American Tribes.
11.4.19	Entire Section	<p>Data presented in this section is not current. As a consequence, modeling and the results thereof are likely inaccurate. In addition, conclusions regarding the likely magnitude of impacts are not accurate. It is imperative that most current data available (in most cases either 2009 or 2010) be used in the analyses of socioeconomic impacts.</p> <p>The manner in which Clark County has been included in the affected environment and the</p>

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		<p>inability of IMPLAN to consider Lincoln County impacts as anything more than noise within the ROI has resulted in a complete mis-statement of the potential impacts of developing solar energy projects in the Dry Lake Valley north SEZ This entire section needs to be significantly revised to better reflect the likely impacts of solar development in Dry Lake Valley. IMPLAN is an input-output model which generally works well for small rural economies. IMPLAN does not handle mixing of the very large Clark County economy with the very small Lincoln County economy. Suggest talking to Dr. Tom Harris of the University of Nevada Reno, Center for Economic Development (an expert with the use of IMPLAN in Nevada) about the appropriate use of IMPLAN in modeling impacts of solar development in Dry Lake Valley.</p>
<p><b>Tables 11.4.19.1-1 through 11.4.19.1-5</b></p>	<p><b>11.4-271-275</b></p>	<p>Current labor force data, employment data and unemployment rates are available and should be used. For Nevada said data is available from the Department of Employment, Training and Rehabilitation. Current population data are available from the Nevada State Demographer.</p>
<p><b>11.4.19.2</b></p>	<p><b>Entire Subsection</b></p>	<p>The inclusion of Clark County in the ROI has rendered the estimated impacts presented in this section useless and misleading. A separate analysis for Lincoln County for most socioeconomic variables and for Dry Lake Valley for recreation is needed.</p>
<p><b>11.4.19.2.1</b></p>	<p><b>11.4-283/11-13</b></p>	<p>With unemployment in Lincoln County and Clark County exceeding 12 and 13 percent, respectively, it is will not be necessary for any workers to in-migrate to the ROI for solar development related employment. The assumption of in-migrating workers and their families and related impacts needs to be revisited throughout Section 11.4.19.2.</p>
<p><b>11.4.19.2.1</b></p>	<p><b>11.4-285/2</b>  <b>11.4-285/4</b>  <b>11.4-285/10</b></p>	<p>There are no USFS grazing permits directly impacted by the Dry Lake Valley North SEZ.</p> <p>Add a new sentence to the end of the paragraph as follows. "If the reduction in authorized grazing use in the SEZ causes a reduction in permittee herd size, then economic impacts would also be associated with reduced efficiency and use of commensurable private property and/or supplemental feeding and associated transportation costs."</p> <p>The estimate of 148 jobs created by constructing 8 miles of access road appears very high. The assumptions behind such a level of employment need to be referenced here.</p>

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11.4.19.2.2	11.4-286/19	Given high unemployment rates in Lincoln and Clark counties, it is wrong to assume that there would be in-migration to the combined ROI area. There is likely to be in-migration into Lincoln County, depending upon how long construction lasts. Again, all analyses in 11.2.19 need to be redone to hone in on impacts to Lincoln County, apart from the dominating effect Clark County has had on the analyses.
<b>Tables 11.4.19.2-3 through 11.4.19.2-6 and Appendix M</b>	various	Appendix M offers no explanation of methods and assumptions used to estimate sale tax impacts. The estimates of sales tax revenue presented in Tables 11.4.19.2-3 through 11.4.19.2-6 appear low. If project cost is were \$1 million per MW and just 10 percent of project cost is taxable equipment, a sales tax rate of 6-7 percent would yield as much as \$1 million, not the \$200,000 described in the text. In reality, the extent of project costs subject to sales tax and the sales tax rates are both higher suggesting that the \$1 million estimate itself would be low. The methods and assumptions used in calculating all sales and use taxes, personal and property taxes and any other taxes should be clearly stated. In fact, it does not appear as though personal property or ad valorem (property taxes) have been considered at all.
11.4.20.1	11.4-297/Entire Subsection	<p>There are no people resident in Dry Lake Valley so pursuant to CEQ Guidelines there are no environmental justice (EJ) impacts.</p> <p>Definition of a 50-mi. impact radius for environmental justice around the Dry Lake Valley North SEZ is not defensible. For example, if such an approach were applied in Rhode Island any project in that state would be found to have an EJ impact in many locations throughout the state. The EJ Executive Order and related CEQ Guidelines followed evidence that noxious or undesirable industrial projects were being sited disproportionately in <u>neighborhoods</u> or <u>communities</u> characterized by predominately low-income and/or minority populations. Never was the issue of EJ ever intended to be applied to an area 50 miles beyond a valley absent of any population wherein an industrial project (solar development) is being proposed. The analysis of EJ presented in the DPEIS is unnecessary beyond a simple finding that there are no persons residing in Dry Lake Valley and hence there are no, nor given the CEQ Guidelines could there be any, EJ impacts from solar development in Dry Lake Valley.</p>
11.4.20.2	11.4-301/6-11	How can there be impacts to EJ if there are no low-income or minority populations within Dry Lake Valley to be impacted? This entire Section 11.4.20 could be shortened as follows, “There are no EJ minority or low income populations in the Dry Lake Valley North SEZ or the immediate surrounding Dry Lake Valley which encompasses several hundred square miles. As



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		a consequence development of solar within the Dry Lake Valley North SEZ would not result in any Environmental Justice impacts.”
11.4.20.3	11.4.20.3/27	Given no population within the several hundred square mile Dry Lake Valley, there can be no “potential for environmental justice impacts”.
11.4.21.1	11.4-303/23-24	There is no rail “stop” in Caliente. Change sentence to read, “The nearest rail access is in Caliente.”
Figure 11.4.21.1-1	11.4-305	Delete the branch rail line between Caliente and Prince as it no longer exists.
11.4.22	11.4-307/16	<p>The estimate of population for the Castleton and Pioche areas of 2,111 is incorrect. The Nevada State Demographer lists only 836 persons in Pioche in 2009 and does not even provide an estimate of population for Castleton given its very small size (perhaps 1-2 dozen homes) (<a href="http://nvdemography.org/data-and-publications/estimates/estimates-by-county-city-and-unincorporated-towns/">http://nvdemography.org/data-and-publications/estimates/estimates-by-county-city-and-unincorporated-towns/</a>).</p> <p>Replace “few” with “no”. There are no persons residing in Dry Lake Valley.</p>
Table 11.4.22.1-1	11.4-308	<p>For many of the resources/issues listed in this table there were no impacts identified from Dry Lake Valley North SEZ development. No cumulative impact analysis for these resources/issues is required. Native American Concerns, EJ, Minerals are examples.</p> <p>The Geographic Extent for analysis purposes has not been justified for each resource. For example, why is an area extending nearly 200 miles to the south (southern tip of Clark County) of the Dry Lake Valley North SEZ included for analysis of cumulative impacts to Environmental Justice when no Environmental Justice impacts were identified for any persons low income or minority populations in Clark County?</p>
Table 11.4.22.2-1	11.4-311	The southern portion of the Southwest Intertie Project is under construction and will be in-service by 2012.
Figure 11.4.22.2-1	11.4-313	Delete branch rail line between Caliente and Prince from this figure.
11.4.22.2.2	11.4-314/27 11.4-314/44-45	<p>Count should be County.</p> <p>DOE has proposed shared-use by commercial freight of its Caliente Rail Alignment.</p>
Table 11.4.22.2-3	11.4-315	Caliente Rail Realignment should be Caliente Rail Alignment.

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		<p>A Final Master Plan and Phase I Improvements Design and Construction Drawing and Specifications were completed for the Alamo Industrial Park in June 2010.</p> <p>The U.S. Highway 93 Corridor and the Eagle wild horse gathers have been completed. The status of many projects listed in this table needs to be updated.</p>
11.4.22.2.2	11.4-316	The cumulative impact analysis section must address the possible designation of a Delamar Valley SEZ?
11.4.22.2.2	11.4-316/36-44	Only one of the four parcels was planned for transfer to Lincoln County and the County purchased said parcel from BLM three years ago. One of the other parcels was sold at auction to a private party two years ago. This entire paragraph needs to be updated.
11.4.22.4	11.4-321/Entire Section	Generally, the analysis of cumulative impacts fails to offer any real quantitative analysis of impacts. For example, how many acres of vegetation in Lincoln County would be disturbed by all of the on-going and reasonably foreseeable future actions and what would be the effect of such cumulative impacts on resource trends? How many total AUMs of forage will be lost in central Lincoln County from all of the Reasonably Foreseeable projects? How much water would be required by all projects? What would be the total employment in Lincoln County from all the projects?
11.4.22.4	11.4-321/21-24	Failure to consider the cumulative impacts associated with permitted and under construction 500 kV and other planned transmission lines to pass through Dry Lake Valley adjacent to the proposed Dry Lake Valley North SEZ and related substations required to interconnect to said permitted and planned transmission lines is a serious omission within the DPEIS.
11.4.22.4	11.4-321/Entire Section	Here and elsewhere in the cumulative impacts section the total acres disturbed from all of the Reasonably Foreseeable Future Action in the area should be disclosed. What is the effect of these total areas of disturbance on various resource trends? This missing information is the cumulative impact analysis. Similar approach should be taken for resources/issues with non-acreage impacts (i.e. total jobs).
11.4.22.4.3	11.4-323/3-10	The DPEIS should have disclosed the total or cumulative number of AUMs which might be lost in central Lincoln County as a result of the numerous Reasonably Foreseeable Projects and the resulting cumulative socioeconomic impact within Lincoln County.
11.4.22.4.19	11.4-332/Entire Subsection	Because there are no Environmental Justice impacts from solar development in Dry Lake Valley North, there can be no cumulative impacts to Environmental Justice. This section needs to be rewritten.

**Standard Review Form**  
 Draft Programmatic Environmental Impact Statement for Solar Energy  
 Development in Six Southwestern States

**Reviewer's Name:** Board of Lincoln County Commissioners

For technical questions, please contact prepares:

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**Reviewer's Organization:** Lincoln County, Nevada

**Section or Chapter Number and Date of Reviewed Document:**

Chapter 11.5 – East Mormon Mountain SEZ dated December, 2010

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11.5	GENERAL	The County recognizes the value of combining solar development activities into an energy park (SEZ) rather than widely dispersed solar installations and existing right-of-way application process. As such, the County OPPOSES the “Solar Energy Development Program Alternative (the Preferred Alternative)” but SUPPORTS the “Solar Energy Zone Program Alternative” provided that SEZs are located in areas that limit the impacts to other multiple uses, critical habitats and resource values. The SEZ Program Alternative will limit the exorbitant amount of time, money and energy (on behalf of the County, local stakeholders and State/Federal Agencies) that goes into making sure that solar development rights-of-way are “smart from the start” and appropriately sited
11.5	GENERAL	SEZs should be located in areas with “Low Potential for Conflict” per the Screening Criteria listed in Instruction Memorandum No. 2011-061 (IM 2011-061) regarding Right-of-Way Management for Solar and Wind Energy issued by the Department of the Interior on February 7, 2011.

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		<p>The East Mormon Mountain SEZ does not meet this criteria as a result of impacts and conflicts with: the Mormon Mesa ACEC, specially designated lands with wilderness characteristics and designated by Congress, livestock grazing – a traditional multiple use, recreation, Department of Defense operating areas, sensitive soil, water and vegetation resources, designated critical habitat for federally endangered species, and visual resource values.</p>
11.5	<b>GENERAL</b>	<p>The County fully supports the Renewable Energy Goal found on page 73 of the Ely District Record of Decision and Approved Resource Management Plan dated August 2008 (BLM/NV/EL/PL-GI08/25+1793) that states “Goals – Renewable Energy: Provide opportunities for development of renewable energy sources such as wind, solar, biomass and other alternative energy sources while minimizing adverse impacts to other resources.”</p> <p>The proposed East Mormon Mountain SEZ does not “minimize adverse impacts to other resources” including, but not limited to: Water Resources, Soil Resources, Vegetation Resources, Visual Resources, Recreation, Livestock Grazing, and County Socioeconomics.</p> <p>From the County’s perspective, development in any portion of the proposed SEZ would have unacceptable impacts to the above listed resources. Therefore the entire East Mormon Mountain SEZ should be classified as “lands excluded from utility-scale solar energy development”.</p>
11.5.1.1	11.5-1/10 &13	<p>The data used in this section is dated and not the most current available. Given the dramatic effects of the recession, the most current population and other socioeconomic data available must be presented in the Final PEIS and used in all related analyses of impacts.</p>
11.5.1.1	11.5-1/18	<p>What is meant by railroad stop? Rail passenger service is not available in Moapa. There are numerous siding along the UPRR mainline in Lincoln County where freight traffic could be stopped and off-loaded.</p>
11.5.1.1	11.5-1/ 24-27	<p>The existing 500-kV line is outside of the proposed SEZ, and it is unfounded to assume that the line has available capacity. SEZs should NOT be designated unless transmission lines with available capacity are readily available to transport solar</p>

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		power generated at the site. In any case, a new transmission line would be required to be built from the proposed SEZ to the existing transmission line. The need for and impacts of this new transmission line between the SEZ and existing transmission corridor needs to be evaluated in the Final PEIS.
11.5.1.1	11.5-1/44	This line indicates a “slope of generally less than 2%” within the SEZ. However, the Toquop Wash bisects the SEZ in a north-south manner while the South Fork of the Toquop Wash bisects the SEZ in a east-west manner. The topography around those two features and associated tributaries is very steep. Even if solar arrays are developed in the more suitable flat areas, it is going to be difficult to connect infrastructure in and across these areas.
11.5.1.1	11.5-1/45-47	<p>This section indicates, “. . . the area was identified as being relatively free of other types of conflicts”. This statement is not consistent with Department of Interior Instruction Memorandum No. 2011-061 as there are conflicts with the following:</p> <ul style="list-style-type: none"> <li>• Mormon Mesa ACEC due to access road and transmission expansion, which must be considered as part of the project</li> <li>• Sensitive habitat areas including desert tortoise range and an island of native Mojave Desert vegetation that has avoided massive wild fire experience in areas surrounding the SEZ</li> <li>• Visual Resource Class III and surrounding Class II areas</li> <li>• Department of Defense Operating Areas</li> <li>• Project development in an area with limited water resources</li> <li>• Lands near or adjacent to lands designated by Congress (i.e. Mormon Mountain Wilderness Area)</li> </ul>
Figure 11.5.1.1-1	11.5-2	This figure does not depict all of the Lincoln County Conservation, Recreation and Development Act designated utility corridors available to serve the East Mormon Mountain SEZ area.
Table 11.5.1.2-1	11.5-3	There is an existing permitted road ROW for the proposed Toquop Power Project that could provide access to the southeastern corner of the SEZ. To minimize impacts, this existing permitted ROW should be proposed for use in accessing the East Mormon Mountain SEZ. If this existing ROW is utilized, no unpermitted new disturbance would be required for road access to the SEZ. In addition to identifying which entity is responsible for developing and maintaining any new roads and rights-of-way and



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		maintaining any existing roads used by this project, the Final Solar PEIS should consider and itemize appropriate locations to obtain this road building material.
11.5.1.2	11.5-4/7-20	This section indicates that the existing 500-kV line has a 700 MW capacity, and assumes that this line could be used to transmit power to the grid. This is a poor assumption as it is likely much of the 700 MW capacity is already occupied by existing power generating facilities or reasonably foreseeable power generating facilities in the area such as the proposed natural gas-fired power plant near the SEZ.
11.5.1.2	11.5-4/22-25	<p>This section indicates that new transmission lines will likely be required to move power generated within the SEZ to the grid, and that "... site developers would need to determine the impacts from construction and operation of that line".</p> <p>Any new transmission line would have to run through the Mormon Mesa ACEC and place developers in a Medium or High Potential for Conflict with Department of Interior Instruction Memorandum No. 2011-061. SEZs and associated transmission corridors should be located in areas of Low Potential for Conflict in order to encourage development rather than setting developers up for potential failure on a large investment.</p>
11.5.1.2	11.5-4/29-31	A new access road through the Mormon Mesa ACEC would result in a very high disturbance. Utilization and improvement of existing roadways should be a required SEZ-Specific Design Feature. There is an existing permitted road ROW for the proposed Toquop Power Project that could provide access to the southeastern corner of the SEZ. To minimize impacts, this existing permitted ROW should be proposed for use in accessing the East Mormon Mountain SEZ. If this existing ROW is utilized, no unpermitted new disturbance would be required for road access to the SEZ.
Table 11.5.1.3-1	"Lands and Realty"	This section indicates that development "... would exclude many existing and potential uses of the land, perhaps in perpetuity." This impact in this particular location is unacceptable to Lincoln County and in conflict with the Renewable Energy Goal found on page 73 of the Ely District Record of Decision and Approved Resource Management Plan dated August 2008 (BLM/NV/EL/PL-GI08/25+1793) that states "Goals – Renewable Energy: Provide opportunities for development of renewable energy sources such as wind, solar, biomass and other alternative energy sources while minimizing adverse impacts to other resources."

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<p><b>Table 11.5.1.3-1</b></p> <p>“Lands and Realty”</p>	<p><b>11.5-5</b></p>	<p>This section states that “Solar Development could sever existing roads and trails...making it difficult to access undeveloped public lands within and west of the SEZ”. This impact is unacceptable to Lincoln County, particularly in an area that has a high potential for future growth and desire for increased recreational opportunities. This also results in a substantial direct impact to recreation and enjoyment of the Mormon Mountain WA, which has been congressionally designated.</p> <p>If any portion of this SEZ is approved for utility scale solar development, then a SEZ-Specific Design Feature should be included to mitigate access routes severed by solar development to maintain continued public access to surrounding areas of public land.</p> <p>There is an existing permitted road ROW for the proposed Toquop Power Project that could provide access to the southeastern corner of the SEZ. To minimize impacts, this existing permitted ROW should be proposed for use in accessing the East Mormon Mountain SEZ. If this existing ROW is utilized, no unpermitted new disturbance would be required for road access to the SEZ.</p>
<p><b>Table 11.5.1.3-1</b></p> <p>“Specially Designated Areas and Lands with Wilderness Characteristics”</p>	<p><b>11.5-5</b></p>	<p>Impacts should include the loss of access to the Mormon Mountains WA. These impacts to a congressionally designated area place the SEZ in the category of “High Potential for Conflict” under Instruction Memorandum No. 2011-061 regarding Right-of-Way Management for Solar and Wind Energy issued by the Department of the Interior on February 7, 2011.</p> <p>A new access road through the Mormon Mesa ACEC and designated critical habitat for desert tortoise place the SEZ in the category of “High Potential for Conflict” under Instruction Memorandum No. 2011-061 regarding Right-of-Way Management for Solar and Wind Energy issued by the Department of the Interior on February 7, 2011.</p>
<p><b>Table 11.5.1.3-1</b></p> <p>“Rangeland Resources: Livestock Grazing”</p>	<p><b>11.5-5 &amp; 6</b></p>	<p>The County agrees that the impacts associated with SEZ development would likely result in the grazing operation within the Gourd Springs Allotment to become economically infeasible, and result in the permanent loss of 3,428 AUMs. In addition, the project would result in a private property “taking” of any water rights and the private developments owned by the grazing permittee. This is a major reason</p>

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		<p>why the County adamantly opposes solar development within the SEZ.</p> <p>Because of these impacts the County believes the SEZ as constituted violates the Ely District Record of Decision and Approved Resource Management Plan dated August 2008 (BLM/NV/EL/PL-GI08/25+1793) [Ely RMP] that states “Goals – Renewable Energy: Provide opportunities for development of renewable energy sources such as wind, solar, biomass and other alternative energy sources while minimizing adverse impacts to other resources” in addition to “Management Actions – Livestock Grazing LG-1: Make approximately 11,246,900 acres and 545,267 animal unit months available for livestock grazing on a long-term basis (see Map 19).”</p>
<p><b>Table 11.5.1.3-1</b></p> <p>“Recreation”</p>	<p><b>11.5-6</b></p>	<p>If any portion of this SEZ is approved for utility scale solar development, then a SEZ-Specific Design Feature should be included to mitigate access routes severed by solar development to maintain access to surrounding areas of public land.</p>
<p><b>Table 11.5.1.3-1</b></p> <p>“Military and Civilian Aviation”</p>	<p><b>11.5-6</b></p>	<p>According to the Nellis AFB Range Chart (Edition 4), the East Mormon Mountain SEZ is outside of any Military Operations Area (MOA) or other military restricted area. If the military has raised a concern with solar development within the East Mormon Mountain SEZ, a citation to said comment letter or other document containing said concerns should be included in the Final PEIS.</p> <p>If a valid military concern has been raised for solar development at the East Mormon Mountain SEZ, the potential impact to military air space place the SEZ in the category of “Medium Potential for Conflict” under Instruction Memorandum No. 2011-061 regarding Right-of-Way Management for Solar and Wind Energy issued by the Department of the Interior on February 7, 2011.</p> <p>At minimum, there need to be a series of SEZ-Specific Design Features to minimize and mitigate this impact including a height restriction and possible glare limitations.</p>
<p><b>Table 11.5.1.3-1</b></p> <p>“Water Resources”</p>	<p><b>11.5-7</b></p>	<p>Given the topography of the area, it will be nearly impossible to “... minimize impacts on the ephemeral stream channels found within the SEZ...” as unfavorable drainage patterns and topography of the SEZ area very limiting factor to solar development.</p> <p>The potential “taking” of water rights (considered to be private property in Nevada) from any existing water rights holders within the SEZ needs to be identified as an</p>

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		<p>impact. This would include any impact that solar development might have on the point of diversion, place of use, manner of use or transmission of water.</p> <p>The fact that water rights have to be “purchased and transferred” could be a major hurdle for solar development. This also indicates that groundwater use within the basin exceeds yields, and per IM 2011-061 that classifies as an areas of “Medium Potential for Conflict”.</p> <p>As noted on Page 5-58 of the Draft PEIS, the perennial yield of the basin is only 3,600 acre feet. There does not appear to be enough groundwater in the basin to support any of the wet-cooled solar technologies. The Final PEIS should note here which types of solar development would be infeasible at the East Mormon Mountains SEZ given limitations in water availability.</p>
<p><b>Table 11.5.1.3-1</b> “Vegetation”</p>	<p><b>11.5-8 and 9</b></p>	<p>Impacts to existing, and relatively undisturbed vegetation, within the SEZ is unacceptable to the County given that very large tracts of land surrounding the SEZ have been burned in recent years. The SEZ would create a major disturbance in one of the only remaining patches of remaining native vegetation and would likely violate the Goal for Vegetation Resources contained in the Ely RMP to:</p> <p>“Manage vegetation resources to achieve or maintain resistant and resilient ecological conditions while providing for sustainable multiple uses and options for the future across the landscape.”</p> <p>The Ely RMP also states that “A variation of 5 percent above or below the values listed in the desired range of conditions for all vegetation communities is considered acceptable.” This requirement should be analyzed in the “Cumulative Impacts Analysis” including the impact of the Southern Nevada Complex Fires in 2005.</p>
<p><b>Table 11.5.1.3-1</b> “Visual Resources”</p>	<p><b>11.5-12</b></p>	<p>The sentence “The SEZ is in an area of low scenic quality” is false. Section 11.5.14.1 indicates “...the VRI values for the SEZ are VRI Class III, indicating moderate visual values”. IM (2011-061) indicates that development within “Lands currently designated as Visual Resource Class III” are considered to be in areas of “Medium Potential for Conflict”.</p>

<b>EIS Section</b>	<b>Page/Line</b>	<b>Comment/Suggested Revision</b>
<b>Table 11.5.1.3-1</b>	<b>11.5-14</b>	The first sentence of the description of environmental impacts should be revised as follows, “No comments specific to the proposed East Mormon Mountain SEZ have been received from Native American Tribes to date.” The rest of this paragraph should be deleted as being speculative in nature. Under formal Tribal consultation, BLM is required to report actual concerns raised by Tribes. BLM cannot presume and report what issues are of potential concern to Tribes.
<b>Table 11.5.1.3-1</b>  “Socio-economics”	<b>11.5-15</b>	Impacts completely disregard negative economic impacts as a result on limiting access for recreation, any “takings” of private property including water rights, and the loss of AUMs by grazing permittees, all of which are extremely valuable to both the economy and culture of Lincoln County.  Construction of an 11 mile access road would not result in 234 jobs, a ridiculously high estimate. This level of impact is a consequence of mixing the metropolitan Las Vegas economy into the data used to structure the impact model used to assess socioeconomic impacts. The new access road was previously analyzed in the Final EIS for the Toquop Energy Project. The Final PEIS analysis of effects should consider analyses contained in the Final EIS for the Toquop Energy Project.
<b>Table 11.5.1.3-1</b>	<b>11.5-15</b>	Because there is no population within the East Mormon Mountain area an early statement to this effect should have been made in Draft PEIS and Environmental Justice (EJ) should have not been carried forward for detailed analysis. The EJ analysis contained in the body of the Draft PEIS for East Mormon Mountains (and the Delamar Valley and Dry Lake Valley North SEZs) is inconsistent with and goes far beyond that required by Executive Order 12898 and as recommended by CEQ Guidance (December 10, 1997) regarding analysis of EJ impacts.
<b>11.5.2.2.1</b>	<b>11.5-17/32-35</b>	This conclusion regarding the undeveloped and isolated nature of the SEZ fails to recognize that the BLM has already approved construction of the 750-plus MW Toquop Energy Project on a parcel of land immediately adjacent to the southeast corner of the East Mormon Mountain SEZ. The conclusions regarding the impact of the solar development in the area as stated in this section need to be revised in the Final PEIS.
<b>11.5.2.3</b>	<b>11.5-18/30-33</b>	Exclusion of existing land uses and limiting access to public land in this area is not acceptable to the County.



<b>EIS Section</b>	<b>Page/Line</b>	<b>Comment/Suggested Revision</b>
11.5.4.1.1	11.5-29/All	<p>The County does NOT support solar development in the Summit Springs and Gourd Springs Allotments. Both have already experienced major impacts due to Desert Tortoise restrictions and the 2005 wild fires and should not be targeted for more impacts.</p> <p>This section indicates the potential loss of water resources, but does not acknowledge the “taking” of water rights (considered private property in Nevada), or any other range improvements paid for and maintained by the permittee. This should be added to the “Affected Environment” section.</p>
11.5.4.1.2	11.5-30/8-11	<p>This section of the Draft PEIS fails to consider the indirect impacts to the grazing permittee of the loss of beneficial use of privately held stock water rights and impacts to other private lands related to the permittee’s ranching enterprise. The Final PEIS must address these indirect impacts of the loss of public land grazing.</p>
11.5.4.1.2	11.5-30 / 17	<p>The loss of 6.4% of the authorized grazing use within the Caliente Field Office is not acceptable to the County.</p>
11.5.5.2.1	11.5-33 / 24-26	<p>Access in this area is already limited as a result of few existing roads. Eliminating access to the few existing roads could have a major impact to access in and around the vicinity of the SEZ, and this is unacceptable to the County.</p>
11.5.5.3	11.5-34 / 23	<p>An additional bullet should be added that reads:</p> <p>“Existing travel routes shall remain open or be re-routed to maintain full public and recreational access within the area”</p>
11.5.6.3	11.5-35	<p>DOD concerns could be a major limiting factor to development within the SEZ. This needs to be addressed when identifying the SEZ locations; therefore, and mitigation actions should be clearly stated in this section, or if military actions will be impacted with no chance of mitigation, it needs to be disclosed. At a minimum, a restriction on any development over 200 feet in height should be included.</p>
11.5.7.1.2	11.5-46/24-25	<p>The PEIS indicates that “The susceptibility to wind erosion is moderate for most soils...”. Is that based on soils that are vegetated or soils where vegetation has been removed by fire and/or removed for development?</p> <p>The erosion potential should be disclosed for both as solar development will result in</p>

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		soils that are devoid of vegetation and could potentially result in much higher wind erosion potential.
11.5.7.2	11.5-50/2-3	A more descriptive discussion on how impacts would vary based on the type of facility that is developed should be included. Don't all facility types require complete clearing of all on-site vegetation and further impact by restricting full public access through fencing of the facility ?
11.5.9.1.3	11.5-57 and 58 / General	Analysis should indicate if there are any existing points of diversion, places of use, or transmission systems within the SEZ that may be impacted.
11.5.9.1.3	11.5-58 / 1-14	<p>The State Engineer has closed the Virgin River for further surface water withdrawals, and this paragraph would indicate that the ground water basin is already over appropriated (12,348 ac-ft/yr allocated vs. 3,600 ac-ft/yr appropriated) with significant outstanding water rights yet to be acted on (185,340 ac-ft/yr).</p> <p>Per IM 2011-061, "projects with proposed groundwater uses within groundwater basins that have been over appropriated by state water resource agencies" should be classified as projects with Medium Potential for Conflict. Based on a lack of sufficient water resources, and the challenges that could be faced with obtaining water rights from existing owners / uses, the SEZ should be classified as "lands excluded from utility-scale solar energy development".</p>
11.5.10.1	11.5-66/25 and 26	"Much of the SEZ was burned by wildfire in 2005, with very little subsequent shrub regeneration". This sentence should be supported with a percentage that has burned and/or a map representing the burned vs. unburned areas. Based on mapping available on the BLM web site, it would appear that less than 50% of the SEZ has been burned in recent years. That being said, much of the development would occur on areas not burned which serve as the primary source of seed for the re-establishment of native species. Mojave desert plants, particularly shrubs, require a long duration to re-establish following a fire or any other disturbance. Developing on adjacent unburned vegetative sites will only contribute to further loss of native vegetation and shrubs and inhibit and delay regeneration of the burned areas.
11.5.10.2	11.5-72 / 23-24	Given the fragility of Mojave Desert vegetation the statement that "The proper implementation of programmatic design features, however, would reduce indirect effects to a minor or small level of impact" is completely incorrect.

<b>EIS Section</b>	<b>Page/Line</b>	<b>Comment/Suggested Revision</b>
<b>11.5.17.2</b>	<b>11.5-250/37</b>	A new transmission line with substation would be required to be built from the proposed SEZ to the existing transmission line. The need for and impacts of this new transmission line between the SEZ and existing transmission corridor needs to be evaluated in the Final PEIS.
<b>11.5.18.2</b>	<b>11.5-255/Entire Section</b>	The first sentence of the description of environmental impacts should be revised as follows, "No comments specific to the proposed East Mormon Mountain SEZ have been received from Native American Tribes to date. Consultation with Native American Tribes is ongoing." The rest of this section should be deleted as being speculative in nature. Under formal Tribal consultation, BLM is required to report actual concerns raised by Tribes. BLM cannot presume and report what issues are of potential concern to Tribes.
<b>11.5.19</b>	<b>11.5-259/Entire Section</b>	<p>Data presented in this section is not current. As a consequence, modeling and the results thereof are likely inaccurate. In addition, conclusions regarding the likely magnitude of impacts are not accurate. It is imperative that most current data available (in most cases either 2009 or 2010) be used in the analyses of socioeconomic impacts.</p> <p>The manner in which Clark County has been included in the affected environment and the inability of IMPLAN to consider Lincoln County impacts as anything more than noise within the ROI has resulted in a complete mis-statement of the potential impacts of developing solar energy projects in the East Mormon Mountain SEZ. This entire section needs to be significantly revised to better reflect the likely impacts of solar development in the East Mormon Mountain SEZ. IMPLAN is an input-output model which generally works well for small rural economies. IMPLAN does not handle mixing of the very large Clark County economy with the very small Lincoln County economy. Suggest talking to Dr. Tom Harris of the University of Nevada Reno, Center for Economic Development (an expert with the use of IMPLAN in Nevada) about the appropriate use of IMPLAN in modeling impacts of solar development in East Mormon Mountain SEZ.</p>
<b>Tables 11.5.19.1-1 through 11.5.19.1-5</b>	<b>11.5-259-263</b>	Current labor force data, employment data and unemployment rates are available and should be used. For Nevada said data is available from the Department of Employment, Training and Rehabilitation. Current population data are available from

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		the Nevada State Demographer.
11.5.19.2.1	11.5-272	With unemployment in Lincoln County and Clark County exceeding 12 and 13 percent, respectively, it will not be necessary for any workers to in-migrate to the ROI for solar development related employment. The assumption of in-migrating workers and their families and related impacts needs to be revisited throughout Section 11.5.19.2.
11.5.19.2.1	11.5-273/43-44  11.5-273/46         11.5-274/4	There are no USFS grazing permits directly impacted by the East Mormon Mountain SEZ.  Add a new sentence to the end of the paragraph as follows. "If the reduction in authorized grazing use in the SEZ causes a reduction in permittee herd size, then economic impacts would also be associated with reduced efficiency and use of commensurable private property and/or supplemental feeding and associated transportation costs."  Construction of an 11-mile access road would not result in 234 jobs, a ridiculously high estimate. This level of impact is a consequence of mixing the metropolitan Las Vegas economy into the data used to structure the impact model used to assess socioeconomic impacts. The new access road was previously analyzed in the Final EIS for the Toquop Energy Project. The Final PEIS analysis of effects should consider analyses contained in the Final EIS for the Toquop Energy Project.
Tables 11.5.19.2-3 through 11.5.19.2-6 and Appendix M	Various	Appendix M offers no explanation of methods and assumptions used to estimate sale tax impacts. The estimates of sales tax revenue presented in Tables 11.5.19.2-3 through 11.5.19.2-6 appear low. If project cost were \$1 million per MW and just 10 percent of project cost is taxable equipment, a sales tax rate of 6-7 percent would yield as much as \$1 million, not the \$200,000 described in the text. In reality, the extent of project costs subject to sales tax and the sales tax rates are both higher suggesting that the \$1 million estimate itself would be low. The methods and assumptions used in calculating all sales and use taxes, personal and property taxes and any other taxes should be clearly stated. In fact, it does not appear as though personal property or ad valorem (property taxes) have been considered at all. The Final PEIS must more accurately reflect anticipated fiscal impacts from solar

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		development.
<b>11.5.20.1</b>	<b>11.5-285/entire section</b>	<p>There are no people resident in the area containing the East Mormon Mountain SEZ so pursuant to CEQ Guidelines there are no environmental justice (EJ) impacts.</p> <p>Definition of a 50-mi. impact radius for environmental justice around the East Mormon Mountain SEZ is not defensible. For example, if such an approach were applied in Rhode Island any project in that state would be found to have an EJ impact in many locations throughout the state. The EJ Executive Order and related CEQ Guidelines followed evidence that noxious or undesirable industrial projects were being sited disproportionately in <u>neighborhoods</u> or <u>communities</u> characterized by predominately low-income and/or minority populations. Never was the issue of EJ ever intended to be applied to an area 50 miles beyond a valley absent of any population wherein an industrial project (solar development) is being proposed. The analysis of EJ presented in the Draft PEIS is unnecessary beyond a simple finding that there are no persons residing in the area of the East Mormon Mountain SEZ and hence there are no, nor given the CEQ Guidelines could there be any, EJ impacts from solar development in the East Mormon Mountain SEZ.</p>
<b>11.5.20.2</b>	<b>11.5-290/13-19</b>	How can there be impacts to EJ if there are no low-income or minority populations within the vicinity of the East Mormon Mountain SEZ to be impacted? This entire Section 11.5.20 could be shortened as follows, “There are no EJ minority or low income populations in the vicinity of the East Mormon Mountain SEZ. As a consequence development of solar within the East Mormon Mountain SEZ would not result in any Environmental Justice impacts.”
<b>Figure 11.5.21.1-1</b>	<b>11.5-293</b>	A state road does not parallel the UPRR mainline through southern Lincoln County. In southern Lincoln County, the road along the UPRR is a Lincoln County road.
<b>Figure 11.5.22.2-1</b>	<b>11.5-303</b>	Delete the branch rail line between Caliente and Panaca in this figure as said line no longer exists.
<b>Table 11.5.22.2-3</b>	<b>11.5-307</b>	Caliente Rail Realignment should be Caliente Rail Alignment.
<b>11.5.22.2-2</b>	<b>11.5-310/45-46</b>	The statement here regarding shipments being restricted to DOE shipments is untrue. In its EIS for the Caliente Rail Alignment, DOE has proposed shared-use by commercial freight of its Caliente Rail Alignment.
<b>11.5.22.4.3</b>	<b>11.5-317 /</b>	Citing the loss of 315 AUMs is completely inconsistent with section 11.5.4.1.1 that

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	ALL	<p>describes the loss of 3,428 AUMs, and the complete anticipated closure of the Gourd Springs Allotment, which is an extremely high impact.</p> <p>The potential loss of up to 30% of the AUMs administered out of the Caliente Field Office based on SEZs proposed within this document should also be noted.</p> <p>Both of the above are major impacts and completely inconsistent with the goals, objectives and management actions included in the Ely RMP.</p>
11.5.22.4.4	11.5-317/ ALL	Currently there is limited “outdoor recreation”, however, future residential development within Lincoln County, particularly in the Mesquite / Toquop vicinity could greatly increase the recreational demand of this adjacent area.
11.5.22.4.9	11.5-321 / 1-3	The following statement “The East Mormon Mountain SEZ would make a relatively small contribution to cumulative effects, however, given its modest size in comparison to other developments”, is completely misleading. This is a cumulative impact section and the SEZ is located in an relatively small remaining area of native vegetation that has not been developed or burned, which is a significant impact.
11.5.22.4.18	11.5-326	The following statement “The negative impacts, including some short-term disruption of rural community quality of life, would not likely be considered large enough to require specific mitigation measures”. This statement is completely false and blatantly misleading. The cancelation of a grazing allotment, loss of open space, exclusion of recreation or access to adjacent public lands are all permanent losses of the culture and way of life enjoyed by Lincoln County residents. The County does not consider any of these impacts to be minimal, and to cast aside any specific mitigation requirements is extremely short-sighted.
11.5.22.4.19	11.5-326/entire section	Because there are no Environmental Justice impacts from solar development in the East Mormon Mountains SEZ, there can be no cumulative impacts to Environmental Justice. This section needs to be rewritten in the Final PEIS.



**Document Review Form  
Draft Solar Energy Development PEIS**

**Reviewer's Name:** Connie Simkins, (775) 962-1333, [jcciac@co.lincoln.nv.us](mailto:jcciac@co.lincoln.nv.us)  
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**Reviewer's Organization:** Lincoln Co., NV.

**Primary Disciplinary Area (e.g., ecology, land use planning, regulatory oversight):** **Local Interest, County Infrastructure, Land Use, Grazing, Wildlife, Water, Socioeconomics**

**Section or Chapter Number and Date of Reviewed Document:** Appendices A and M – Draft Solar PEIS dated December 2010

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A.2.1.2.3	A-31/8-22	<p>Use of the Determination of NEPA Adequacy (DNA) review process based upon SEZ specific analysis in the PEIS will serve to expedite processing of applications for solar projects. Guidance to BLM Field Office staff is needed to ensure the use of DNA actually occurs in more cases than not. The Final PEIS should discuss the likely applicability of the DNA process to expedite processing of solar projects in SEZs.</p> <p>There are more than 15 individual plans identified in Appendix A which the applicant would have to prepare. All required plans should be made a part of the single Plan of Development and not required as standalone plans, each requiring a separate review and acceptance by BLM. The requirement to prepare in excess of 15 separate plans will not serve to expedite processing of applications or any other useful purpose for solar projects and/or the use of the DNA process.</p>
A.2.2.2	A-37/31	Further analysis may not be required. Change this line to read “ shall be considered during environmental review”... Please note, this bullet is not a design feature.
A.2.2.3	A-38/3	In addition to compensation for range improvements, water rights, and the invalidation of the composite ranch operating plan need to also include encouraging project proponents to

		compensate permittees for lost Animal Units Months (AUMs) of forage as a last resort.
A.2.2.4	A-38/21	Further analysis may not be required. Change “addressed” to considered.
A.2.2.7	A-23/9	Revise to read, “As part of the review of the development proposal for solar energy”. Please note this provision is not a design feature.
A.2.2.7	A-39/43	Change to read, “the installation, shall be considered.” Delete reference to environmental impact analysis. Further analysis may not be required pursuant to a Determination of NEPA Adequacy.
A.2.2.8	A-40/15-21	All of these plans should be made a part of the Plan of Development and not required to be developed and submitted to BLM as standalone plans subject to review and acceptance by BLM apart from review and acceptance of the Plan of Development. A requirement to prepare and submit in excess of 15 plans (many other plans are described in later portions of Appendix A) will slow the solar project permitting process significantly.
A.2.2.8	A-40/26-29	Studies are not a design feature. If impacts to eolian processes is a concern then measures to mitigate impacts to eolian process should be described here, not further study. Requirements for further study will not serve to expedite permitting of solar projects.
A.2.2.8.1	A-41/20-21	Change to read, “... identified beforehand and existing borrow pits shall be used to the extent possible. If new roads or borrow pits are...” Delete “and included in the NEPA direct and indirect analyses. No additional NEPA analyses may be required.
A.2.2.8.3	A-43/40	Insert “When buried,” at the beginning of the sentence. Burying of all electrical lines may not be feasible and should not be assumed to be required.
A.2.2.10.1	A-46/29-46	The Final PEIS should make clear that a requirement for a preliminary hydrologic study should not apply to all solar technologies in all areas. For example, it is unlikely that such hydrologic study would be required for a solar PV project in the Dry Lake Valley North SEZ where existing groundwater rights permitted by the Nevada State Engineer are available to and have been offered in support solar PV development and operations. The requirements should only be applied where proposed water use may exceed the perennial yield of a basin or where existing approved water rights are not available for use by the project.
A.2.2.10.1	A-47/41	The requirement for this plan is redundant with the requirement on Page A-40. All required plans identified in this section should be included as a part of the single Plan of Development. The Final PEIS should make this requirement for single plan (POD) clear.
A.2.2.10.1	A-50/1-7	The Final PEIS should recognize that a groundwater monitoring plan developed as a requirement by a state water agency and accepted by said agency should suffice and be accepted by BLM.

A.2.2.10.1	A-50/9	Insert after proposed, “in an amount which approaches or exceeds the perennial yield of a basin, then”.
A.2.2.10.2	A-51/14-38	Delete “and include:” in Line 15 and delete all sub points. This requirement (“and include”) may well exceed state and local standards and requirements. Replace with a requirement to meet all state and local standards and requirements for groundwater wells.
A.2.2.10.3	A-54/8-31	Delete all bullets and replace with a single bullet as follows: “The use of water shall be consistent with state and local requirements.” The listed items may or may not be consistent with state and local requirements.
A.2.2.11.1	A-55/11	Revise to read “... shall be sited within SEZs...”.
A.2.2.11.1	A-57/41	Insert “thermal” after solar. This requirement should not apply to solar PV.
A.2.2.13.1	A-78/16-20	This section was obviously written by a “licensed professional landscape architect with demonstrated experience with BLM’s VRM policies” who is concerned with employment protection for his peers. Unless this requirement is found in statute or regulation (in which case a citation to same is needed), delete as being far too restrictive and specific.
A.2.2.13.1	A-79/17-29	Delete this recommendation. It is too specific, prescriptive and will not expedite permitting of solar projects within SEZs. This type of analysis has already been completed in the PEIS for SEZs.
A.2.2.14.2	A-91/15	Insert “when applicable” after Accordingly.
A.2.2.16	A-93/31	Replace “shall be required” with “are on-going.”
A.2.2.16	A-93/43	Delete “Site-specific NEPA analyses”. The analyses of SEZs in this PEIS are site specific. A Determination of NEPA Adequacy process would not necessarily result in site-specific NEPA analyses.
A.2.2.18	A-99/26-28	This requirement is not needed as this activity was completed in preparation of the PEIS.
A.2.2.18	A-100/11-12	While education in schools is good, how does this activity mitigate impacts to economic and social conditions? For a mitigation measure to be reasonable and feasible it must have a nexus to, and demonstrably have the potential to mitigate, a specific impact.
A.2.2.19	A-100/25	Insert “non-existent or” before small. This revision is justified based upon Lincoln County’s comments to environmental justice impact analyses in Chapters 11.2, 11.4 and 11.5.
A.2.2.19	A-101/1-2	While education in schools is good, how does this activity mitigate impacts to environmental justice?
A.2.2.20	A-101/20-22	Required easements are not a mitigation measure but would be part of the proposed action and should be described as such in the Final PEIS. Providing fair and timely compensation for easements across private land would be one method of mitigation which should be included in

		the Final PEIS.
A.2.2.21.2	A-103/40	Add to end of sentence, “at which live ordinance was used”
A.2.2.22.1	A-106/33-36	The Final PEIS should be revised to note that a health risk assessment should only be required if requested by a local or state emission permitting agency.
A.2.2.22.2	A-84/24-28	A health risk assessment should only be required if required by a local or state emission permitting agency.
Table A.2-1	A-145/Delamar Valley/Lands and Realty	The location of the existing transmission corridor and SNWA ROW are within a congressionally designated utility corridor the relocation of which may require congressional action. Given the total size of the SEZ and foreseeable available transmission capacity in the area, relocation of the transmission corridor and SNWA is not necessary.
Table A.2-1	A-145/Delamar Valley/Rangeland Resources	Add a category labeled “ Rangeland Resources” and included therein, “ Every effort should be made to mitigate lost forage/AUMS through revegetation using a combination and non-native plant materials and/or design and installation of new range improvements which improve access to remaining forage. If replacement of vegetation and/or range improvements is not possible then compensation for lost/impacted AUMs and range improvements, water rights, and the invalidation of the composite ranch operating plan should be undertaken as the absolute last resort.”
Table A.2-1	A-145/Delamar Valley/Vegetation	Add, “All areas of white sage should be avoided”.
Table A.2-1	A-147/Delamar Valley/Special Status Species	<p>The impact analysis within the Draft PEIS regarding special status species is incorrect so the suggested mitigation measures are also incorrect. Delete the requirement to consult with USFWS regarding desert tortoise. There are no desert tortoise habitat or desert tortoises in Delamar Valley. The Final PEIS needs to correct errors in the Draft PEIS regarding the presumed existence of desert tortoise habitat in Delamar Valley. USFWS desert tortoise specialists in the Las Vegas office of USFWS should be asked about this matter. The BLM’s recently adopted Ely Resource Management Plan (see Map 2.4.7-1, Desert Tortoise Habitat) does not show any desert tortoise habitat in Delamar Valley.</p> <p>There will be no groundwater withdrawal within the Pahranaagat Valley as a result of solar development in Delamar Valley.</p>
Table A.2-1	A-147/Delamar Valley/Visual Resources	This proposed design feature for visual resources is too restrictive. Need to simply apply and comply with the current VRM classifications for the Delamar Valley SEZ area developed by BLM in the recently adopted Ely Resource Management Plan.

Table A.2-1	A-148/Dry Lake /Rangeland Resources	See comments to Delamar Valley on Page A-145. Restriction suggested for Ely Springs Allotment is not required as Permittee supports solar development with the allotment and adjacent private land they own.
Table A.2-1	A-148/Dry Lake Vegetation	Need to include avoidance of white sage.
Table A.2-1	A-149/Dry Lake/ Special Status Species	Delete the requirement to consult with USFWS regarding desert tortoise. There are no desert tortoise habitat or desert tortoises in Dry Lake Valley North. The Final PEIS needs to correct errors in the Draft PEIS regarding the presumed existence of desert tortoise habitat in Dry Lake Valley North. USFWS desert tortoise specialists in the Las Vegas office of USFWS should be consulted to verify the nonexistence of desert tortoise habitat in Dry Lake Valley. The BLM's recently adopted Ely Resource Management Plan (see Map 2.4.7-1, Desert Tortoise Habitat) does not show any desert tortoise habitat in Dry Lake Valley North.
M.1	M-1/Global Comment	Each description of methods needs to include a discussion of the limitations of the selected and employed methodology as well as identification of all assumptions used in the analyses.
M.4.1.2	M-7/16-20	This is an invalid assumption. Different vegetative types provide more or less forage value. Proximity to or availability of range improvements may make certain areas of forage in an allotment more important than others.
M.4.1.2	M-7/25-28	This is an invalid assumption. For example, an impact to just 10 percent of an allotment's total area but 50 percent of available white sage in the allotment, would be a major impact.
M.9.1	M-14/Entire Section	This methodology fails to consider Nevada State Engineer conclusions of impact for existing appropriations of water or use of water within perennial yields. If the Nevada State Engineer concludes no adverse impact then the PEIS should reach a similar conclusion. For example, the Nevada State Engineer has concluded that pumping of the perennial yield within Delamar Valley would have no adverse impacts upon existing water rights or the environment, including groundwater/surface water or existing rights and upon the Pahrnagat National Wildlife Refuge. Conclusions in the Draft PEIS with regard to possible impacts to the NWR are inconsistent with previous finding by the Nevada State Engineer.
M.11.1.4	M-25/12-17	The use of a 50-mi radius circle around each SEZ is far too extant. Impacts from solar development would never reach 25 miles away from solar project sites.
M.18	M-52/33-36	The analysis in the Draft PEIS relies far too heavily upon previous NEPA documents, some for projects far different from and far more controversial than solar development, in postulating about Native American concerns. This is especially true where Solar PEIS specific Native American consultation did not elicit any or few SEZ specific Native American

		concerns. This reliance upon previous NEPA documents has, in some cases (including Delamar Valley, Dry Lake Valley North , East Mormon Mountains) resulted in erroneous conclusions about Native American concerns with solar development within SEZs.
M.19	M-52/Entire Section	Because of the over-whelming effect of Clark County upon the application of the IMPLAN model, the results of the socioeconomic impact analysis in the Draft PEIS for Delamar and Dry Lake Valley North are not accurate or useful. A way to mask the effect of the size of the Clark County economy is needed. For the Final PEIS, suggest running the model with Lincoln County alone as a means to better understand the impacts of solar development upon Lincoln County. Suggest talking to Dr. Tom Harris of the University of Nevada Reno, Center for Economic Development (an expert with the use of IMPLAN in Nevada) about the appropriate use of IMPLAN in modeling impacts of solar development in the East Mormon Mountains area, Delamar Valley and Dry Lake Valley (North).





March 30, 2011

Linda Resseguie, Project Manager  
Solar Energy Draft Programmatic EIS  
Argonne National Laboratory  
9700 S. Cass Avenue – EVS/240  
Argonne, Illinois 60439

Dear Ms. Resseguie:

SUBJECT: SOLAR ENERGY DRAFT PROGRAMMATIC ENVIRONMENTAL  
IMPACT STATEMENT PUBLIC COMMENTS

The Southern Nevada Water Authority (SNWA) appreciates the opportunity to provide the following public comments on the Solar Energy Draft Programmatic Environmental Impact Statement (EIS) to evaluate solar energy development. SNWA is responsible for the management and development of water resources for southern Nevada and has existing and future interests within the proposed Dry Lake Valley, Delamar Valley and Dry Lake Valley North Solar Energy Zones (SEZs) in Nevada.

Clark, Lincoln, and White Pine Counties Groundwater Development Project

SNWA has applied to the Bureau of Land Management (BLM) for rights-of-way (ROWs) to construct the Clark, Lincoln, and White Pine Counties Groundwater Development (GWD) Project and an EIS is currently in preparation. The GWD Project consists of pipelines, power lines and associated facilities for which ROWs have currently been requested and future groundwater production wells, collector pipelines and distribution power lines for which ROWs will be requested in the future. The currently requested GWD Project ROWs and areas identified for future ROWs lie within the proposed Delamar and Dry Lake Valley North SEZs. For this reason, SNWA requests clarification in the EIS that existing ROWs at the time a SEZ is officially designated would not be affected. Further, the EIS should identify that any future designation of a SEZ does not exclude issuance of additional non-solar energy project ROWs within that SEZ. The BLM should retain discretion to authorize additional ROWs within any identified or designated SEZ until a specific solar energy development project in that area is authorized, and only then would future ROWs be subject to the rights granted for solar energy development.

Following are SNWA's detailed comments on the EIS:

Volume 5, Part 1 (Page 11.2-5, Second Row, Third Column): The Lincoln County Conservation, Recreation and Development Act utility corridor within which the GWD Project would be located was designated by Congress and delineated in the approved BLM Resource Management Plan for the Ely District. Since there are existing and planned utility lines in this corridor, it cannot be moved. Additionally, the Secretary of Interior was directed by Congress to grant SNWA a ROW within that utility corridor. This should be noted for the entire EIS.

Volume 5, Part 1 (Page 11.2-20, Line 6): This sentence refers to the SNWA GWD Project as "the proposed SNWA corridor". A more appropriate description would be "the proposed SNWA ROW".

Volume 5, Parts 1 and 2: A current description of the GWD Project regarding proposed water for transport and development is located in the following document: *Southern Nevada Water Authority Clark, Lincoln, and White Pine Counties Groundwater Development Project Conceptual Plan of Development April 2010* which can be accessed at: [http://www.snwa.com/assets/pdf/gdp\\_concept\\_plan.pdf](http://www.snwa.com/assets/pdf/gdp_concept_plan.pdf). Also, Coyote Spring Valley groundwater is not part of the GWD Project. Please delete this reference.

Water Resources

Volume 1, Chapter 4 (Page 4-31, Line 6): Drawdown occurs as a result of any pumping, not just over-pumping. Suggest deleting the text "over-".

Volume 1, Chapter 4 (Page 4-78, Line 10): To the contrary groundwater resources in Utah are not well delineated. Suggest replacing the term "resources" with "uses" given that the remainder of the paragraph discusses how much water is being developed.

Volume 1, Chapter 5 (Page 5-39, Lines 26-30, Page 5-41, Lines 31-39 and Page 5-43, Lines 31-39): These statements seem over-generalized and should be removed from the EIS or an effects analysis should be performed and the results added to the document.

Volume 1, Chapter 5 (Page 5-47, Line 25): In describing aquifers, the term "groundwater" should be deleted since an aquifer is a groundwater reservoir. This should be corrected throughout the entire EIS.

Volume 5, Part 1 (Page 11.2-7, Last Row, Third Column): SNWA is prohibited from providing water service in Lincoln County per Section 6.1 of the 2003 Cooperative Agreement between SNWA, Lincoln County and the Las Vegas Valley Water District unless SNWA is specifically asked to do so by Lincoln County. Further, SNWA water right applications in Delamar Valley will not be permitted for in-basin industrial use. This should be noted for the entire EIS.

Ms. Linda Resseguie

March 30, 2011

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Volume 5, Part 1 (Page 11.2-59, Line 37): Groundwater most likely continues past a spring rather than terminating at a spring. Therefore suggest changing text from "...and terminates at" to "...may terminate at".

Volume 5, Part 1 (Page 11.2-60, Lines 1-8 and 29): The recharge and discharge values and flow directions and possible flow paths discussed in these paragraphs are not current. Please review the report *Water-Resources Assessment and Hydrogeologic Report for Cave, Dry Lake, and Delamar Valleys November 2007* which can be found at: [http://water.nv.gov/hearings/Dry\\_Cave\\_Delamar%20hearings/SNWA/Volume\\_3/236\\_Burns\\_WaterRights\\_DDLIC.pdf](http://water.nv.gov/hearings/Dry_Cave_Delamar%20hearings/SNWA/Volume_3/236_Burns_WaterRights_DDLIC.pdf).

Volume 5, Part 1 (Page 11.2-61, Line 26): Suggest adding in a statement that Ruling 5875 has been vacated but still represents the most recent data on perennial yield in Delamar Valley.

Volume 5, Part 1 (Page 11.2-61, Lines 36-39): This sentence is not completely accurate. Suggest replacing with the following: "In June 2010, the Nevada Supreme Court issued a ruling related to SNWA's water rights applications in Spring Valley, and based on this ruling, SNWA's appeal was dismissed in September 2010. The NDWR has been ordered to re-publish and reconsider SNWA's water right applications, including SNWA's Delamar Valley applications, and reopen the protest period related to the applications (*Great Basin Water Network v. State Engineer* 2010). When the State Engineer issues a new ruling on the SNWA applications, the new ruling could revise the amount of water granted to SNWA and could change the amount of unallocated water rights set aside for future water development in Delamar Valley."

Volume 5, Part 1 (Page 11.2-63, Lines 28 and 36): On Page 11.2-61, Lines 24 and 25, it states that the perennial yield of Delamar Valley is 2,550 acre-feet per year (afy). On Page 11.2-63, Line 28 it states that water requirements could be as high as 2,814 afy and on that same page, Line 36 notes that potential impacts would be assessed during the site characterization phase of project development. In order to avoid a major gap in an effects analysis, the EIS should attempt to quantify the effects of pumping double the perennial yield in Delamar Valley.

Volume 5, Part 1 (Page 11.2-67, Lines 4-7): The sentence concerning excessive groundwater withdrawals at the proposed Delamar Valley SEZ and its potential impacts is too speculative. This statement should be removed from the EIS or an effects analysis should be performed and the results added to the document.

Volume 5, Part 1 (Page 11.2-67, Line 19): Suggest adding in the following sentence: "When the State Engineer issues a new ruling on the SNWA Delamar Valley applications, the new ruling could revise the amount of water granted to SNWA and could change the amount of unallocated water rights set aside for future water development in Delamar Valley."

Volume 5, Part 1 (Page 11.2-331, Lines 27 and 32): Suggest noting that Ruling 5875 has been vacated, but still represents the most recent data on perennial yield in Delamar Valley. Also suggest adding in the following sentence: "When the State Engineer issues a new ruling on the SNWA Delamar Valley applications, the new ruling could revise the amount of water granted to SNWA and could change the amount of unallocated water rights set aside for future water development in Delamar Valley."

Volume 5, Part 1 (Page 11.3-57, Line 14): The Las Vegas Valley Water District's 2,200 afy of water rights are a combined duty water right from both Garnet and Hidden valleys. Suggest modifying the sentence as follows: "The Southern Nevada Water Authority (SNWA 2009) stated that the Las Vegas Valley Water District has leased the majority of their 2,200 ac-ft/yr (2.7 million m<sup>3</sup>/yr) of groundwater rights in Garnet and Hidden valleys to dry-cooled power plants in the area."

Volume 5, Part 1 (Page 11.3-59, Lines 18 and 19): Pursuant to a June 1, 2009 Agreement among SNWA, Las Vegas Valley Water District and the City of North Las Vegas, the City of North Las Vegas is the sole retail water provider for Garnet Valley. The 2009 agreement prohibits wet-cooled electric power generation and requires the City of North Las Vegas to restrict consumptive water uses. Therefore, dry-cooling or PV technology entities could negotiate with the City of North Las Vegas for water service. Suggest revising Lines 18 and 19 as follows: "As the City of North Las Vegas is the sole retail water provider in Garnet Valley, obtaining water from an offsite source (i.e., the City of North Las Vegas) would be necessary for dry-cooled or PV solar development projects." Further suggest adding a reference to obtaining water service from the City of North Las Vegas on Page 11.3-63, Line 40.

Volume 5, Part 1 (Page 11.3-61, Lines 30-32): Order 1169 only holds pending and new applications in abeyance. It does not apply to applications to change existing water rights. Recommend changing lines 30-32 as follows: "Also, 44,500 ac-ft/yr (55 million m<sup>3</sup>/yr) of water rights that have been applied for within the basin would be considered by the NDWR first before any applications for new water rights would be considered."

Volume 5, Part 1 (Page 11.3-348, Lines 8-10): The Las Vegas Valley Water District's 2,200 afy of water rights are a combined duty water right within both Garnet and Hidden valleys, and the rights are owned by the Las Vegas Valley Water District, not SNWA. Suggest revising to: "The Las Vegas Valley Water District has leased the majority of its 2,200 ac-ft/yr (2.7 million m<sup>3</sup>/yr) of Garnet and Hidden valley groundwater to dry-cooled power plants in the area (Section 11.3.9.1.3)."

Volume 5, Part 2 (Page 11.4-63, Line 11): The 11,584 afy granted to SNWA by Ruling 5875 did not fully appropriate the Dry Lake Valley Basin. After Ruling 5875 was issued, Ruling 5993 granted the Lincoln County Water District and Vidler Water Company 1,009 afy. Together, these two quantities fully appropriated the groundwater basin.

Volume 5, Part 2 (Page 11.4-63, Line 18-22): This sentence is not completely accurate. Suggest replacing with the following: "In June 2010, the Nevada Supreme Court issued a ruling related to SNWA's water rights applications in Spring Valley, and based on this ruling, SNWA's appeal was dismissed in September 2010. The NDWR has been ordered to re-publish and reconsider SNWA's water right applications, including SNWA's Dry Lake Valley applications, and reopen the protest period related to the applications (*Great Basin Water Network v. State Engineer* 2010). When the State Engineer issues a new ruling on the SNWA applications, the new ruling could revise the amount of water granted to SNWA and could change the amount of unallocated water rights set aside for future water development in Dry Lake Valley."

Volume 5, Part 2 (Page 11.4-68, Lines 29-33): These lines are not completely accurate. Suggest replacing with the following: "Pursuant to Ruling 5875, NDWR (2008) has found that a reasonable and conservative estimate of the perennial yield of the Dry Lake Valley basin is 12,700 ac-ft/yr, and NDWR has since granted permits to SNWA, the Lincoln County Water District and Vidler Water Company in the amount of 12,593 ac-ft/yr. However, Ruling 5875 has been vacated upon judicial review, and the SNWA Dry Lake Valley applications will be reconsidered by NDWR. Concerned parties and SNWA could present new information about the groundwater basin, and thus NDWR could alter its previous assessment of water availability in the basin."

Volume 5, Part 2 (Page 11.4-68, Line 40): The assumption that groundwater extractions would be limited to 11,584 afy correlates exactly to the amount of water granted to SNWA in Ruling 5875. While Ruling 5875 has been vacated, that does not mean that the 11,584 afy granted to SNWA is now available to be appropriated by other users. Rather, SNWA still has the senior applications for this amount of water, so it is not correct to assume that this amount of water can be put to use for solar power generation. A more reasonable assumption would be to assume that the 50 afy of unallocated water reserved in Ruling 5875 would again be available to solar power generation after the re-hearing on SNWA's applications. It is not realistic to assume that there is enough unappropriated water in Dry Lake Valley to support wet cooling options. The water impacts analysis presented in Dry Lake Valley should closely mirror the analysis and assumptions for the Delamar Valley SEZ because in both basins it is reasonable to assume only 50 afy of unallocated water.

Volume 5, Part 2 (Page 11.4-320, Lines 3-7): These sentences are not completely accurate. Suggest replacing text with: "However, this water right allocation has been vacated upon judicial review, and the SNWA Dry Lake Valley applications will be reconsidered by NDWR. Concerned parties and SNWA could present new information about the groundwater basin, and thus NDWR could alter its previous assessment of water availability in the basin."

Volume 5, Part 2 (Page 11.5-310, Line 18): SNWA does not plan to install any groundwater wells in the East Mormon Mountain SEZ. Please delete this error.

### Rangeland Resources

Volume 5, Part 2 (Page 11.4-5; Table 11.4.1.3-1): SNWA requests the boundary of the Dry Lake Valley North SEZ be adjusted to avoid the Wilson Creek grazing allotment. SNWA holds livestock grazing permits for the Wilson Creek grazing allotment and designation of the Dry Lake Valley North SEZ will critically impact SNWA's sheep operation. SNWA's entire sheep winter grazing and lambing operations and part of its sheep spring grazing operation rely entirely on the Wilson Creek grazing allotment. This grazing allotment is especially important during winter operations for two primary reasons: mild weather conditions and high quality forage. Mild weather within this allotment facilitates lamb survival, reduces stress to ewes, reduces potential disease issues and allows for proper use of grazing resources due to high levels of on-the-ground management. High quality forage (e.g. winterfat communities) within this allotment provides pregnant ewes with a high level of nutrition which is critical during the third trimester of pregnancy and during and immediately after lambing. According to Table 11.4.1.3-1, the proposed designation will cause the entire winter range for the Wilson Creek allotment to be lost. The associated mitigation suggested, compensation, does not adequately address the impact created by the establishment of the SEZ. Moving the SEZ south or decreasing its size will allow SNWA grazing and lambing operations to continue in the Wilson Creek grazing allotment. However, moving the SEZ south may affect other livestock operators within the vicinity of the Dry Lake Valley SEZ and potential impacts of this action would need to be analyzed for.

### Access

SNWA has existing ROWs from the BLM for groundwater monitoring and testing wells that are located adjacent to the Delamar Valley and Dry Lake Valley North SEZs. These facilities are part of ongoing regional groundwater monitoring and are visited at least quarterly to collect data. Access to these facilities uses existing access roads through both SEZs. The EIS should identify that existing access roads to existing ROWs would either be maintained or the BLM or solar project developer would develop alternative access routes acceptable to the ROW holder. SNWA hereby requests that the BLM consult with SNWA during any future project-specific analyses to ensure access to these existing ROWs is maintained.

### Cooperating Agency Status

On March 4, 2010, SNWA received an invitation from BLM to be a cooperating agency on the Solar Energy Programmatic EIS. On March 17, 2010, SNWA responded to the request accepting cooperating agency status. Following SNWA's response, no further correspondence from the BLM was received by SNWA. Further, SNWA was not on the list of cooperating agencies presented at the public meeting held on February 15, 2011, in Las Vegas, Nevada and SNWA was not listed as a cooperating agency in the Federal Register Draft Programmatic EIS Notice of Availability (December 17, 2010). SNWA

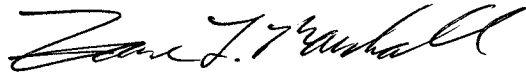


Ms. Linda Resseguie  
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requests a briefing on the proposed project and to be fully involved in development of the Final EIS in accordance with the accepted cooperating agency status.

If you have any questions regarding these comments or need additional information, please contact Kimberly Reinhart, Senior Environmental Planner, at (702) 862-3457 or at [kimberly.reinhart@snwa.com](mailto:kimberly.reinhart@snwa.com).

Sincerely,

A handwritten signature in black ink, appearing to read "Zane L. Marshall". The signature is fluid and cursive, with the first name "Zane" being the most prominent.

Zane L. Marshall  
Director, Environmental Resources Department

ZLM:CL:df

Comments on PEIS Solar Energy Draft Programmatic PEIS

Submit comments in writing to PEIS, Argonne National Laboratory, 9700 S. Cass Ave. EVS/240, Argonne, Ill. 60439

Submitted by Lorna Moffat

PO Box 545, Monterey, Calif. 93942

To whom it may concern,

Solar energy alternatives: Table ES-2-5 SEZ alternative, as well as all three alternatives does not give a comprehensive explanation on the impact on wild horses and burros.

Since BLM has a propensity to remove wild horses from the HMA's with every excuse imaginable it is imperative that any wild horse and burro HMAs within the scope of proposed Solar projects be addressed on how the BLM will keep our wild horses in the HMAs where these solar projects are developed. Wild horses must be the principal presence under the Wild Free Roaming Horse and Burro Act in their legal HMA's and the solar projects must not infringe upon their dwindling numbers regardless of multiple use mandate because the law still favors the wild horse and burro in its HMA's as 'principal presence.'

In the PEIS, Preferred Alternative, Table ES.2-2 Areas of Exclusion the wild horses and burros are not mentioned and should be included since contrary to BLM say so wild horses and burros are becoming extinct on our public lands.

I have personally visited the HMA's and saw 6 small bands on tens of thousands of acres of HMA's, a sorry testimony of BLM's criminal behavior towards our treasured icons of history.

Therefore please address in the FEIS how the BLM will keep wild horses and burros where these solar projects are proposed to be.

What water use will impact the HMA's?

What mitigation measures will be taken to insure our wild horse and burros are protected?

Suggestions to this problem might include moving them to other areas if need be such as zeroed out HMA's, making sure the horses and burros can move freely within the proposed solar plant sites, or creating other HMA's where solar projects might not be tolerated.

Wherever the horse and burros might be moved to it must be comparable in all aspects to where they are dwelling now.

For example they cannot be moved to feedlots or smaller HMA's where water is scarcer.

Table ES-2-5.

Water Resources.

The PEIS does not explain how the water uses can be mitigated.

Please explain mitigation measures.

The use of water resources is blithely glossed over in the PEIS when in fact, because these areas are water starved by nature, using the aquifers and groundwater will not only greatly impact the whole areas within the projects site but potentially many districts away.

Please elaborate how far away water resources could be affected, what districts and the impact those districts will experience in water usage both for wildlife, plants and human dwelling sites.

Please address in depth the amount of water the proposed project will use daily, monthly, yearly, where the water source will come from and what plant and wildlife will be potentially affected by this use.

Mitigation measures should not come from the natural water resources themselves but from the companies wishing to utilize the areas proposed. For example, if a solar project wants to use a certain area it must come up with ways and means to provide water for the project with minimum impact to natural sources of water so as not to deprive and deplete the wildlife and plant life surrounding as well as county's away. Therefore solar projects should be required to come up with sizable water catchments so as to provide its own water source for such projects.

Solar projects should be required to come up with extensive filtering systems and drains to those filtering systems so as to protect the surrounding ground water and aquifers from chemical pollution. None of this addressed in the PEIS and should be.

All solar projects should be required to provide alternative places and solutions to placements of solar energy projects before covering our public lands.

For example, utilizing rooftops across America is a much more available, cheaper, and environmentally sound way of providing solar energy.

Arco Solar, under the Carter Administration was about to do just that in 1982 with tax credits.

I happened to interview ARCO SOLAR about this very plan. The plan was to put solar panels on rooftops across America free of charge to the residents and businesses.

It worked something like this. If a customer wanted solar energy they would call their electric company and willingly agree to lease their rooftops to the energy company who would then place the panels on the rooftops that fed back into the grid.

The customer received a smaller electric bill and the company had fewer expenses in transmission and real-estate costs. It was a win-win situation for everyone.

Please address in the Final EIS how a solar project must first go through a process that shows its true and good intent on finding such alternative building sites before covering public lands.

This could greatly reduce the use of our public lands that will otherwise be affected by these thermal solar plants. It would greatly reduce the scarce water use since reclamation of waste water could be made available in cities by these solar projects. The cost would be mitigated by the reduction of transmission costs.

The Preferred Alternative states it is preferred because it reduced cost to the companies, BLM and government agency's which means it is will be harder on the environment. This is always the case.

Because these solar projects will make our environment pay dearly in terms of environmental damage to the natural ecosystems this alternative cannot be acceptable.

If any solar projects are to be allowed they must have the highest priority in safeguarding the environment and eco systems. Please address in the FEIS how you will insure this happens

Please address the alternative use of rooftops in cities such as Reno, NV as opposed to public lands...

*Submitted by Korrin Meffert  
PO Box 545  
Montney, CA 93942*



PLANNING DIVISION  
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Christine Kelly  
Director

April 11, 2011

Argonne National Laboratory  
Linda Resseguie, BLM Document Manager  
Jane Summerson, DOE Document Manager  
Solar Energy Draft PEIS  
9700 S. Cass Avenue  
EVS/240, Argonne, Illinois 60439

**RE: San Bernardino County Review and Comment on the Draft Programmatic Environmental Impact Statement (PEIS) for Solar Energy Development in Six Southwestern States (December, 2010)**

Dear Ms. Resseguie and Ms. Summerson:

Thank you for providing us a copy of the above-referenced document. During the Administrative Draft stage, the County of San Bernardino (County) staff provided comments (September, 2010) outlining concerns that we have regarding the Solar Energy Development Program Environmental Impact Statement (PEIS). Unfortunately, the comments from the County that were originally provided in our September, 2010 correspondence have not been adequately addressed. Thus, the County has reviewed the Draft PEIS and is providing the following comments:

**1. Mitigation Lands**

In other forums, the County has expressed its concerns about the mitigation for biological impacts that is consistently being required for renewable energy projects within the County. These concerns bear repetition here due to the significant amount of County land within the area considered in the PEIS.

First, the PEIS states on page 1-4, lines 20-24 that, "The BLM analysis in the PEIS is limited to utility scale solar development on lands administered by the BLM within the six-state study area. DOE's analysis considers all lands within the six-state study area because its support is not restricted to projects conducted on BLM administered lands." It further states on page 1-18, lines 21-23 that, "DOE will consider, as appropriate, the relevance of the analytical results for all lands in the six-state area, not just BLM-administered lands," and on page 1-19, lines 25-26 it states, "DOE may support solar projects within [Solar Energy Zones] identified by the BLM; on other BLM-administered lands; or on the other federal, state, Tribal, or private lands." Thus, although the PEIS will apply to projects that will have direct and indirect impacts upon "private lands," the PEIS does not appear to have adequately addressed and analyzed the direct and indirect impacts upon "private lands." The discussion of DOE's Alternatives contained in Chapter 7 fails to address this with any degree of specificity.

Second, the "Solar Energy Development Program Alternative" is the BLMs/DOEs stated preferred alternative. This alternative includes 21.5 million acres of BLM administered lands; with 1.76 million

acres of these lands within California (as shown in Table ES 2-1). Under this alternative, it is highly likely there would not be enough private land in the affected California-counties to be able to mitigate this amount of renewable energy project development. For this reason alone, the statement made on page ES-29, lines 21-23, regarding the "Solar Energy Development Program Alternative" (i.e. "BLM's Preferred Alternative"), that, "Simultaneously, it (i.e. this alternative) would provide a comprehensive approach for ensuring that potential adverse impacts would be minimized to the greatest extent possible," is unfounded.

This point is extremely important, and in fact critical to the County. The fundamental issue is that the wildlife agencies, specifically the U.S. Fish and Wildlife Service (FWS) and the California Department of Fish and Game (CDFG), have been requiring mitigation for desert tortoise to include the acquisition of private land and subsequent donation ("compensation") of the land to either BLM or CDFG. The mitigation ratio is generally three (3) acres of private land per acre (1) of development, but in projects involving critical habitat, has gone as high as a 5 to 1 ratio. While the two Solar Energy Zones (SEZs) within the County lie outside of critical habitat for desert tortoise, they do lie within identified habitat and are likely occupied. This has the effect of increasing the federal estate in the County, and taking private land off the tax rolls. The federal Payment in Lieu of Taxes (PILT) program does not provide funding to offset this loss of revenue. Most critically, and germane to the mitigation issue, is that a) private lands are diminishing in the County and will likely not exist in sufficient quantity to meet mitigation requirements, b) as private land is taken off the tax rolls, the ability of the County to maintain its infrastructure and supply services diminishes at the very time the solar developments will increase use of those very services, and c) the County, like all counties in California, is unable under state law to collect property tax (which might offset at least part of the loss and cost) on the capital investments made for solar developments as a result of State law exempting such development. The County has advocated that mitigation be changed to a development/mitigation fee in which the funds can be utilized to foster appropriate land management, improvement and research, and such has been authorized under SB-34, a recent state law. However, to date, the wildlife agencies have been unwilling to accept such mitigation except in addition to land compensation. We believe that the Solar PEIS could and should become a further advocate for bringing the mitigation issue to the fore, and proposing that mitigation be in the form of investments for improvement, recovery actions and research on listed and candidate species, and that land acquisition and increasing the federal estate be removed as a mitigation measure.

Third, the "Solar Energy Zone (SEZ) Program Alternative" would authorize solar energy development only in the identified SEZs (listed in Table ES 2-3). In addition to those listed, the BLM could decide later to increase or decrease the total SEZ area. The amount of BLM administered lands constituting the SEZ Program Alternative in California (as shown in Table ES 2-1) is 339,090 acres. This amount of acreage is more than twice the amount estimated by the "reasonably foreseeable (future) development." Mitigation requirements in California, in this case, could possibly exceed two or three million acres. Under this alternative, it is also highly likely there would not be enough private land in the affected California-counties to be able to mitigate this amount of renewable energy project development, unless our suggestions, above, were adopted.

Fourth, the "reasonably foreseeable development" scenario indicates that for California about 139,000 acres of BLM-lands and 46,000 acres of non BLM-lands could be developed. Mitigation requirements could be in-excess of .5 million acres (possibly up to one million acres or more). Under the "reasonably foreseeable development" scenario, it is therefore unclear as to the extent of mitigation lands required.

Fifth, if such mitigation lands, in their entirety, were to be private lands, then (for either of the two alternatives) there will not be enough mitigation lands; and for the reasonably foreseeable development scenario, it is highly probable that mitigation lands may be used up and not available for future

development projects. The scale would render vast portions of private land unavailable for future use and would severely limit the ability of future development to adequately mitigate its impacts. *[NOTE: An example of such potential cumulative impact is the Ivanpah SEGS Project.<sup>1</sup> The mitigation set aside for this 4,073 acre project is 8000 acres (at a 3:1 ratio). In the County, 8,000 acres represents five percent of the 140,000 acres of potential desert tortoise habitat held in private lands within the County. As stated above, the 'reasonably foreseeable development scenario alone could result in a need for more than 1.0 million acres of mitigation land, exceeding the available supply of private lands. Also, the SEZ Program Alternative as defined, could amount to three million acres of mitigation land. As a result, there are only three million acres of County private land in the West Mojave Plan Area (alone)].* This concern is validated, as the BLM has previously stated during the September 1, 2010 conference call that, "the PEIS is not identifying 'public lands' as mitigation lands. Nothing in the document specifies which type of lands (public vs. private) will be mitigation lands."

Given that the PEIS will apply to projects that will have direct and indirect impacts upon private lands, and given that nothing in the PEIS document specifies which type of lands (public or private) will be mitigation lands; therefore, the County recommends the following kinds of mitigation be included for consideration on any specific project:

- The land and wildlife management agencies determine an appropriate mitigation fee based on criteria associated with habitat replacement or other quantitative criteria. Such funds paid by the developer to a trust (such as currently exists under the auspices of the Desert Managers Group (DMG) and its MOU with the National Fish and Wildlife Foundation (NFWF), who would dispense the funds to appropriate mitigation projects and measures. Issuance of the Revised Recovery Plan for desert tortoise is imminent (expected by May 1, 2011), and Recovery Action Plans (RAPs) will be developed for each recovery unit. Implementation will require funding, and such funding will be limited from appropriations, thus mitigation funds will be an appropriate and welcome source with which to proceed with carrying out the RAPs. We envision such funding would be used for projects such as fencing, habitat restoration, invasive weed control, hazard reduction where hazards contribute to tortoise death, research, monitoring, increased enforcement, and population augmentation with programs such as head starting.

The developer could acquire private rights that exist on public land. Since many BLM-administered lands have use entitlements associated with them (particularly through right-of-way authorizations, etc.), then in terms of fairness to land owners (private property owners) and renters, lessees, permittees, or holders of valid existing rights (public property) alike, both public and private lands should be analyzed, evaluated, and considered for identification as potential mitigation lands. This strategy would result in greater equity among all parties in that mitigation responsibility would be shared among public and private landowners, renters, permittees, or lessees.

It is recognized, as stated on page 2-26, lines 15-16, of the PEIS that comments previously provided suggest, ". . . that the scope of the PEIS include evaluation of development on other federal lands . . . state lands, and private lands." The comment above is not repeating this suggestion. Rather, the comment above is stating that federal lands (with use entitlements) need to be considered or utilized as mitigation lands in a similar manner as private lands. BLM, through the process of revising the Land Use Plans (Resource Management Plans) should identify those public lands that could be identified or offered as mitigation lands (separate, and aside from, 'exclusion areas'). Further, follow-on site-specific environmental analysis of solar energy projects needs to include, consider and utilize federal land as mitigation in a similar manner as private lands.

<sup>1</sup> <http://www.energy.ca.gov/sitingcases/ivanpah/index.html>



Sixth, the County supports mitigation requirements that address the loss of historic and recognized land uses including dispersed recreation (OHV use or hunting), livestock grazing, and general public access to public lands. The County recommends that projects that remove areas of relatively flat, accessible land historically providing for grazing allotments, access routes to back country, and open OHV play should be mitigated by the dedication of other areas of public land to such activities or possibly the acquisition of lands that can be so dedicated.

In summary, the County recommends that the BLM/DOE identify and evaluate an additional alternative in the PEIS if the Final PEIS continues to endorse the use of private land acquisition and donation to the public estate. The additional alternative would be a "Solar Energy Zone (SEZ) Program at a scale commensurate with the Reasonable Foreseeable Development." This would provide an evaluation at a scale that balances the need to provide for renewable energy projects and at the same time could define a "realistic" extent of mitigation lands. Further, such an alternative could factor in both public and private lands as potential mitigation lands. This would also need to provide for replacement of grazing allotments, access routes, open OHV play areas, etc. by dedication of other areas of "public land" to such activities. This type of alternative could ensure that mitigation lands are available in the future, for other development proposals (i.e., projects other than renewable energy projects). The County's preferred alternative would be to shift mitigation to the charging of a development/mitigation fee which would provide for a suite of mitigation measures and could assure that such funding be spent on the highest priority projects with the highest expected benefit to the species for which mitigation is being sought.

A further alternative could also include identifying and evaluating additional Alternative SEZs in lieu of the Pisgah Peak and/or Iron Mountain SEZs.

## **2. Water**

The Solar PEIS states (page 5-37, lines 22-24), "The six-state study area is largely composed of arid landscapes; thus water use by solar energy technologies is a significant consideration for water resources impacts and also requires the analysis of water and land management practices." Although identified as significant, the "water analysis" is lacking in the PEIS.

The PEIS states on page 5-39, lines 12-13, "In most areas, groundwater would likely be withdrawn from local aquifers to meet the project's water needs," and on page 5-37, lines 24-27, "acquiring reliable, long-term water supplies to support utility-scale solar facilities would entail either the acquisition of unallocated water supplies (depending on availability) or the conversion of existing water rights from current uses." Although it is presumed most water will come from groundwater basins, no evaluation of impacts to groundwater basins is included in the PEIS. Without clarity of impacts upon water resources, how can appropriate, applicable, realistic, meaningful mitigation measures be identified?

Unfortunately, the PEIS only provides "General Estimates of Water Requirements for Various Solar Power Plant Configurations" (page 5-45, Table 5.9-1). There is no link of these stated water estimates to actual water demand or to actual water availability (supply).

Also, the PEIS (page 5-46, lines 24-34) gives a series of "Potentially Applicable Mitigation Measures." These "measures" (which are basically "hopes" and "desires") are stated on pages 5-47 through 5-55. All of these "measures" describe what "should" occur or what is "hoped or desired" to occur, but have no substance as to what "can" or "will" occur regarding mitigation of significant impacts to water. "Measures" such as

- “Project developers should quantify water use requirements for project construction, operation, and decommissioning” (page 5-50, lines 7-8), and
- “The use of water should not contribute to the significant long-term decline of groundwater levels or surface water flows and volumes. Any project-related water use should not contribute to withdrawals that exceed the sustainable yield of the surface water or groundwater source.” (page 5-54, lines 39-42)

are stated as wishes, hopes, and desires; not compulsory requirements. Per the PEIS, these “measures” are identified as only “potentially applicable.” This means that significant impacts to water resources might not be mitigated.

Further, under County Ordinance 3872 (County Code § 33.06551 et seq.)<sup>2</sup>, adopted in October 2002, groundwater withdrawals in unadjudicated basins that will harm the Groundwater Safe Yield are not permitted. Groundwater Safe Yield is defined in Section 33.06553 (i) as: “The maximum quantity of water that can be annually withdrawn from a groundwater aquifer (i) without resulting in overdraft (ii) without adversely affecting aquifer health and (iii) without adversely affecting the health of associated lakes, streams, springs and seeps or their biological resources.” The County and the BLM entered a Memorandum of Understanding in 2003 for implementation of Ordinance 3872 on public lands in the Mojave Desert.

In summary, as the entire Southwest has been in a severe drought this past decade and deliveries of imported water become increasingly unreliable, the PEIS must examine in detail the impact of solar energy development on water, including groundwater aquifers. The impacts upon water resources from solar energy projects will be significant, individually, and cumulatively. The PEIS must consider and evaluate the cumulative impacts on water supply throughout the desert in light on ongoing urban growth, reduced supplies, and the need to maintain the health of desert ecosystems. The water issue must be examined in total, and evaluation of all supplies and demands of water projected for the study areas must be evaluated. Only upon completion of such evaluation can appropriate, applicable, realistic, and meaningful mitigation measures be identified. “Mitigation” must be compulsory, rather than a “wish list” of actions.

Given the scarcity of water, and existing appropriations, the County recommends that the Final Solar PEIS must include an alternative or advocacy for the use of “dry” technology for development; and for the Pisgah SEZ specifically, we recommend that be the recommended form of development.

### **3. Endangered Species (and Special Status Species)**

According to National Environmental Policy Act (42 U.S.C § 4321 et seq.), the federal agencies are not required to implement mitigation measures. As a result, the PEIS (Chapter 5) only includes “Potential Mitigation Measures.” Thus this Chapter identifies “Potential Mitigation Measures” that “should be” implemented, but also may not be implemented. Further, pages 5-62 (Table 5.10-1), 5-96 (Table 5.10-2), 5-110 (Table 5.10-3), and 5-123 (Table 5.10-4) state that for the overall project evaluated in this PEIS, the ability to mitigate impacts to habitat, plants and wildlife, aquatic resources, and special status species (including threatened, endangered, sensitive, and rare species) is “relatively difficult,” and, “depends on the size of area development,” and “depends on site-specific conditions.” Thus, the PEIS is

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inconclusive as to the ultimate impact upon endangered (and special status) habitat, plant, and wildlife species. The ultimate impact upon endangered (and special status) habitat, plants, and wildlife species can only be determined at the project-specific evaluation level. Since the ability to mitigate impacts can only be determined upon identifying the size of area to be developed, and at the project-specific evaluation level, then the PEIS cannot conclude impacts to endangered (and special status) habitat, plants, and wildlife will be "mitigated," nor make any conclusions about "impacts" to endangered (and special status) habitat, plants and wildlife.

The mitigation measure on page 5-131, lines 39-42, states, "If any federally listed threatened and endangered species are found during any phase of the project, the USFWS should be consulted as required by Section 7 of the [Endangered Species Act], and an appropriate course of action should be determined to avoid or mitigate impacts," and the measure on page 5-134, lines 3-4 and 36-38, states, "The plan should include but not necessarily be limited to the following element, where applicable: . . . Measures to mitigate and monitor impacts on special status species developed in coordination with the appropriate federal and state agencies (e.g., BLM, USFWS, and state resource management agencies)." Relative to these particular mitigation measures, the County opposes the acquisition of habitat at a multiplied (e.g., 3:1) mitigation ratio for desert renewable energy projects because the scale of the proposed projects (as defined by the PEIS) would render vast portions of private land unavailable for future use and could severely limit the ability of future development to adequately mitigate its impacts. Instead, the County supports the implementation of an "in-lieu" fee program that will provide much needed funding for conservation, habitat restoration, implementing species recovery strategies, and predation control, but not be used to purchase vast tracts of mitigation lands or impose additional restrictions on public or private land.

#### **4. Endangered Species (and Special Status Species)- Iron Mountain SEZ**

The mitigation in Chapter 9 on page 9.2-14 states, "Consultations with the USFWS and CDFG should be conducted to address the potential for impacts on desert tortoise, a species listed as threatened under the [Endangered Species Act] and [California Endangered Species Act]. Consultation would identify an appropriate survey protocol, avoidance measures, and, if appropriate, reasonable and prudent alternatives, reasonable and prudent measures, and terms and conditions for incidental take statements." In addition, the mitigation measure on page 9.2-13 states, "Pre-disturbance surveys should be conducted within the SEZ to determine the presence and abundance of special status species." Relative to these particular mitigation measures, the County opposes the acquisition of habitat at a multiplied (e.g., 3:1) mitigation ratio for desert renewable energy projects because the scale of the proposed projects would render vast portions of private land unavailable for future use and could severely limit the ability of future development to adequately mitigate its impacts. Instead, the County supports the implementation of the "in-lieu" fee program mentioned above.

#### **5. Endangered Species (and Special Status Species)- Pisgah SEZ**

The mitigation in Chapter 9 on page 9.3-13 states, "Consultations with the USFWS and CDFG should be conducted to address the potential for impacts on the Mohave tui chub and desert tortoise species listed as endangered and threatened, respectively, under the ESA and CESA. Consultation would identify an appropriate survey protocol, avoidance measures, and, if appropriate, reasonable and prudent alternatives, reasonable and prudent measures, and terms and conditions for incidental take statements." In addition, the mitigation measure on page 9.3-12 states, "Pre-disturbance surveys should be conducted within the SEZ to determine the presence and abundance of special status species. . . . A comprehensive mitigation strategy for special status species that used one or more of these options to offset the impacts of development should be developed in coordination with the appropriate federal and

state agencies.” Relative to these particular mitigation measures, as stated earlier, the County opposes the acquisition of habitat at a multiplied (e.g., 3:1) mitigation ratio for desert renewable energy projects because the scale of the proposed projects would render vast portions of private land unavailable for future use and could severely limit the ability of future development to adequately mitigate its impacts. Instead, the County supports the implementation of the “in-lieu” fee program mentioned above.

## **6. Infrastructure Impacts- Development-Operations-Funding**

The PEIS only addresses “Transportation” from a narrowly defined perspective, that is: Traffic Hazards and Circulation/Capacity. The PEIS does not address “Transportation” from the “Development-Operations-Funding” perspective. Thus, the PEIS general mitigation measures on pages 5-257, lines 12-46, and page 5-258, lines 1-3, related to “Transportation” only focus on “Traffic Management Plans” and traffic hazards reduction. Additionally, the PEIS states in Chapter 9 on page 9.3-300, lines 29-34, relative to the Pisgah SEZ, “No SEZ-specific design features have been identified related to impacts on transportation systems around the Pisgah SEZ. The programmatic design features discussed in Appendix A, Section A.2.2, including local road improvements, multiple site access locations, staggered work schedules, and ride sharing, would all provide some relief to traffic congestion on local roads leading to the site. Depending on the location of the proposed solar facility within the SEZ, more specific access locations and local road improvements would be implemented.” Further, in Chapter 9 relative to Iron Mountain SEZ, the PEIS states on page 9.2-19, under SEC Specific Design Features, “None.”

Thus, the PEIS does not provide any information relative to how the proposed program (as defined in the PEIS) will impact “Transportation” from the development, operations and funding standpoints. No current mechanism exists to address the impacts these projects will have on public safety facilities and transportation infrastructure in the County. Large scale development existing in desert areas is already underfunded for public safety facilities because of significant federal ownership. Also, the proposed program (as defined in the PEIS) will only exacerbate impacts on the County’s limited financial resources. According to the County’s policy statement relative to these types of projects, the County is open to “a variety of approaches to address this issue, including targeted Development Impact Fees and/or direct mitigation in the form of developer constructed facilities, and is requesting that the state and federal energy and resource agencies (California Fish and Game, U.S. Fish and Wildlife Service, California Energy Commission, BLM, etc.) implement policies and procedures requiring developers of utility scale renewable energy projects to enter into mitigation agreements, pay appropriate fees, or develop other mechanisms to mitigate impacts on local agencies.” The County recommends including this language in the PEIS as mitigation.

Also, no current mechanism exists to address the impacts these project will have on the ongoing costs of providing adequate public safety and transportation services, as well as the loss of recreation and tourism revenue. Again, according to the County’s policy statement, the County is open to “a variety of approaches to address this issue, including Possessory Interest Tax, Federal Lease Revenue Sharing, Community Facilities District Formation, and others.” The County recommends including this language in the PEIS as mitigation. Preliminarily, it appears that the ongoing operation and maintenance costs will be addressed by a Possessory Interest Tax, which should approximate property tax revenue given the expected long term of a federal land lease.

## **7. Summary**

The County has goals similar to a number of local county and city jurisdictions regarding renewable energy, including:

- 1) Encourage economic growth and job creation;
- 2) Conserve our unique natural resources;
- 3) Find the best balance to achieve both of the above;
- 4) Encourage sustainable renewable energy projects;
- 5) Require projects to pay their own way so our taxpayers don't subsidize them; and
- 6) Support practical mitigation strategies that do not consume excessive amounts of land.

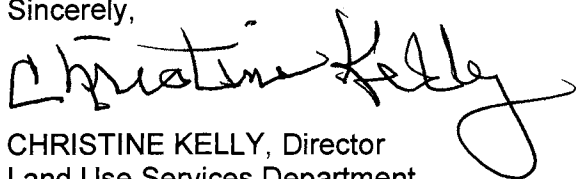
We also have concerns similar to a number of local jurisdictions, including:

- 1) Large-scale project will result in lost economic opportunities. Tourism, mining, grazing, film industry, and recreational opportunities will be lost.
- 2) The current California Department of Fish and Game paradigm requires multiplying project lands by a ratio not found in any regulations or even a written policy. Some projects are hit with additive mitigation for different species. These lands also represent lost economic opportunity and thus increase the project impacts.
- 3) There is no clear path for local governments to have economic impacts addressed and mitigated. Costs to local infrastructure and public services are not fully addressed by federal agencies or the California Energy Commission.

Local governments support renewable energy, and we look forward to the positive economic impact the development of these projects can bring to our local economy. This proliferation of energy projects in the Mojave Desert require careful evaluation and consideration of the appropriate mitigation measures that are needed to protect the environment, future development, and the economy of our region. Because many of these projects will be built on federally-owned land or are under the jurisdiction of the California Energy Commission, local governments do not have control over them. Yet the projects result in impacts on local government infrastructure and services with no clear mitigation mechanism. As stated above, the PEIS does not adequately address these impact issues.

If you have any questions, regarding this letter, please direct them to Matt Slowik at [mslowik@lud.sbcounty.gov](mailto:mslowik@lud.sbcounty.gov) or call him at (909) 387-4237.

Sincerely,



CHRISTINE KELLY, Director  
Land Use Services Department

Attachments:

- A Fair-Share Contribution Agreement-Solar Partners, LLC
- B County Policy
- C NACO Resolutions

cc: Brad Mitzelfelt, First District Supervisor  
Gerry Newcombe, Deputy Executive Officer  
Bart Brizzee, Deputy County Counsel  
Judy Tatman, Supervising Planner, Land Use Services Department



FOR COUNTY USE ONLY

County of San Bernardino

F A S

CONTRACT TRANSMITTAL

<input checked="" type="checkbox"/> New	Vendor Code		<b>SC</b>	Dept.	<b>A</b>	Contract Number			
<input type="checkbox"/> Change									
<input type="checkbox"/> Cancel									
County Department				Dept.	Orgn.	Contractor's License No.			
County Administrative Office									
County Department Contract Representative				Telephone		Total Contract Amount			
Gerry Newcombe				(909) 387-5425		\$			
Contract Type									
<input type="checkbox"/> Revenue <input type="checkbox"/> Encumbered <input type="checkbox"/> Unencumbered <input type="checkbox"/> Other:									
If not encumbered or revenue contract type, provide reason:									
Commodity Code		Contract Start Date	Contract End Date	Original Amount	Amendment Amount				
					\$				
Fund	Dept.	Organization	Appr.	Obj/Rev Source	GRC/PROJ/JOB No.	Amount			
						\$			
Fund	Dept.	Organization	Appr.	Obj/Rev Source	GRC/PROJ/JOB No.	Amount			
						\$			
Fund	Dept.	Organization	Appr.	Obj/Rev Source	GRC/PROJ/JOB No.	Amount			
						\$			
Project Name				Estimated Payment Total by Fiscal Year					
Ivanpah Solar				FY	Amount	I/D	FY	Amount	I/D
Electric Generating Complex									

CONTRACTOR Solar Partners I, LLC (SPI); Solar Partners II, LLC (SPII); and Solar Partners VIII, LLC (SPVIII)

Federal ID No. or Social Security No. SPI – 20-8812461; SPII 36-4608152; and SPVIII 36-4608159

Contractor's Representative John F. Jenkins Stark, Chief Financial Officer

Address 1999 Harrison Street, #2150, Oakland, CA 94612 Phone (510) 550 - 8461

Nature of Contract: *(Briefly describe the general terms of the contract)*

This is a Fair Share Contribution Agreement between the County, the San Bernardino County Fire Protection District, and Solar Partners I, LLC, Solar Partners II, LLC, and Solar Partners VIII, LLC regarding payment to the County and SBCFPD for fire protection and emergency response services for the Ivanpah Solar Electric Generating Complex.

THIS IS NOT A CONTRACT  
THIS IS A COVER  
TRANSMITTAL ONLY

*(Attach this transmittal to all contracts not prepared on the "Standard Contract" form.)*

Approved as to Legal Form (sign in blue ink)	Reviewed as to Contract Compliance	Presented to BOS for Signature
Bart Brizzee, County Counsel	Department Head	
Date _____	Date _____	Date _____

**Auditor/Controller-Recorder Use Only**

<input type="checkbox"/> Contract Database	<input type="checkbox"/> FAS
Input Date	Keyed By

**FAIR-SHARE CONTRIBUTION AGREEMENT**  
**By and among**  
**THE SAN BERNARDINO COUNTY FIRE PROTECTION DISTRICT,**  
**THE COUNTY OF SAN BERNARDINO**  
**And**  
**SOLAR PARTNERS I, LLC,**  
**SOLAR PARTNERS II, LLC, and**  
**SOLAR PARTNERS VIII, LLC**  
**Related to**  
**FIRE-PROTECTION AND EMERGENCY MEDICAL SERVICES MITIGATION**  
**FOR THE IVANPAH PROJECT**

This Fair-Share Contribution Agreement (the “Agreement”) is made and entered into effective on the date of the last party’s signature below (the “Effective Date”), by and among (1) the San Bernardino County Fire Protection District (“SBCFPD”), (2) the County of San Bernardino (the “County”) and (3) Solar Partners I, LLC, Solar Partners II, LLC, and Solar Partners VIII, LLC, each a Delaware limited liability company (collectively “OWNERS”, and together with the County and SBCFPD, the “Parties”, and each a “Party”).

**RECITALS**

A. OWNERS intend to develop, construct and operate a solar electric generating complex near Ivanpah Dry Lake, California, consisting of three separate power plants currently known as Ivanpah 1, Ivanpah 2, and Ivanpah 3 (each individually a “Project” and collectively the “Projects”) on approximately 3,272 acres in an unincorporated portion of the County described in Exhibit “A” attached hereto.

B. In order to mitigate potential fire risks and risks requiring emergency response and to ensure the orderly provision of fire protection and emergency response services as the Projects are built out, OWNERS intend to implement, during the construction and operations phases of the Projects, a Fire Prevention Plan and Emergency Preparedness Plan, copies of which have been provided to the County and are attached as Exhibit “B.”

C. With the input of the County, SBCFPD and OWNERS, SBCFPD has caused Stanley R. Hoffman Associates to prepare a study of the Projects’ impacts on fire protection and emergency response services. The version of that study as of the date of this Agreement, the



“Estimated Allocation of Fire Facility Costs to Proposed Solar Energy Installations Project #1210,” dated June 30, 2010 (as amended from time to time, the “Fiscal Impact Analysis”), is attached hereto as Exhibit “C.”

D. The Parties agree that this Agreement is intended to (i) implement the recommendations of the Fiscal Impact Analysis (as revised from time to time and except to the extent modified herein), (ii) dictate the terms upon which OWNERS shall fulfill their fair-share contribution requirements for any and all impacts to fire protection and emergency response services in connection with the development, construction, operation, maintenance, decommissioning and closure of the Projects, whether such services are provided directly by SBCFPD or pursuant to other arrangements entered into by SBCFPD, as well as inspections and periodic training related thereto, and (iii) to satisfy the requirements (except for the California Energy Commission reporting requirements in the verification portion of Docket No. 07-AFC-5 of the Conditions of Certification described as “Worker Safety -7”) imposed by the California Energy Commission in its Final Commission Decision on the Ivanpah Solar Electric Generating System, Docket No. 07-AFC-5 of the Conditions of Certification described as “Worker Safety - 7” and “Worker Safety – 8,” copies of which are attached hereto as Exhibit “D.”

### **OPERATIVE PROVISIONS**

**NOW, THEREFORE,** in consideration of the mutual covenants and conditions contained herein, the Parties agree as follows:

1. **Recitals Incorporated.** The foregoing Recitals are incorporated herein by reference.

2. **Fair-Share Contributions.**

(a) **Annual Operations and Maintenance Costs.** OWNERS shall pay their percentage share of 32% in the case of Solar Partners II, LLC and 34% in the case of each of Solar Partners I, LLC and Solar Partners VIII, LLC of a fair-share contribution in the amount of \$377,000 (three hundred and seventy-seven thousand dollars) per annum to fully mitigate any and all operations and maintenance costs in connection with any need to provide fire protection and emergency response services to the Projects (“O&M Fair-Share Contribution”), payable annually, in arrears, commencing on the later of July 1, 2011, or the first day of the quarter

following the quarter in which any of the Projects commences commercial operations, and ending on the Termination Date, and prorated for partial years. The O&M Fair-Share Contribution shall be adjusted annually for each fiscal year (July 1 to June 30) in accordance with the United States Department of Labor Bureau of Labor Statistics Employment Cost Index for Total Compensation (Not Seasonally Adjusted) for Private Industry Workers for the Los Angeles-Long Beach-Riverside, California Census Region and Metropolitan Area ("ECI"). By way of illustration only, if the ECI for the fiscal year July 1, 2011 to June 30, 2012 shows a five percent (5%) increase, the O&M Fair-Share Contribution for the period July 1, 2012 to June 30, 2013, shall be increased by five percent (5%).

(b) **Capital Costs.** OWNERS shall pay their percentage share of 32% in the case of Solar Partners II, LLC and 34% in the case of each of Solar Partners I, LLC and Solar Partners VIII, LLC of a one-time fair-share capital contribution in the amount of \$409,000 (four hundred and nine thousand dollars) to fully mitigate the capital impact of any and all need to provide fire protection and emergency response services to the Projects ("Capital Costs") in two equal installments, the first on or before December 31, 2011 and the second on or before December 31, 2012.

(c) **Methods of Payment.** OWNERS shall pay the O&M Fair-Share Contribution and Capital Costs to SBCFPD in immediately available funds wired to the following segregated account: Bank of America Account: 1496150090 Reference: FNZ 590 IVAN

### **3. Refunds and Offsets**

(a) **Revisions to Fiscal Impact Analysis.** SBCFPD and the County agree, to the extent not prohibited by law and the County Code, (1) to recalculate, in accordance with the methodology of the Fiscal Impact Analysis, and to charge and collect, fair-share mitigation fees, both capital and operating costs, for any new development located within the SBCFPD service territory in which the Projects are located. If such recalculations and offsets referenced in the prior sentence result in a reduction of the amount of the O&M Fair-Share Contribution and/or Capital Costs attributable to the Projects, County and SBCFPD shall, within thirty (30) days after (A) any of (i) entering into an agreement with the owners of the new development, (ii) the County's issuance of a Conditional Use Permit or (iii) action by the California Energy Commission requiring fair-share contributions of the type that are the subject of this Agreement,

give notice to OWNERS of such reduction and any refund or credit due. OWNER shall within thirty (30) days of such notice elect by notice to SBCFPD and the County to take any such refund or credit, as applicable, as either a cash reimbursement of any Capital Costs or as a credit against future O&M Fair-Share Contributions. All future O&M Fair-Share Contributions shall be reduced in accordance with the revised Fiscal Impact Analysis to the extent that new development projects are required to make fair-share contributions. The County's obligations under this Paragraph 3 shall continue until the date (the "Reimbursement Termination Date") which is the sooner of: (i) the Termination Date; or (ii) the date on which the County and/or SBCFPD have refunded or credited to OWNERS' mitigation fees under this subsection 3(a) equal to all amounts payable by OWNERS under Paragraph 2 during the term of this Agreement.

(b) **Credit for Certain Sales/Use Tax Payments.** In addition to any refunds or offsets determined under subsections 3(a) and 3(c), SBCFPD and San Bernardino County agree to offset against up to fifty percent (50%) of the Capital Cost, on a dollar for dollar basis, any sales/use tax generated from the Projects sourced to San Bernardino County pursuant to the Bradley-Burns Uniform Local Sales and Use Tax Law, or similar legislation.

(c) **Credit for Certain Property Tax Payments** In addition to any refunds or offsets determined under subsection 3(a) or 3(b), up to sixty percent (60%) of the O&M Fair-Share Contribution, (recalculated as required), shall be offset, on a dollar for dollar basis, by any property and/or possessory interest tax revenue from the Projects. Tax revenue shall be calculated as an appropriate percentage of property and/or possessory tax payments made on Assessor Parcel Numbers ("APNs") for the Projects (current list of APNs attached hereto as Exhibit "F"). Tax payments shall be evidenced by payment amounts for such APNs as set forth on the County Tax Collector's website (<http://www.mytaxcollector.com/trSearch.aspx>, as it may be amended). Tax payments shall not include any amounts paid for penalties or interest. In the event any property tax refunds are issued for such APNs, the amount of property tax payments used to calculate tax revenue shall be reduced by the amount of the refund(s).

(d) **Provision of Fire Protection and Emergency Response Services.** Subject to the service constraints imposed by the current and developing status of fire and emergency service infrastructure, SBCFPD shall provide to the Project the level of fire protection and emergency response services that SBCFPD customarily provides to similar developments in the Project's service area and other service areas.

4. **Additional Conditions.** OWNERS shall develop the Projects in accordance with the terms of Fire Prevention Plan and Emergency Preparedness Plan, attached hereto as Exhibit "B."

5. **Term.** This Agreement shall be effective from the Effective Date, and shall continue in full force and effect until the Projects are abandoned or cease operations ("Termination Date").

6. **OWNERS' Right to Assign/Release.**

(a) **Permitted Assignees.** Upon at least ten (10) business days' advance written notice to County and SBCFPD, any OWNER may assign, pledge or transfer, in whole or part, all or part of its existing and prospective rights and obligations under this Agreement to any of the following entities (each, a "Permitted Assignee"): (i) any of its affiliates (defined as any person or party controlled by, that controls or is under common control with, OWNER; ("control" with respect to any person or party shall mean the ability to effectively control, directly or indirectly, the operations and business decisions of such person or party, whether by voting of securities or partnership interest or any other method); or (ii) in connection with any debt incurred or equity financing obtained for the Projects. County and SBCFPD agree, at any assigning OWNER's expense, to enter into such direct agreements and other documents as may reasonably be required or requested by such OWNER in connection with such assignment, pledge or transfer. The aforementioned notice shall contain the identity of the Permitted Assignee and, subject to the Permitted Assignee's reasonable confidentiality requirements, reasonable evidence of the Permitted Assignee's proof of financial capability.

(b) **Consented Assignees.** In addition, any OWNER may assign all or part of its rights and obligations under this Agreement to a person or entity other than a Permitted Assignee ("Consented Assignee"), provided that such OWNER obtains the prior written consent of the County and SBCFPD, which consent shall not be unreasonably withheld, conditioned or delayed. The County and SBCFPD acknowledge and agree that the obligations and rights to reimbursement may be separately assigned and/or retained by OWNERS.

(c) **Release.** Upon the delivery to COUNTY and SBCFPD of an executed assignment and assumption agreement between any OWNER and either a Permitted Assignee or Consented Assignee, under which any OWNER assigns and such assignee assumes, all or part of

such OWNER's existing and prospective rights and obligations under this Agreement, such OWNER shall be released from all responsibility and liability under this Agreement with respect to such assigned and assumed rights and obligations.

7. **Full Satisfaction.** SBCFPD and the County agree that, in consideration of the timely payment of the O&M Fair-Share Contribution and Capital Costs pursuant to Paragraph 2, SBCFPD and the COUNTY, individually or jointly, shall not at any time bring:

(a) any claims against any of the OWNERS regarding payment for fire protection and emergency response services, or any associated inspections or periodic training the COUNTY or SBCFPD may deem necessary, or,

(b) any challenges or claims in connection with the California Energy Commission certification or licensing of the Projects or the Bureau of Land Management issuance of any right of way for the Projects; or,

(c) any claim for any other development impact fees of any kind arising from the COUNTY's constitutional police power to protect the public health, safety and welfare pursuant to the California Constitution Article XI, §7 (as it may be amended).

8. **Governing Law.** This Agreement and the rights and duties of the Parties hereunder shall be governed by and construed, enforced and performed in accordance with the laws of the state of California, without regard to principles of conflicts of law.

9. **Counterparts.** This Agreement may be executed in one or more counterparts each of which shall be deemed an original and all of which shall be deemed one and the same Agreement.

10. **Interest on late payments.** If any Party fails to make a payment within thirty (30) days of the date on which such payment was due, interest shall accrue on such outstanding amount at a rate of four (4) percent per annum.

11. **Notices.** All notices, requests, demands, and other communications required under this Agreement shall be in writing, in English, and shall be deemed to have been duly given if delivered (i) personally, (ii) by facsimile transmission with written confirmation of receipt, (iii) by overnight delivery with a reputable national overnight delivery service, or (iv) by mail or by certified mail, return receipt requested, and postage prepaid. If any notice is mailed, it shall be deemed given five business days after the date such notice is deposited in the United

States mail. Delivery shall not be deemed given by electronic mail. Any notice given by carrier method other than United States mail shall be deemed given upon the actual date of such delivery. If notice is given to a Party, it shall be given at the address for such Party set forth below. It shall be the responsibility of the Parties to notify each other Party in writing of any name or address changes.

If to Solar Partners II, LLC:  
1999 Harrison Street, Suite 2150  
Oakland, CA 94612  
Attention: Chief Financial Officer  
Telephone: (510) 550-8151  
Facsimile: (510) 550-8165

If to Solar Partners I, LLC:  
1999 Harrison Street, Suite 2150  
Oakland, CA 94612  
Attention: Chief Financial Officer  
Telephone: (510) 550-8151  
Facsimile: (510) 550-8165

If to Solar Partners VIII, LLC:  
1999 Harrison Street, Suite 2150  
Oakland, CA 94612  
Attention: Chief Financial Officer  
Telephone: (510) 550-8151  
Facsimile: (510) 550-8165

If to COUNTY:  
County of San Bernardino  
385 North Arrowhead Ave., Fifth Floor  
Attention: Chief Executive Officer  
Telephone: (909) 387-5417  
Facsimile: (909) 387-5430

If to SBCFPD:  
157 West 5<sup>th</sup> Street, 2<sup>nd</sup> Floor  
San Bernardino, CA 92415-0451  
Attention: Fire Chief  
Telephone: (909) 387-5948  
Facsimile: (909) 387-5542

**IN WITNESS WHEREOF**, the Parties hereto have executed this Agreement as of the day and year first written above.

**[Signature Page Follows]**

**COUNTY OF SAN BERNARDINO**

**SAN BERNARDINO COUNTY FIRE PROTECTION DISTRICT**

▶ \_\_\_\_\_  
Gary C. Ovitt, Chairman  
Board of Supervisors

▶ \_\_\_\_\_  
Gary C. Ovitt, Chairman  
Board of Directors

Dated: \_\_\_\_\_

Dated: \_\_\_\_\_

SIGNED AND CERTIFIED THAT A COPY OF THIS DOCUMENT HAS BEEN DELIVERED TO THE CHAIRMAN OF THE BOARD  
Laura H. Welch, Clerk of the Board of Supervisors  
Of the County of San Bernardino

SIGNED AND CERTIFIED THAT A COPY OF THIS DOCUMENT HAS BEEN DELIVERED TO THE CHAIRMAN OF THE BOARD  
Laura H. Welch, Secretary

By: \_\_\_\_\_  
*Deputy*

By: \_\_\_\_\_  
*Deputy*

**OWNERS:**

SOLAR PARTNERS I, LLC,  
By: BrightSource Energy, Inc., as member manager

SOLAR PARTNERS II, LLC,  
By: BrightSource Energy, Inc., as member manager

By: ▶ \_\_\_\_\_  
*Authorized Signature – sign in blue ink*

By: ▶ \_\_\_\_\_  
*Authorized Signature – sign in blue ink*

Name: \_\_\_\_\_  
*Print or type name of person signing contract*

Name: \_\_\_\_\_  
*Print or type name of person signing contract*

Title: \_\_\_\_\_  
*Print or Type*

Title: \_\_\_\_\_  
*Print or Type*

Dated: \_\_\_\_\_


Dated: \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_



SOLAR PARTNERS VIII, LLC,  
By: BrightSource Energy, Inc., as member manager




By:  \_\_\_\_\_  
*Authorized Signature – sign in blue ink Name*

Name: \_\_\_\_\_  
*Print or type name of person signing contract*

Title: \_\_\_\_\_  
*Print or Type*

Dated: \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_

<i>Approved as to Legal Form</i>	<i>Reviewed by Contract Compliance</i>	<i>Presented to Board for Signature</i>
 _____ <i>Counsel</i>  <i>Date</i> _____	 _____  <i>Date</i> _____	 _____  <i>Date</i> _____

**RESOLUTION NO. 2010-144**

**RESOLUTION REGARDING MITIGATION FOR IMPACTS TO HISTORIC AND RECOGNIZED  
LAND USES FROM RENEWABLE ENERGY DEVELOPMENT PROJECTS OCCURRING ON  
FEDERAL LANDS**

On Tuesday July 13, 2010, on motion of Supervisor Derry, duly seconded by Supervisor Mitzelfelt and carried, the following resolution is adopted by the Board of Supervisors of San Bernardino County, State of California.

WHEREAS, the County of San Bernardino supports the development of renewable energy; and

WHEREAS, the development of renewable energy will create much-needed jobs, expand the supply of clean energy to meet the needs of economic growth and population growth, and is critical for the state to meet its renewable energy goals; and

WHEREAS, the development of large scale renewable energy projects on public lands has unavoidable environmental impacts which are required to be mitigated; and

WHEREAS, wildlife impacts are mitigated by a variety of measures, including acquisition of private land and transfer to agencies; and cultural resources are mitigated by measures including avoidance or salvage; and

WHEREAS, other multiple use values generally receive only mention in the environmental documentation, but are seldom offset, replaced or otherwise mitigated; and

WHEREAS, many public use areas and activities are at risk as the agencies, both State and Federal, seek to fast track projects, and view wildlife mitigation as the primary focus of concern; and

WHEREAS, large scale solar energy projects remove huge areas of relatively flat and accessible land which has historically been essential parts of grazing allotments, contained the access routes to back country, or provided areas that the Bureau of Land Management (BLM) designated as "open" for off-highway vehicle (OHV) play; and

WHEREAS, when large scale solar projects are sited in such areas, the area may become totally removed from multiple use activities, access may be cut off, and the previously permitted uses may cease, and

WHEREAS, some historic uses on public lands, such as grazing, can be mitigated through compensation or buy-out, though the effect will be a reduction from past use. There may be offsetting economic value from the energy project, but it is essential that benefits and losses both be weighed in the National Environmental Protection Act (NEPA) process; and

WHEREAS, the issue is particularly acute relative to dispersed recreation use such as off-highway vehicle use; and

WHEREAS, failure to provide at least a degree of mitigation results in the sprawling of dispersed uses on to areas where they do not belong, or to areas of private land, encouraging trespass. Such creation by users will require engagement of law enforcement at high cost to both the land management agencies as well as local government; and

WHEREAS, providing such mitigation may have an overall positive impact since the area will have the benefit of the new use plus retention of all or part of the current use; and

WHEREAS, providing such mitigation will also reduce the effect on local law enforcement to patrol and control random use as the public seeks its own alternatives for use areas.

NOW THEREFORE BE IT RESOLVED, that it is the position of the County of San Bernardino that the California Energy Commission, the U.S. Bureau of Land Management, the U.S. Forest Service, and any state or federal agency that may have jurisdiction or input into renewable energy projects, shall, during project development and impact assessment, address such issues, and directly provide alternate access routes, even if such provision requires new construction to avoid the project area.

BE IT FURTHER RESOLVED that OHV open areas, if such areas have been legitimately provided for in BLM or Forest Service land use plans, should be similarly mitigated for, by designation of other appropriate areas or the acquisition of areas by the developer for such dedication and designation.

PASSED AND ADOPTED by the Board of Supervisors of the County of San Bernardino, State of California, by the following vote:

AYES: SUPERVISORS: Mitzelfelt, Biane, Derry, Gonzales

NOES: SUPERVISORS: None

ABSENT: SUPERVISORS: Ovitt

\*\*\*\*\*

STATE OF CALIFORNIA            )  
  )        ss.  
COUNTY OF SAN BERNARDINO    )

I, **LAURA H. WELCH**, Clerk of the Board of Supervisors of the County of San Bernardino, State of California, hereby certify the foregoing to be a full, true and correct copy of the record of the action taken by the Board of Supervisors, by vote of the members present, as the same appears in the Official Minutes of said Board at its meeting of July 13, 2010. Item #29, ml.

**LAURA H. WELCH**  
Clerk of the Board of Supervisors

By \_\_\_\_\_  
Deputy

**RESOLUTION NO. 2010-145**

**RESOLUTION REGARDING ACQUISITION OF PRIVATE LANDS FOR WILDLIFE MITIGATION,  
WITH SUBSEQUENT TRANSFER TO FEDERAL OR STATE AGENCIES AND/OR MANAGEMENT  
BY NON-GOVERNMENTAL ORGANIZATIONS**

On Tuesday July 13, 2010, on motion of Supervisor Derry, duly seconded by Supervisor Mitzelfelt and carried, the following resolution is adopted by the Board of Supervisors of San Bernardino County, State of California.

WHEREAS, The County of San Bernardino supports the development of renewable energy;  
and

WHEREAS, the development of renewable energy will create much-needed jobs, expand the supply of clean energy to meet the needs of economic growth and population growth, and is critical for the state to meet its renewable energy goals; and

WHEREAS, the development of large scale renewable energy projects on public lands has unavoidable environmental impacts which are required to be mitigated; and

WHEREAS, large scale renewable energy projects on public land require large tracts of land, including habitat of threatened and endangered species, which must be mitigated; and

WHEREAS, wildlife agencies (State and Federal) have historically required the purchase of private land and its transfer to government agencies or non-governmental organizations (NGOs) as mitigation and "compensation" for projects that will occupy or impact species with status under Federal or State law or regulation; and

WHEREAS, such acquisitions remove private land from tax rolls and from potential future development, and, when the land becomes Federal, many counties not only lose the property tax revenue, they fall outside the limit of Payment in Lieu of Taxes (PILT) accounting; and

WHEREAS, more than 80 percent of the land in San Bernardino County is in federal ownership, and there is limited private land available for habitat mitigation, and if that land were used for mitigation it would irreparably harm the County in terms of property tax revenue and future economic growth; and

WHEREAS, large renewable energy development projects have highlighted the situation, made worse by some states, including California, providing tax exemption for renewable energy projects; and

WHEREAS, many projects are located in counties, including San Bernardino County, in which PILT payments are capped because of already large Federal estates; thus such transfers that add to the Federal estate do not receive PILT payment reflecting the expanded Federal holding. Further, since the acquiring agencies are usually the U.S. Bureau of Land Management (BLM) or the U.S. Forest Service, counties cannot receive PILT under 31 U.S.C. Chapter 69, Sections 6904 or 6905; and

WHEREAS, some state wildlife agencies, including the California Department of Fish and Game, dictate compensation requirements, and donations are made to either the state or an NGO, and thus are outside the realm of PILT. However, most renewable energy projects have a Federal nexus, and thus Federal decision-making can affect the final mitigation package; and

WHEREAS, most projects utilize significant parts of local government infrastructure, including the use of county roads for project development, operation and maintenance. In addition a variety of other county services, including solid waste disposal, law enforcement, public health, and fire and emergency medical response may all come into play during the life of any project; and

WHEREAS, it is possible that revenue derived from renewable energy projects will not cover the cost of public services, and will not match the revenue lost from property tax and from future economic development.

NOW THEREFORE BE IT RESOLVED, that the San Bernardino County Board of Supervisors calls on state and federal resource and regulatory agencies with authority over renewable energy projects to adopt one or more of the following policies to minimize and mitigate impacts to local government from the loss of taxable and developable land and from the loss of revenue from such land:

- That such mitigation compensation be determined by an agreed upon land value (for undeveloped wild land in the region), and then determined in total. Such compensation would be a one-time payment by the developer, and such payment would then be distributed among agencies for a variety of conservation works associated with the species and habitat for which mitigation is being sought. (The California Energy Commission recent Memorandum of Understanding with the National Fish and Wildlife Foundation could be model. This model has some shortcomings, however, in that it leaves land acquisition as a covered conservation activity, and excludes local government from decision-making.)
- That the project proponent transfer the land to the public agency or designated NGO, and the recipient, or successors in interest, would continue to pay property taxes, or an equivalent fee in lieu of taxes, in perpetuity, as though the land had not been transferred from private ownership. (In other words, such mitigation land would be treated as though it continued on the tax rolls, and would be taxed according to the rate in effect for each year going forward. This would provide revenue flow to local government regardless of receiving administrator.)
- That if compensation and the land transfer is to BLM or Forest Service, that the PILT formula be changed to provide for PILT payment each year to jurisdictions for the acreage transferred, regardless of caps imposed by population ceiling, or limitations in current law allowing only such payments (Section 6904 and 6905) to National Park Service and National Forest wilderness. The County further recommends if this alternative were adopted, the 5-year limit on such payments be removed.

PASSED AND ADOPTED by the Board of Supervisors of the County of San Bernardino, State of California, by the following vote:

AYES: SUPERVISORS: Mitzelfelt, Biane, Derry, Gonzales

NOES: SUPERVISORS: None

ABSENT: SUPERVISORS: Ovitt

\*\*\*\*\*

STATE OF CALIFORNIA )  
 )  
COUNTY OF SAN BERNARDINO ) ss.

I, **LAURA H. WELCH**, Clerk of the Board of Supervisors of the County of San Bernardino, State of California, hereby certify the foregoing to be a full, true and correct copy of the record of the action taken by the Board of Supervisors, by vote of the members present, as the same appears in the Official Minutes of said Board at its meeting of July 13, 2010. Item 29, ml.

**LAURA H. WELCH**  
Clerk of the Board of Supervisors

By \_\_\_\_\_  
Deputy

## Attachment D

### NACO Resolutions

#### **Resolution Regarding Mitigation for Impacts to Historic and Recognized Land Uses from Renewable Energy Development Projects Occurring on Federal Lands**

**Issue:** Renewable energy projects, particularly large scale solar development, remove large blocks of land from the federal estate from historic multiple use activities, including dispersed recreation, livestock grazing, and general public access.

**Adopted Policy:** NACo requests the Bureau of Land Management and Forest Service adopt policies that provide real and substantial consideration of historic uses in the project plans and environmental documentation, and commit project developers to providing mitigation for their loss.

**Background:** As renewable energy development expands, the potential exclusion of historic permitted uses on Federal public lands becomes more apparent. Some projects may be benign, such as wind energy on ridge lines. Other developments such as solar on flat accessible land, remove huge areas which have historically been essential parts of grazing allotments, contained the access routes to back country, or provided areas that BLM designated as "open" for OHV recreation. Ancillary facilities and safety closures, however, for all projects, may remove areas and access from previous uses.

Some uses, such as grazing, can be mitigated through compensation or buy-out, though the effect will be a reduction from past use. There may be offsetting economic value from the energy project, but it is essential that benefits and losses both be weighed in the NEPA process and the process commit the developer to providing such mitigation.

Access through project areas cannot be addressed by the market. Development plans must provide alternate access routes. OHV open areas, if such has been legitimately provided in BLM or FS land use plans, should be similarly mitigated for, by designation of other appropriate areas or the acquisition of areas by the developer for such dedication and designation.

Failure to provide at least a degree of mitigation can result in sprawling of dispersed uses to areas of private land, encouraging trespass, and requiring engagement of law enforcement at high cost to both the land management agencies as well as local government.

NACo does not oppose development of renewable energy on public land, but wishes to assure that the NEPA process and plan of development explicitly address historic use and commit the developer to mitigation.

**Fiscal Urban/Rural Impact:** Renewable energy development may or may not have positive impacts on the land and the area. Projects normally result in total exclusion of the public, but their output will provide energy, employment, and increase renewable portfolios required by many states. Mitigation for impacts and use loss may add to project costs. Providing such mitigation may have an overall positive impact since the area may benefit from the new use plus retain of all or part of the current use. Providing such mitigation will also reduce the effect on local law enforcement to control trespass use that could occur if mitigation is not provided.

Adopted July 20, 2010



**Resolution on Acquisition of Private Land for Wildlife Mitigation, Associated with Renewable Energy Development, with Subsequent Transfer to Federal Agencies**

**Issue:** Wildlife agencies (State and Federal) have required the purchase of private land and its transfer to government agencies or non-governmental organizations (NGOs) as mitigation for projects that will occupy habitat or impact species with status under Federal or State law or regulation. Such acquisitions remove private land from tax rolls. When the land becomes Federal, many counties not only lose the property tax revenue, they fall outside the limit of Payment in Lieu of Taxes (PILT) accounting. Large renewable energy development projects have exacerbated the situation.

**Adopted Policy:** NACo requests the land and wildlife management agencies adopt procedures that provide for project mitigation other than through land transfer from private to public ownership. When such transfers are deemed the only appropriate mitigation, and offsetting PILT will not occur, then agencies must provide that project developer would continue to pay the property tax on the transferred land, or fees in lieu of taxes, in perpetuity, unless the land were restored to private ownership at a future date.

**Background:** The land and wildlife management agencies have sought land mitigation for impacted habitat for a variety of species, mostly those with listed status under the Endangered Species Act. Such mitigation often is required at a multiplied factor, e.g. 3:1, in which the project developer must “donate” a multiple of private land to the permitting agency or designated entity as mitigation. Such land is removed from the tax rolls.

Many projects are located in counties in which PILT payments are capped because of already large Federal estates; thus transfers may add to the Federal estate and counties do not receive additional PILT payment reflecting the expanded Federal estate. Further, since the acquiring agencies are usually BLM or the Forest Service, counties cannot receive PILT under Sections 6904 or 6905.

Most projects utilize significant parts of local government infrastructure, including the use of county roads for project development, operation and maintenance. In addition development may use other county services, including solid waste disposal, law enforcement, public health, and fire and emergency medical response during the life of the project.

Offsetting the loss of tax base must become an essential part of renewable project mitigation, even when mitigation land is transferred to a state agency or NGO. Mitigation should be accomplished by project developers depositing funds for use to provide other kinds of mitigation investment equivalent to the amount that might otherwise be invested in land acquisition.

Expand current PILT requirement that only additions to the Federal estate by NPS or in National Forest wilderness can receive payment under Section 6904. If such change were made, remove the 5-year limit on such payments.

**Fiscal Urban/Rural Impact:** While development may provide some positives to local economies, local governments should not be left with losses and costs associated with the project. The policy will assure a steady revenue stream regardless of mitigation requirements as well as funding for county infrastructure and services.

Adopted July 20, 2010

Karen Lowery  
6021 S. Hopdown Lane  
Tucson, Arizona 85746  
[hiker1724@yahoo.com](mailto:hiker1724@yahoo.com)

April 11, 2011

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

To Whom It May Concern:

I am a hiker/backpacker who enjoys the national forest, wilderness and conservation areas for their diversified wildlife (fauna and flora) and the quiet. I am also a biologist and teacher who is keenly aware of the importance of maintaining healthy and diversified forest and wild lands which provide us with portable water; a means of keeping good air quality; and a peaceful place with biodiversity to allow our spirit or soul to soar.

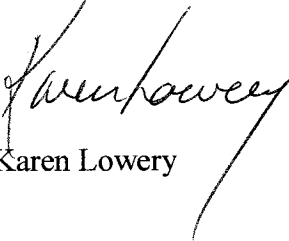
**I have concerns regarding the BLM's choice of the SDP alternative as the "preferred alternative" for Solar Energy development on Public Lands. It should not be the chosen alternative.** The SDP alternative will jeopardize wildlife and wildlands, including key habitat and migration corridors in the Sky Island region, leading to unacceptable environmental impacts, and costly conflicts and delays. This alternative includes many places that should be protected for wildlife habitat and clean air and water, including proposed wilderness areas, important wildlife habitat, and hunting and fishing spots. Such areas that would be included are in the Pima County's Conservation Lands System, which includes over 57,000 acres of identified Important Riparian Areas; over 85,000 acres of identified as Biological Core Management Areas; and over 1.4 million acres identified as Multiple Use Management Areas; as well as the San Pedro National Conservation Area. These areas and more would be put at risk and degraded by proposed solar energy projects.

**I am in support of the SEZ alternative because it requires that solar projects be built in low conflict areas based on their excellent solar resources, flat lands, proximity to existing roads and electrical transmission lines and limited conflicts with important wildlife habitat, wildlands recreation area and other resources and values.** Focusing solar development in these areas would have the best chances for successful projects with minimal or zero conflicts and leading to solar development that is faster, cheaper and better for the environment, consumers and project developers. The proposed solar energy zones that the BLM has already identified includes more that three

times as much land as the BLM forecasts will be developed during the 20 year life of the PEIS, allowing plenty of flexibility and room for solar to grow responsibly over the next five years.

I firmly believe that it is critical that the common sense **SEZ alternative should be selected**, which efficiently guides projects to the most appropriate locations.

Sincerely,

A handwritten signature in cursive script that reads "Karen Lowery". The signature is written in black ink and is positioned to the right of the typed name.

Karen Lowery

TO: SOLAR ENERGY PEIS

ARGONNE NATIONAL LABORATORY

9700 S. CASS AVENUE

EU5/240

ARGONNE, IL 60439

RE: SOLAR ENERGY DRAFT PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT

THERE ARE FUNDAMENTAL FLAWS WITH THE DPEIS. THEY ARE AS FOLLOWS:

1. LARGE-SCALE CENTRALIZED RENEWABLE ENERGY GENERATION ON PUBLIC LANDS IS AN AGENCY CHOICE, NOT A FEDERAL MANDATE. THE ENERGY ACT OF 2005 DOES NOT ORDER THE ADMINISTRATION TO SITE RENEWABLE ENERGY FACILITIES ON PUBLIC LANDS, AND THE ADMINISTRATION IS WRONG TO USE THE ACT AS COVER.
2. THE DPEIS PROMOTES AN OUTDATED, TOP-DOWN APPROACH TO ENERGY PRODUCTION THAT IS FINANCIALLY WASTEFUL AND ENVIRONMENTALLY IRRESPONSIBLE, AND OUT OF TOUCH WITH CURRENT MARKET AND TECHNOLOGY TRENDS.
3. THE DPEIS PROMOTES MASSIVE SUBSIDIES TO THE SAME IRRESPONSIBLE CORPORATIONS THAT PROFITED FROM OIL AND GAS DEVELOPMENT ON PUBLIC LANDS AND WATERS (E.G., BP AND CHEVRON) AND CONTRIBUTED TO THE FINANCIAL MELTDOWN (E.G., MORGAN STANLEY AND GOLDMAN SACHS).
4. THE DPEIS PUTS INDUSTRY INTERESTS ABOVE THE PUBLIC GOOD AND FAILS TO ADEQUATELY CONSIDER MORE COST-EFFECTIVE AND ENVIRONMENTALLY RESPONSIBLE APPROACHES TO RENEWABLE ENERGY DEVELOPMENT.

THE IMPACTS OF THE DPEIS ARE AS FOLLOWS:

1. THE DPEIS PROMOTES HUNDREDS OF SQUARE MILES OF INDUSTRIALIZATION WITH LONG-TERM, IRREVERSIBLE, CUMULATIVE ECOLOGICAL IMPACTS TO FRAGILE ~~DESERT~~ DESERTS AND GRASS LANDS.
2. PROPOSED MITIGATION MEASURES ARE INADEQUATE TO ADDRESS UNRESOLVED, ~~DEFERRED~~ DEFERRED, AND POORLY UNDERSTOOD IMPACTS FROM LARGE-SCALE SOLAR DEVELOPMENT.
3. IMPACTS WILL AFFECT UP TO 100% OF EACH SITE AND ENDURE FOR DECADES OR EVEN CENTURIES WITH LITTLE PROSPECT FOR RESTORATION.

4. ASSESSMENT OF VISUAL, ECONOMIC, AND ENVIRONMENTAL IMPACTS IS INADEQUATE IN ALL THREE PROPOSED ALTERNATIVES.
5. THE DPEIS FAILS TO ASSESS IMPACTS FROM TRANSMISSION LINE UPGRADES THAT WILL BE REQUIRED BY THE PROJECTS.
6. THE DPEIS CANNOT ENSURE PROTECTION AND ENHANCEMENT OF THE NATION'S WATER, WILDLIFE, AND OTHER NATURAL RESOURCES UNDER ANY OF THE PEIS ALTERNATIVES.
7. THE DPEIS PROVIDES NO SCIENTIFIC EVIDENCE THAT LARGE-SCALE SOLAR WILL REDUCE NET GREENHOUSE GAS EMISSIONS ONCE CONSTRUCTION, TRANSMISSION, AND THE DISRUPTION OF CARBON-SEQUESTERING ECOSYSTEMS ARE TAKEN INTO ACCOUNT.
8. BUM PLANNING AND DOCUMENTS NEVER CONTEMPLATED THIS SCALE OF DEVELOPMENT AND HAVE NO RELEVANT GUIDELINES THAT LIMIT ACCEPTABLE CHANGE.

#### REGARDING ALTERNATIVES

1. THE DPEIS FAILS TO CONSIDER SOUND ALTERNATIVES INCLUDING CONSERVATION, DISTRIBUTED GENERATION, AND SOLAR DEVELOPMENT IN THE BUILT ENVIRONMENT.
2. THE DPEIS MUST INCLUDE A "DISTURBED LANDS" ALTERNATIVE. LARGE-SCALE CENTRALIZED SOLAR PLANTS MUST ONLY BE BUILT ON THE MILLIONS OF ACRES OF ABANDONED MINE LANDS, BROWNFIELDS, AND FEDERAL AND NON-FEDERAL SUPERFUND SITES IDENTIFIED BY EPA AND OTHERS AS SUITABLE FOR SOLAR AND OTHER NON-FOSSIL-FUEL ENERGY PROJECTS.
3. THE DPEIS MUST INCLUDE A "DISTRIBUTED PV" ALTERNATIVE THAT DIRECTS SOLAR DEVELOPMENT TO THE BUILT ENVIRONMENT. WHEN ALL COSTS ARE FACTORED IN - INCLUDING NEW TRANSMISSION INFRASTRUCTURE AND TRANSMISSION LINE LOSSES - LOCAL, DISTRIBUTED SOLAR PV IS COMPARABLE TO IN EFFICIENCY, FASTER TO BRING ONLINE, AND MORE COST-EFFECTIVE THAN REMOTE UTILITY-SCALE SOLAR PLANTS.

I AM OPPOSED TO SOLAR PLANT DEVELOPMENT ON PUBLIC LANDS.

DEBORAH FILIPPELLI, Ph.D.  
 P.O. BOX 341  
 THE SEA RANCH, CA 95497

APRIL 10, 2011

MARK ORR  
POBox 87  
(36714 Hidden River Rd.)  
Hinkley, CA. 92347  
760-253-5304

ATTN: United States Dept. of Interior Bureau of Land Management,  
and United States Department of Energy.  
Solar Energy Draft PEIS, Argonne National Laboratory,  
9700 S. Cass Avenue-EVS/240, Argonne, Illinois 60439.

REGARDING: Draft Programmatic Environmental Impact Statement for  
Solar Energy Development in Six Southwestern States.  
DES 10-59. DOE/EIS-0403.

The Draft Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States (DES 10-59. DOE/EIS-0403.) is a venture into the unknown, since few of these massive solar projects exist in the Southwest, and those existing are located great distances apart. The true impacts have no real comparison, so I insist all comments, recommendations, request, and concerns be regarded carefully.

I am concerned about the impact on lands, both adjacent and regional, surrounding planned project sites, due to water accumulation and/or run-off, especially in situations where indigenous vegetation is removed from solar sites. The dual problem of either too much or too little run-off of precipitation could cause adverse erosion and disruption of adjacent surrounding ecosystems, or deny normal flow of water to adjacent surrounding ecosystems in situation where precipitation is captured in resevoir basins or ponds on solar sites. I am also concerned about any salts or industrial chemicals that could escape each solar site and cause possible harmful impacts.

I am concerned of increased particulate problems from solar sites where indigenous ground cover vegetation is removed, and of possible harmful impacts on people and habitations, on peoples quality of life, or upon adjacent or regionally surrounding wildlife and ecosystems due to accumulation of sand and dust particles that could adversely change living conditions. This is especially in regards to any respiratory problems or creation of new surface topographic changes due to sand accumulation and creation of drift or dune activity. I am also concerned of transport of salt or industrial chemicals or matter with these particles, even in regard to eroded matter or chemicals applied to a solar site as a pesticide, plant control, or as an attempt to prevent particle movement.

I am concerned of possible contamination of a solar site and adjacent or surrounding regions ground and/or surface waters. Though solar energy seems clean technology I know that some site operations and design use salts or other chemicals or matter to retain heat that generates steam that powers generators. If these salts, chemicals, or other matter escape they could potentially contaminate ground or surface waters. This is a sensitive issue in many desert regions such as the Great Basin or Mojave Desert where internally draining systems provide no river systems to the ocean that could flush or dilute contaminants. Instead contaminant problems accumulate in increasing toxicity. We in Hinkley Calif. *Know this.*

I am concerned that the use of mirrors or stirling engines on solar sites will potentially decrease the population of pollinating insects or birds, and harmfully impact adjacent and/or surrounding regions ecosystems or crops. The surface of some mirrors can become very hot, and in the case of stirling engines or pistons even confining. I am concerned insects or birds might become attracted or confused by the mirrors, and become trapped or injured. I am especially concerned for effects on hummingbirds, bees, and smaller fly species or larger moth species known to be important cactus and other indigenous plant pollinators. I am also concerned that an increase of mirrored solar sites might confuse migratory birds believing the mirrors are bodies of water, a fatal mistake sometimes in the desert.

I am concerned that some solar sites due to design will consume huge amounts of water for steam power or cleaning of equipment. This could result in adjacent or regional depletion of ground or surface water, the resulting overdraft harmfully impacting people, habitations, institutions, businesses, crops, gardens, domestic animals, and indigenous or migratory wildlife. It could cause a really big quality of life issue.

I am concerned that the removal of indigenous vegetation from solar sites, especially those using mirrors, will cause adverse and possibly harmful changes to weather patterns. It seems to be a popular theory that mirrors and bare ground



will reflect sunlight/solar radiation and reduces the ground from absorbing and retaining heat. This is often presented as a global warming solution. I contend the opposite will result. Mirrors and bare ground will reflect heat that will warm the air above solar sites. This will help heat the atmosphere over the deserts, and this added heat will increase the size and immobility of high pressure cells. Such high pressure will push some low pressure precipitation laden systems away, and even prevent the descent of the jet stream systems providing normal weather patterns. Where I live in the Mojave Desert I have witnessed the heat from solar sites actually raising cloud levels and altering weather in my immediate area. Clouds have actually rapidly risen above the regions of the sites, and sometimes descend rapidly on the other side, even altering the precipitation. So I wonder what dozens of larger mirrored sites will do.

Please , I request BLM and DOE review and answer my questions and concerns. My own recommendation is that we restrict the number of mirrored solar sites, that they not be closely located together, and that the mirrors and stirling engines be installed elevated above existing and predominantly unremoved indigenous vegetation. I would prefer the improvement and increased use of dark solar cell panels avoiding some ecosystem impact or warming of atmosphere problems.

MARK ORR,  
HINKLEY, CA.

Steve Saway  
<stevesaway@gmail  
.com>

Solar\_009

To  
Thomas\_Bickauskas@blm.gov  
02/24/2011 04:55 cc  
PM Tom Bickauskas  
<tbickauskas@hotmail.com>  
Subject  
Solar Energy Zone Impacts on Public  
Access and OHV Recreation

Hi Tom,

I wanted to make you aware of a project that will impact OHV routes along Agua Caliente Road. The Draft Solar Programmatic EIS is proposing some Solar Energy Zones for Arizona BLM lands (more info at: <http://www.blm.gov/az/st/en/prog/energy/solar/peis.html>). The Gillespie Solar Energy Zone, if approved, would be located on the eastern end of Agua Caliente Road. It would close OHV routes along that portion of Agua Caliente Road, including the primary access to Woolsey Peak Wilderness and Signal Peak Wilderness. (Agua Caliente Road is a gateway to some of the finest OHV desert riding I've experienced.) I don't think the Solar PEIS does an adequate job of addressing the impacts on public access and recreation. I'm attaching a paper that discusses some of the impacts from my perspective. I raised this issue at the last BLM RAC meeting and made sure that Bill Gibson was aware of it. There's a public meeting in Phoenix on March 1st where folks can get more information and provide their comments (see: [http://www.blm.gov/wo/st/en/info/newsroom/2011/january/NR\\_01\\_14\\_2011.html](http://www.blm.gov/wo/st/en/info/newsroom/2011/january/NR_01_14_2011.html)).

Anyway, I hope there is still time to prevent further loss of OHV routes and public access in this area. It will be important to mitigate any closures so these routes are still available to the public. I could be wrong, but it just appears to me that one side of BLM is not talking to the OHV and recreation side.

Take care.

Steve

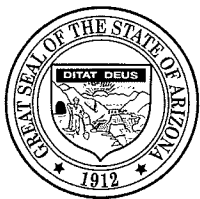
(See attached file: Solar Programmatic Environmental Impact Statement - Comments and Concerns.doc)

## Solar Programmatic Environmental Impact Statement (PEIS)

### Comments and Concerns

#### Gillespie Solar Energy Zone

1. **Public Access, Safety, and Recreation.** The Gillespie Solar Energy Zone (SEZ) is located along and contiguous to Agua Caliente Road, a scenic 49 mile long unpaved county road in western Maricopa County. This road provides access to spectacular BLM lands with high value recreation settings, including Fourth of July Butte, Face Mountain, and the Gila Bend Mountains. Agua Caliente Road is expected to be designated a backcountry highway in the Lower Sonoran RMP that is underway. The BLM lands traversed by Agua Caliente Road offer exceptional opportunities for both motorized and non-motorized recreation, including hiking, hunting, wildlife viewing, camping, backcountry touring, outdoor photography, sightseeing, and rockhounding, and offer stunning views of pristine Sonoran Desert landscapes. In addition, access to the Signal Peak and Woolsey Peak Wilderness areas is via a jeep road that extends south from Agua Caliente Road. The Gillespie SEZ would close access to this OHV route and thus would close the primary access to these wilderness areas. It would also pose safety concerns to travelers on Agua Caliente Road who would have to drive through a gauntlet of solar utility plant equipment with glint and glare impacts. It would seem that solar energy developers would want to avoid placing expensive solar utility equipment so close to a public road, a situation inviting potential damage and liability concerns.
2. **Visual Resource Management .** The Gillespie SEZ would be visible from various National Landscape Conservation System (NLCS) units, including Signal Peak Wilderness, Woolsey Peak Wilderness, and the Sonoran Desert National Monument. The visual impact of solar utility plants and associated disturbed lands is not compatible with NLCS values. Woolsey Peak and Signal Peak Wilderness areas are only 2 and 3.5 miles respectively from the Gillespie SEZ.
3. **Groundwater.** The Gillespie SEZ is located in the Phoenix Active Management Area (AMA). Use of groundwater for solar energy equipment will be very problematic in this AMA.
4. **Air Quality.** The Gillespie SEZ is also located in Maricopa County, much of has been designated by the EPA as a non-attainment area for ozone and PM-10 dust particles. Ground disturbance associated with solar utility plant construction and operations will further exacerbate the County's PM-10 and air pollution impacts.
5. Based on the location and impacts of the Gillespie SEZ, recommend this zone be deleted from further consideration as the PEIS is finalized.



Janice K. Brewer  
Governor

# ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

1110 West Washington Street • Phoenix, Arizona 85007  
(602) 771-2300 • www.azdeq.gov



Henry R. Darwin  
Acting Director

February 11, 2011

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

RE: La Paz, Maricopa and Yavapai Counties: BLM and DOE Programmatic EIS for Solar Energy Zones

Dear Program Coordinator:

The ADEQ Air Quality Division has reviewed your public scoping Solar PEIS web site information regarding the proposed solar development projects in the three Arizona counties, Brenda in La Paz County, Gillespie in Maricopa County and Bullard Wash in Yavapai County. The construction-related emissions are determined to be temporary and unavoidable and of low de minimis impact in the short run. All construction vehicles are low-sulfur fueled with a sulfur content of 15ppm, which has a de minimis impact on air quality. All of the areas in the three counties are:

- ☐ Not in a Nonattainment or Maintenance area

Nevertheless, considering prevailing winds, the size of the construction areas, to comply with other applicable air pollution control requirements and minimize adverse impacts on public health and welfare, the following information is provided for your consideration:

## REDUCE DISTURBANCE of PARTICULATE MATTER during CONSTRUCTION

This action, plan or activity may temporarily increase ambient particulate matter (dust) levels. Particulate matter 10 microns in size and smaller can penetrate the lungs of human beings and animals and is subject to a National Ambient Air Quality Standard (NAAQS) to protect public health and welfare. Particulate matter 2.5 microns in size and smaller is difficult for lungs to expel and has been linked to increases in death rates; heart attacks by disturbing heart rhythms and increasing plaque and clotting; respiratory infections; asthma attacks and cardiopulmonary obstructive disease (COPD) aggravation. It is also subject to a NAAQS.

The following measures are recommended to reduce disturbance of particulate matter, including emissions caused by strong winds as well as machinery and trucks tracking soil off the construction site:

Northern Regional Office  
1801 W. Route 66 • Suite 117 • Flagstaff, AZ 86001  
(928) 779-0313

Southern Regional Office  
400 West Congress Street • Suite 433 • Tucson, AZ 85701  
(520) 628-6733

- I. Site Preparation and Construction
  - A. Minimize land disturbance;
  - B. Suppress dust on traveled paths which are not paved through wetting, use of watering trucks, chemical dust suppressants, or other reasonable precautions to prevent dust entering ambient air
  - C. Cover trucks when hauling soil;
  - D. Minimize soil track-out by washing or cleaning truck wheels before leaving construction site;
  - E. Stabilize the surface of soil piles; and
  - F. Create windbreaks
  
- II. Site Restoration
  - A. Revegetate any disturbed land not used;
  - B. Remove unused material; and
  - C. Remove soil piles via covered trucks.

The following rules applicable to reducing dust during construction, demolition and earth moving activities are enclosed:

- ☒ Arizona Administrative Code R18-2-604 through -607
- ☒ Arizona Administrative Code R18-2-804

Should you have any further questions, please contact me at (602) 771-2375 or David Biddle, of the Planning Section Staff, at (602) 771-2376.

Very truly yours,



Diane L Arnst, Manager  
Air Quality Planning Section

Enclosures

Cc: Bret Parke, EV Administrative Counsel  
David Biddle, Environmental Program Specialist, Air Planning  
File No. 252730

- c. If the burning would occur at a solid waste facility in violation of 40 CFR 258.24 and the Director has not issued a variance under A.R.S. § 49-763.01.
- E. Open outdoor fires of dangerous material. A fire set for the disposal of a dangerous material is allowed by the provisions of this Section, when the material is too dangerous to store and transport, and the Director has issued a permit for the fire. A permit issued under this subsection shall contain all provisions in subsection (D)(3) except for subsections (D)(3)(e) and (D)(3)(f). The Director shall permit fires for the disposal of dangerous materials only when no safe alternative method of disposal exists, and burning the materials does not result in the emission of hazardous or toxic substances either directly or as a product of combustion in amounts that will endanger health or safety.
- F. Open outdoor fires of household waste. An open outdoor fire for the disposal of household waste is allowed by provisions of this Section when permitted in writing by the Director or a delegated authority. A permit issued under this subsection shall contain all provisions in subsection (D)(3) except for subsections (D)(3)(e) and (D)(3)(f). The permittee shall conduct open outdoor fires of household waste in an approved waste burner and shall either:
1. Burn household waste generated on-site on farms or ranches of 40 acres or more where no household waste collection or disposal service is available; or
  2. Burn household waste generated on-site where no household waste collection and disposal service is available and where the nearest other dwelling unit is at least 500 feet away.
- G. Permits issued by a delegated authority. The Director may delegate authority for the issuance of open burning permits to a county, city, town, air pollution control district, or fire district. A delegated authority may not issue a permit for its own open burning activity. The Director shall not delegate authority to issue permits to burn dangerous material under subsection (E). A county, city, town, air pollution control district, or fire district with delegated authority from the Director may assign that authority to one or more private fire protection service providers that perform fire protection services within the county, city, town, air pollution control district, or fire district. A private fire protection provider shall not directly or indirectly condition the issuance of open burning permits on the applicant being a customer. Permits issued under this subsection shall comply with the requirements in subsection (D)(3) and be in a format prescribed by the Director. Each delegated authority shall:
1. Maintain a copy of each permit issued for the previous five years available for inspection by the Director;
  2. For each permit currently issued, have a means of contacting the person authorized by the permit to set an open fire if an order to extinguish open burning is issued; and
  3. Annually submit to the Director by May 15 a record of daily burn activity, excluding household waste burn permits, on a form provided by the Director for the previous calendar year containing the information required in subsections (D)(3)(e) and (D)(3)(f).
- H. The Director shall hold an annual public meeting for interested parties to review operations of the open outdoor fire program and discuss emission reduction techniques.
- I. Nothing in this Section is intended to permit any practice that is a violation of any statute, ordinance, rule, or regulation.

#### Historical Note

Adopted effective May 14, 1979 (Supp. 79-1). Amended effective October 2, 1979 (Supp. 79-5). Correction, subsection (C) repealed effective October 2, 1979, not shown (Supp. 80-1). Former Section R9-3-602 renumbered without change as Section R18-2-602 (Supp. 87-3). Amended effective September 26, 1990 (Supp. 90-3). Former Section R18-2-602 renumbered to R18-2-802, new Section R18-2-602 renumbered from R18-2-401 effective November 15, 1993 (Supp. 93-4). Amended by final rulemaking at 10 A.A.R. 388, effective March 16, 2004 (Supp. 04-1).

#### R18-2-603. Repealed

#### Historical Note

Adopted effective May 14, 1979 (Supp. 79-1). Former Section R9-3-603 renumbered without change as Section R18-2-603 (Supp. 87-3). Amended effective September 26, 1990 (Supp. 90-3). Former Section R18-2-603 renumbered to R18-2-803, new Section R18-2-603 renumbered from R18-2-403 effective November 15, 1993 (Supp. 93-4). Repealed effective October 8, 1996 (Supp. 96-4).

#### R18-2-604. Open Areas, Dry Washes, or Riverbeds

- A. No person shall cause, suffer, allow, or permit a building or its appurtenances, or a building or subdivision site, or a driveway, or a parking area, or a vacant lot or sales lot, or an urban or suburban open area to be constructed, used, altered, repaired, demolished, cleared, or leveled, or the earth to be moved or excavated, without taking reasonable precautions to limit excessive amounts of particulate matter from becoming airborne. Dust and other types of air contaminants shall be kept to a minimum by good modern practices such as using an approved dust suppressant or adhesive soil stabilizer, paving, covering, landscaping, continuous wetting, detouring, barring access, or other acceptable means.
- B. No person shall cause, suffer, allow, or permit a vacant lot, or an urban or suburban open area, to be driven over or used by motor vehicles, trucks, cars, cycles, bikes, or buggies, or by animals such as horses, without taking reasonable precautions to limit excessive amounts of particulates from becoming airborne. Dust shall be kept to a minimum by using an approved dust suppressant, or adhesive soil stabilizer, or by paving, or by barring access to the property, or by other acceptable means.
- C. No person shall operate a motor vehicle for recreational purposes in a dry wash, riverbed or open area in such a way as to cause or contribute to visible dust emissions which then cross property lines into a residential, recreational, institutional, educational, retail sales, hotel or business premises. For purposes of this subsection "motor vehicles" shall include, but not be limited to trucks, cars, cycles, bikes, buggies and 3-wheelers. Any person who violates the provisions of this subsection shall be subject to prosecution under A.R.S. § 49-463.

#### Historical Note

Adopted effective May 14, 1979 (Supp. 79-1). Former Section R9-3-604 renumbered without change as Section R18-2-604 (Supp. 87-3). Amended effective September 26, 1990 (Supp. 90-3). Former Section R18-2-604 renumbered to R18-2-804, new Section R18-2-604 renumbered from R18-2-404 and amended effective November 15, 1993 (Supp. 93-4).



**R18-2-605. Roadways and Streets**

- A. No person shall cause, suffer, allow or permit the use, repair, construction or reconstruction of a roadway or alley without taking reasonable precautions to prevent excessive amounts of particulate matter from becoming airborne. Dust and other particulates shall be kept to a minimum by employing temporary paving, dust suppressants, wetting down, detouring or by other reasonable means.
- B. No person shall cause, suffer, allow or permit transportation of materials likely to give rise to airborne dust without taking reasonable precautions, such as wetting, applying dust suppressants, or covering the load, to prevent particulate matter from becoming airborne. Earth or other material that is deposited by trucking or earth moving equipment shall be removed from paved streets by the person responsible for such deposits.

**Historical Note**

Adopted effective May 14, 1979 (Supp. 79-1). Former Section R9-3-605 renumbered without change as Section R18-2-605 (Supp. 87-3). Amended effective September 26, 1990 (Supp. 90-3). Former Section R18-2-605 renumbered to R18-2-805, new Section R18-2-605 renumbered from R18-2-405 effective November 15, 1993 (Supp. 93-4).

**R18-2-606. Material Handling**

No person shall cause, suffer, allow or permit crushing, screening, handling, transporting or conveying of materials or other operations likely to result in significant amounts of airborne dust without taking reasonable precautions, such as the use of spray bars, wetting agents, dust suppressants; covering the load, and hoods to prevent excessive amounts of particulate matter from becoming airborne.

**Historical Note**

Section R18-2-606 renumbered from R18-2-406 effective November 15, 1993 (Supp. 93-4).

**R18-2-607. Storage Piles**

- A. No person shall cause, suffer, allow, or permit organic or inorganic dust producing material to be stacked, piled, or otherwise stored without taking reasonable precautions such as chemical stabilization, wetting, or covering to prevent excessive amounts of particulate matter from becoming airborne.
- B. Stacking and reclaiming machinery utilized at storage piles shall be operated at all times with a minimum fall of material and in such manner, or with the use of spray bars and wetting agents, as to prevent excessive amounts of particulate matter from becoming airborne.

**Historical Note**

Section R18-2-607 renumbered from R18-2-407 effective November 15, 1993 (Supp. 93-4).

**R18-2-608. Mineral Tailings**

No person shall cause, suffer, allow, or permit construction of mineral tailing piles without taking reasonable precautions to prevent excessive amounts of particulate matter from becoming airborne. Reasonable precautions shall mean wetting, chemical stabilization, revegetation or such other measures as are approved by the Director.

**Historical Note**

Section R18-2-608 renumbered from R18-2-408, new Section R18-2-408 adopted effective November 15, 1993 (Supp. 93-4).

**R18-2-609. Agricultural Practices**

A person shall not cause, suffer, allow, or permit the performance of agricultural practices outside the Phoenix and Yuma planning areas, as defined in 40 CFR 81.303, which is incorporated by reference in R18-2-210, including tilling of land and application of fertilizers without taking reasonable precautions to prevent excessive amounts of particulate matter from becoming airborne.

**Historical Note**

Section R18-2-609 renumbered from R18-2-409 effective November 15, 1993 (Supp. 93-4). Amended by final rulemaking at 6 A.A.R. 2009, effective May 12, 2000 (Supp. 00-2). Amended by final rulemaking at 11 A.A.R. 2210, effective July 18, 2005 (Supp. 05-2).

**R18-2-610. Definitions for R18-2-611**

The definitions in Article 1 of this Chapter and the following definitions apply to R18-2-611:

1. "Access restriction" means restricting or eliminating public access to noncropland with signs or physical obstruction.
2. "Aggregate cover" means gravel, concrete, recycled road base, caliche, or other similar material applied to noncropland.
3. "Artificial wind barrier" means a physical barrier to the wind.
4. "Best management practice" means a technique verified by scientific research, that on a case-by-case basis is practical, economically feasible, and effective in reducing PM<sub>10</sub> emissions from a regulated agricultural activity.
5. "Chemical irrigation" means applying a fertilizer, pesticide, or other agricultural chemical to cropland through an irrigation system.
6. "Combining tractor operations" means performing two or more tillage, cultivation, planting, or harvesting operations with a single tractor or harvester pass.
7. "Commercial farm" means 10 or more contiguous acres of land used for agricultural purposes within the boundary of the Maricopa PM<sub>10</sub> nonattainment area.
8. "Commercial farmer" means an individual, entity, or joint operation in general control of a commercial farm.
9. "Committee" means the Governor's Agricultural Best Management Practices Committee.
10. "Cover crop" means plants or a green manure crop grown for seasonal soil protection or soil improvement.
11. "Critical area planting" means using trees, shrubs, vines, grasses, or other vegetative cover on noncropland.
12. "Cropland" means land on a commercial farm that:
  - a. Is within the time-frame of final harvest to plant emergence;
  - b. Has been tilled in a prior year and is suitable for crop production, but is currently fallow; or
  - c. Is a turn-row.



ARTICLE 8. EMISSIONS FROM MOBILE SOURCES (NEW AND EXISTING)

R18-2-801. Classification of Mobile Sources

- A. This Article is applicable to mobile sources which either move while emitting air contaminants or are frequently moved during the course of their utilization but are not classified as motor vehicles, agricultural vehicles, or agricultural equipment used in normal farm operations.
- B. Unless otherwise specified, no mobile source shall emit smoke or dust the opacity of which exceeds 40%.

Historical Note

Adopted effective February 26, 1988 (Supp. 88-1). Amended effective September 26, 1990 (Supp. 90-3). Amended effective February 3, 1993 (Supp. 93-1). Former Section R18-2-801 renumbered to Section R18-2-901, new Section R18-2-801 renumbered from R18-2-601 effective November 15, 1993 (Supp. 93-4).

R18-2-802. Off-road Machinery

- A. No person shall cause, allow or permit to be emitted into the atmosphere from any off-road machinery, smoke for any period greater than 10 consecutive seconds, the opacity of which exceeds 40%. Visible emissions when starting cold equipment shall be exempt from this requirement for the first 10 minutes.
- B. Off-road machinery shall include trucks, graders, scrapers, rollers, locomotives and other construction and mining machinery not normally driven on a completed public roadway.

Historical Note

Adopted effective February 26, 1988 (Supp. 88-1). Amended effective September 26, 1990 (Supp. 90-3). Former Section R18-2-802 renumbered to Section R18-2-902, new Section R18-2-802 renumbered from R18-2-602 effective November 15, 1993 (Supp. 93-4).

R18-2-803. Heater-planer Units

No person shall cause, allow or permit to be emitted into the atmosphere from any heater-planer operated for the purpose of reconstructing asphalt pavements smoke the opacity of which exceeds 20%. However three minutes' upset time in any one hour shall not constitute a violation of this Section.

Historical Note

Adopted effective February 26, 1988 (Supp. 88-1). Amended effective September 26, 1990 (Supp. 90-3). Former Section R18-2-803 renumbered to Section R18-2-903, new Section R18-2-803 renumbered from R18-2-603 effective November 15, 1993 (Supp. 93-4).

R18-2-804. Roadway and Site Cleaning Machinery

- A. No person shall cause, allow or permit to be emitted into the atmosphere from any roadway and site cleaning machinery smoke or dust for any period greater than 10 consecutive seconds, the opacity of which exceeds 40%. Visible emissions when starting cold equipment shall be exempt from this requirement for the first 10 minutes.
- B. In addition to complying with subsection (A), no person shall cause, allow or permit the cleaning of any site, roadway, or alley without taking reasonable precautions to prevent particulate matter from becoming airborne. Reasonable precautions may include applying dust suppressants. Earth or other material shall be removed from paved streets onto which earth or other material has been transported by trucking or earth moving equipment, erosion by water or by other means.

Historical Note

Adopted effective February 26, 1988 (Supp. 88-1). Amended effective September 26, 1990 (Supp. 90-3). Amended effective February 3, 1993 (Supp. 93-1). Former Section R18-2-804 renumbered to Section R18-2-904, new Section R18-2-804 renumbered from R18-2-604 effective November 15, 1993 (Supp. 93-4).

R18-2-805. Asphalt or Tar Kettles

- A. No person shall cause, allow or permit to be emitted into the atmosphere from any asphalt or tar kettle smoke for any period greater than 10 consecutive seconds, the opacity of which exceeds 40%.
- B. In addition to complying with subsection (A), no person shall cause, allow or permit the operation of an asphalt or tar kettle without minimizing air contaminant emissions by utilizing all of the following control measures:
  1. The control of temperature recommended by the asphalt or tar manufacturer;
  2. The operation of the kettle with lid closed except when charging;
  3. The pumping of asphalt from the kettle or the drawing of asphalt through cocks with no dipping;
  4. The dipping of tar in an approved manner;
  5. The maintaining of the kettle in clean, properly adjusted, and good operating condition;
  6. The firing of the kettle with liquid petroleum gas or other fuels acceptable to the Director.

Historical Note

Adopted effective February 26, 1988 (Supp. 88-1). Amended effective September 26, 1990 (Supp. 90-3). Former Section R18-2-805 renumbered to Section R18-2-905, new Section R18-2-805 renumbered from R18-2-605 effective November 15, 1993 (Supp. 93-4).





GOVERNOR  
Susana Martinez



**DIRECTOR AND SECRETARY  
TO THE COMMISSION**  
Tod W. Stevenson

**STATE OF NEW MEXICO  
DEPARTMENT OF GAME & FISH**

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Solar\_011  
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Silver City, NM

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Las Cruces, NM

March 14, 2011

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

Re: Draft Programmatic Environmental Impact Statement (PEIS) for Solar Energy  
Development in Six Southwestern States; NMDGF Project No. 13914

Dear Argonne National Laboratory :

In response to the Federal Register Notice of Availability (Vol. 75, No. 242 / Friday, December 17, 2010), the New Mexico Department of Game & Fish (NMDGF) has reviewed the above referenced document. In this Draft PEIS, the Bureau of Land Management and the Department of Energy evaluate alternative management approaches to facilitating utility-scale solar energy development and mitigating environmental impacts. The PEIS also includes the identification and analysis of potential impacts on 24 proposed Solar Energy Zones (SEZ) in the six-state region. Our comments below pertain to the alternative management approaches, and to the three proposed SEZs located within the state of New Mexico.

Management Alternatives

Solar powered electric generation, as an alternative to burning fossil fuels, does not generate climate-changing greenhouse gases. As such, NMDGF supports the use of public land for development of utility scale solar energy facilities. The alternatives presented in the Draft PEIS for BLM are: continued case-by-case project evaluation (No Action Alternative); the closure of environmentally sensitive lands to solar application, adoption of standard design features to minimize adverse environmental effects, and designation of SEZs where the concentration of solar development would be encouraged (Preferred Alternative); or, permitting solar development only within the SEZs (SEZ Alternative). The alternatives for DOE are: continued case-by-case project evaluation (No Action Alternative); or, further integrate environmental considerations into its analysis and selection of solar projects (Preferred Alternative). This would support, and build on the BLM's analysis of potential impacts of utility-scale solar development, and on the identified potential mitigation measures, to provide a technical basis for development of guidance (Preferred Alternative). The alternative selected

by BLM will affect solar development only on lands managed by the BLM. The alternative selected by DOE will potentially affect projects on all lands, through policy and funding decisions.

NMDGF supports the Preferred Alternative for both agencies. However, this is not to say that all lands which will remain open to solar application are necessarily suitable for development. We encourage the BLM to continue exploring mechanisms by which to direct solar utility development toward lands which are already fragmented, degraded or otherwise impaired or low value wildlife habitat. Some closed units, such as National Monuments, may also warrant buffer zones closed to development.

### Solar Energy Zones

Of the three proposed SEZs in New Mexico, NMDGF recommends that Mason Draw be withdrawn from consideration. We make this recommendation due to the presence of large areas of intact native grassland of the Chihuahuan Semi-Desert Grasslands type, a key habitat identified in the New Mexico Comprehensive Wildlife Conservation Strategy. Areas of woody plant invasion existing on the Mason Draw are interspersed with remnants of grassland and have good potential for habitat restoration. Mason Draw also supports populations of antelope, quail and doves, and is considered a popular and high-quality hunting and wildlife-watching recreational resource. Development of Mason Draw, cumulative with full development of the Afton SEZ, would result in significant loss of accessible open space located near the population center of Las Cruces. This is not to say that Mason Draw should be entirely closed to solar development, just that there appears to be a level of resource conflict that would argue against promoting up to 80% surface disturbance.

The Afton and Red Sands areas are suitable for designation as Solar Energy Zones. Both are fragmented by numerous roads. Afton consists mostly of mesquite coppice dune habitat, a degraded habitat type resulting at least in part from the long-term impacts of excessive grazing pressure. There is very little potential for restoration as most of the soil has been blown away and there is little seed source left. Hunting activity is low and commercial developments already exist in the area. We support the proposed SEZ-specific design features, in particular considering only photovoltaic or dry-cooled technology, and the avoiding impacts to special habitat types as enumerated in the Draft PEIS. Special habitat types should be protected by appropriate buffer zones as determined in project-specific analyses.

### Reasonably Foreseeable Development Scenario (RFDS)

The RFDS used to estimate the potential extent of solar energy development in New Mexico is based on the New Mexico Renewable Portfolio Standard (RPS), which applies to electricity sold by utilities within the state. This approach is flawed and does not reflect the realities of the energy market. New Mexico is currently an exporter of electricity. As of 2002, in-state consumption accounted for <60% of our total electric production (New Mexico's Energy, Economics and Environment: Background Report for the 29th New Mexico First Town Hall, Carlsbad, New Mexico, November 14-17, 2002, by Elizabeth Bustamante, P.I., Petroleum Recovery Research Center, A division of The New Mexico Institute of Mining and Technology). Alternative energy development is currently constrained by transmission

**A.2.2.13 Design Features for Visual Resources*****A.2.2.13.1 Siting and Design***

Page A-84 Line 33. “In order to minimize night-sky impacts from hazard navigation lighting associated with solar facilities, the applicant shall use AVWS technology for any structures exceeding 200 ft (61 m) in height. If the FAA denies a permit for use of AVWS, the applicant shall limit lighting to the minimum required to meet FAA safety requirements. The use of red or white strobe lighting shall be prohibited unless BLM approves its use because of conflicting mitigation requirements.”

Please reconcile the above with the following recommendation from the U.S. Fish and Wildlife Service’s Draft Land-Based Wind Energy Guidelines, designed to minimize potential for bird collisions:

***Appendix B: Best Management Practices (BMPs) for Wind Energy Development***

“Use only red, or dual red and white strobe, strobe-like, or flashing lights, not steady-burning lights, to meet FAA requirements for visibility lighting of wind turbines, permanent met towers, and communication towers. Wind facilities should be lit with the minimum number of lights required on the turbines to meet FAA requirements. All pilot warning lights should fire synchronously. “

**Miscellaneous Corrections**

The correct state agency contact for rare plants, including those listed under the Endangered Plant Species Act (*New Mexico Statutes Annotated* [NMSA] 1978 § 75-6-1), is not NMDGF, but the Forestry Division of the Energy, Minerals and Natural Resources Department.

Page 4-87 Line 19. Wild bison are extirpated from New Mexico. All bison in the state should be classified as livestock, not wild big game.

Page 12.3-108 Line 44. Add oryx as a big game species which occurs on the Red Sands SEZ.

There are several inaccuracies regarding species status in Appendix J. Rather than list them, we have enclosed current Wildlife of Concern lists for Dona Ana and Otero Counties. Please consult the Biota Information System of NM at <http://www.bison-m.org/>, for current status and additional information about New Mexico wildlife.

(New Mexico Electricity Transmission Planning Report, 11/1/2010) focused on developing intrastate collection capacity for export. Thus the future development of solar and other alternative sources will depend primarily on the RPSs of high-demand states like Arizona and California, and the potential for connectivity to those markets.

### Design Features

NMDGF supports adoption of the design features listed in Appendix A of the Draft PEIS, with the following additional recommendations:

#### **A.2.2.11 Design Features for Ecological Resources**

##### ***A.2.2.11.1 Siting and Design***

Page A-57 Line 17. "Fences shall be built (as practicable) to exclude livestock and wildlife from all project facilities, including all water sites."

The purpose of each fence should be explicit. Standard barbed-wire fencing does not keep out wildlife. Fences that are intended to exclude large and medium wildlife must be chain link or woven wire, a minimum of eight feet high. If the exclusion is warranted due to presence of a hazardous situation (such as contaminated liquid, or heavy traffic), the fence should be wrapped around the bottom with smaller diameter material, to exclude small wildlife. Fences that are intended only to mark boundaries, or to exclude livestock, should be designed to facilitate wildlife crossing and minimize the potential for injury. Specific recommended fence design would depend on which species of wildlife are present in the area.

##### ***A.2.2.11.3 Site Characterization***

Page A-65. Add:

Drilling mud additives which contain detergents, acids, salts, surfactants, dispersants, or heavy metals are potentially harmful to wildlife, through lethal or non-lethal ingestion toxicity, or by the mechanism of reducing or eliminating the insulating properties of fur or feathers. Drilling pits which will contain such additives should be covered or netted to exclude flying and terrestrial animals. Extruded, knit or woven material is preferred above monofilament netting material, as it is less likely to ensnare wildlife and cause injury or death. Netting should be maintained taut around the frame. If the pits will contain only water and inert ingredients such as bentonite, and they are not covered or netted, they should be provided with ramps to allow the escape of wildlife which may become trapped. If space allows, ramps may consist of sloping back one side of the pit to a 3:1 or greater horizontal:vertical ratio. Constructed ramps are commonly made from sheets of expanded metal for steel tanks, or constructed of packed earth for earthen pits. Ramps made of material with surface texture can be used in the presence of smooth liners or other slippery substrate. To be effective, the escape mechanism must be intercepted by an animal swimming around the periphery of the tank or pit at any water level. NMDGF is available for consultation regarding netting or escape ramp options for any specific size and type of pit. Above-ground tanks should also be covered, netted or provided with a means of escape.

Thank you for the opportunity to comment on this Draft PEIS. If there are any questions, please contact Rachel Jankowitz at 505-476-8159, or [rjankowitz@state.nm.us](mailto:rjankowitz@state.nm.us).

Sincerely,



Matthew Wunder, Ph.D.  
Chief, Conservation Services Division

cc: Wally Murphy, Ecological Services Field Supervisor, USFWS  
Pat Mathis, SW Area Habitat Specialist, NMDGF  
Mark Birkhauser, NW Area Habitat Specialist, NMDGF  
Scott Draney, NE Area Habitat Specialist, NMDGF  
George Farmer, SE Area Habitat Specialist, NMDGF





## NEW MEXICO WILDLIFE OF CONCERN OTERO COUNTY

For complete up-dated information on federal-listed species, including plants, see the US Fish & Wildlife Service NM Ecological Services Field Office website at <http://www.fws.gov/southwest/es/NewMexico/SBC.cfm>. For information on state-listed plants, contact the NM Energy, Minerals and Natural Resources Department, Division of Forestry, or go to <http://nmrareplants.unm.edu/>. If your project is on Bureau of Land Management, contact the local BLM Field Office for information on species of particular concern. If your project is on a National Forest, contact the Forest Supervisor's office for species information. E = Endangered; T = Threatened; s = sensitive; SOC = Species of Concern; C = Candidate; Exp = Experimental non-essential population; P = Proposed

<u>Common Name</u>	<u>Scientific Name</u>	<u>NMGF</u>	<u>US FWS</u>	<u>critical habitat</u>
Oncorhynchus clarki	s	C		
Gila pandora	s			
Cyprinodon tularosa	T	SOC		
Aneides hardii	T	SOC		
Holbrookia maculata ruthveni	s			
Sceloporus cowlesi	s			
Aspidoscelis gypsi	s			
Crotalus lepidus lepidus	T			
Pelecanus occidentalis	E			
Phalacrocorax brasilianus	T			
Haliaeetus leucocephalus	T			
Accipiter gentilis	s	SOC		
Buteogallus anthracinus	T	SOC		
Falco femoralis	E	Exp		
Falco peregrinus	T	SOC		
Charadrius montanus	s	SOC		
Sterna antillarum	E	E		
Chlidonias niger surinamensis		SOC		
Columbina passerina	E			
Coccyzus americanus	s	SOC		
Strix occidentalis lucida	s	T	Y	
Athene cunicularia		SOC		
Cypseloides niger	s			
Cyananthus latirostris	T			
Hylocharis leucotis	T			
Trogon elegans	E			
Empidonax traillii extimus	E	E	Y	
Lanius ludovicianus	s			
Vireo bellii	T	SOC		
Vireo vicinior	T			
Ammodramus bairdii	T	SOC		
Anthus spragueii		C		
Passerina versicolor	T			
Myotis ciliolabrum melanorhinus	s			
Myotis lucifugus occultus	s			
Myotis velifer	s			
Myotis volans interior	s			
Myotis thysanodes thysanodes	s			

Euderma maculatum	T	
Corynorhinus townsendii pallescens	s	SOC
Nyctinomops macrotis	s	
Neotamias minimus atristriatus	E	SOC
Neotamias canipes sacramentoensis	s	
Spermophilus variegatus tularosae	s	
Cynomys ludovicianus ludovicianus	s	SOC
Tamiasciurus hudsonicus lychnuchus	s	
Geomys arenarius	s	SOC
Neotoma micropus leucophaea	s	SOC
Chaetodipus intermedius	s	
Zapus hudsonius luteus	E	C
Bassariscus astutus	s	
Spilogale gracilis	s	
Conepatus leuconotus	s	
Oreohelix neomexicana	s	

## NEW MEXICO WILDLIFE OF CONCERN DONA ANA COUNTY

For complete up-dated information on federal-listed species, including plants, see the US Fish & Wildlife Service NM Ecological Services Field Office website at <http://www.fws.gov/ifw2es/NewMexico/SBC.cfm>. For information on state-listed plants, contact the NM Energy, Minerals and Natural Resources Department, Division of Forestry, or go to <http://nmrareplants.unm.edu/>. If your project is on Bureau of Land Management, contact the local BLM Field Office for information on species of particular concern. If your project is on a National Forest, contact the Forest Supervisor's office for species information. E = Endangered; T = Threatened; s = State sensitive; SOC = Federal Species of Concern; C = Candidate; Exp = Experimental non-essential population

<u>Common Name</u>	<u>Scientific Name</u>	<u>NMGF</u>	<u>US FWS</u>	<u>critical habitat</u>
Bleached Earless Lizard	Holbrookia maculata ruthveni	s		
Southwestern Fence Lizard	Sceloporus cowlesi	s		
Little White Whiptail	Aspidoscelis gypsi	s		
Brown Pelican	Pelecanus occidentalis	E		
Neotropic Cormorant	Phalacrocorax brasilianus	T		
Bald Eagle	Haliaeetus leucocephalus	T		
Northern Goshawk	Accipiter gentilis	s	SOC	
Common Black-Hawk	Buteogallus anthracinus	T	SOC	
Aplomado Falcon	Falco femoralis	E	Exp	
Peregrine Falcon	Falco peregrinus	T	SOC	
Mountain Plover	Charadrius montanus	s	SOC	
Least Tern	Sterna antillarum	E	E	
Black Tern	Chlidonias niger surinamensis		SOC	
Common Ground-Dove	Columbina passerina	E		
Yellow-billed Cuckoo	Coccyzus americanus	s	C	
Mexican Spotted Owl	Strix occidentalis lucida	s	T	Y
Burrowing Owl	Athene cunicularia		SOC	
Buff-collared Nightjar	Caprimulgus ridgwayi	E		
Broad-billed Hummingbird	Cynanthus latirostris	T		
Violet-crowned Hummingbird	Amazilia violiceps	T		
Costa's Hummingbird	Calypte costae	T		
Southwestern Willow Flycatcher	Empidonax traillii extimus	E	E	Y
Loggerhead Shrike	Lanius ludovicianus	s		
Bell's Vireo	Vireo bellii	T	SOC	
Gray Vireo	Vireo vicinior	T		
Baird's Sparrow	Ammodramus bairdii	T	SOC	
Varied Bunting	Passerina versicolor	T		
Western Small-footed Myotis Bat	Myotis ciliolabrum melanorhinus	s		
Yuma Myotis Bat	Myotis yumanensis yumanensis	s		
Occult Little Brown Myotis Bat	Myotis lucifugus occultus	s		
Long-legged Myotis Bat	Myotis volans interior	s		
Fringed Myotis Bat	Myotis thysanodes thysanodes	s		
Western Red Bat	Lasiurus blossevillii	s	SOC	
Spotted Bat	Euderma maculatum	T		
Pale Townsend's Big-eared Bat	Corynorhinus townsendii pallescens	s	SOC	
Big Free-tailed Bat	Nyctinomops macrotis	s		
Organ Mountains Colorado Chipmunk	Neotamias quadrivittatus australis	T	SOC	

Desert Pocket Gopher	<i>Geomys arenarius</i>	s	SOC
Pecos River Muskrat	<i>Ondatra zibethicus ripensis</i>	s	SOC
Red Fox	<i>Vulpes vulpes</i>	s	
Ringtail	<i>Bassariscus astutus</i>	s	
Western Spotted Skunk	<i>Spilogale gracilis</i>	s	
Common Hog-nosed Skunk	<i>Conepatus leuconotus</i>	s	
Desert Bighorn Sheep	<i>Ovis canadensis mexicana</i>	T	
Dona Ana Talussnail	<i>Sonorella todseni</i>	T	SOC
Fairy Shrimp	<i>Streptocephalus moorei</i>	s	
Anthony Blister Beetle	<i>Lytta mirifica</i>		SOC
Desert Viceroy Butterfly	<i>Limnitis archippus obsoleta</i>		SOC

Ms. Irene Lopez  
 4986 Field St  
 San Diego  
 Ca 92110



Save my home! Please -

Dear Ms Donna Chirella

I'm sorry but I

can't attend the BLM Solar Energy Development PEIS hearing - but wondered if you could pass this along to the person in charge - I'm not lucky enough to live in the desert - like Palm Springs or Indian Wells - but love to visit + see the wonderful wildlife there - please tell the BLM to choose the Solar Energy Zone Program Alternative and improve that alternative by dropping the Iron Mountain and Pisgah Zones for its proposal - we must protect key habitat for imperiled animals like desert tortoises and the

11 FEB -7 AM 9:15

desert bighorn Sheep - while the  
Solar Energy Zone is a better  
approach - 2 of the 4 zones identified  
in California would be disastrous  
for wild life - the 2 zones are  
Iron Mountain and Pisgah Zones -  
I would be very grateful - and  
if possible a kind reply!

Sincerely  
Gene.

4986 Field St  
San Diego  
Ca 92110

SAN DIEGO CA 920  
04 FEB 11 PM 1 L

Mrs. Donna Chirello  
BLM

Palm Springs South Coast Field office  
1201 Bird Center Dr.  
Palm Springs  
California

92224501

92224501





March 15 2011

30752 W Lynwood St  
Buckeye AZ 85396-5338

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

Gentlemen:

Re Solar Energy

I'm attaching on the back of this letter two articles that appeared in our local newspaper today, both on solar energy.

This solar energy is what we need to get into the United States especially in the southwestern areas. Yuma AZ has about 4,000 hours of sunshine per year; Phoenix AZ and Las Vegas NV have about 3800 hours of sunshine per year. These are good areas to get this going.

I wrote Walmart in Arkansas in December 2008 to look into installing solar electric on the roof of their buildings. Not sure what I really had to do with this but Walmart on Watson Road in Buckeye AZ now has it installed. Hearsay this is the 3rd one in this area that has it installed now and hearsay they are working on the Walmart Distribution in Chandler installation now. More Walmarts in Phoenix area supposed to be up and working about June 1.

Is there a publication of some kind that shows who is getting into the solar electric?

I'm glad to see that BLM is cooperating on possible placement of solar electric on the federal government property. Maybe other federal agencies would cooperate.

Please send me some information on the areas in the 6 states that are involved with the BLM land for the solar electric.

Sincerely,

*Donald Sharp*  
Donald D Sharp

PS - I also got involved in trying to design a small solar electric/wind unit that would be adaptable to home roof use, to help alleviate the shortage of electricity to where they could be used to heat or cool a home. I lived in Minnesota where it gets 20-30 below zero and got my solar forced air unit to kick out about 130 degree air when the sunshine was available. Someone must have noticed my re-design of a wind generator for homes and understand that the Millacs Indian Reservation in Minnesota is producing such a unit. I have several VCR tapes on the solar design and solar heating in the San Luis Valley area in southern Colorado.

# Proposed solar plant gets consideration for fed. OK

by Brent Whiting  
staff writer

Federal officials will give priority consideration for a proposed 375-megawatt solar-energy plant on public land south of Goodyear and Buckeye.

The Sonoran Solar Energy Project is one of 19 renewable-energy efforts included on a list announced Tuesday by the U.S. Bureau of Land Management.

The proposed 4,000-acre facility is the only Arizona project to win a spot on the list, Dennis Godfrey, a BLM spokesman in Phoenix, said Wednesday.

The agency is expected to announce by the end of the year whether the project will win federal approval, Godfrey said.

The fast-track list includes nine solar, five wind and five geothermal projects throughout the western United States, said Bob Abbey, the BLM director.

"The BLM is committed to giving priority to renewable energy projects that are smart from the start and will help diversify this country's energy portfolio in an environmentally responsible manner," Abbey said.

"The process of screening for priority projects is

about focusing our staff and resources on the most promising renewable energy projects," he added.

The Arizona project is proposed on a site in Little Rainbow Valley, east of State Route 85 and north of the Sonoran Desert National Monument.

Project details were offered last April by Joe Incardine, the BLM national project manager, during

meetings in Phoenix, Gila Bend and Buckeye.

The solar plant is proposed by Boulevard Associates LLC, a subsidiary of NextEra Energy Resources, an energy firm based in Juno Beach, Fla.

The facility, which will have a natural-gas

backup, will use parabolic mirrors that track the sun and focus solar energy on a pipe containing heat-transfer fluid.

The heated fluid converts water to steam. The steam, in turn, propels turbines that produce the electricity.

The project, if approved, will employ about 1,000 during construction and 100 workers after it goes into operation, according to NextEra officials.

In addition, operation of the solar plant will require about 2,500 acre-feet of water per year, officials said. An acre-foot is about 325,851 gallons.

**The Arizona project is proposed on a site in Little Rainbow Valley, east of State Route 85 and north of the Sonoran Desert National Monument.**

## BLM seeks comment on solar zones

*View report*

The Bureau of Land Management has announced a 30-day extension of the public comment period for the Draft Solar Programmatic Environmental Impact Statement (Draft Solar PEIS), a joint effort with the Department of Energy.

The study is a comprehensive environmental analysis that has identified proposed "solar energy zones" on public lands in six Western states that are most suitable for environmentally sound, utility-scale solar energy production. The agencies had allowed 90 days for the public to comment on the draft plan.

Because of numerous requests, the agencies are extending the comment period by 30 days beyond March 17, the original closing date.

The comment period will now run until April 16. No additional public meetings will be held during the extended public comment period.

The Draft Solar PEIS assessed the environmental, social, and economic impacts associated with solar energy development on lands managed by the BLM in Arizona, California, Colorado, Nevada, New Mexico and Utah.

Under the study's preferred alternative, the BLM would establish a new solar energy program that would standardize and streamline the authorization process. The plan would also establish mandatory design features for solar energy development on BLM-managed lands.

The BLM would also establish Solar Energy Zones (SEZs) within the lands available for solar development right-of-way applications.

These are areas that have been identified as most appropriate for development, containing the highest solar energy potential and fewest environmental and resource conflicts.

The proposed SEZs would provide directed, landscape-scale planning for future solar projects and allow for a more efficient permitting and siting process.

The preferred method of commenting on the Draft Solar PEIS is by written submissions using the online form available at <http://solareis.blm.gov>.

Comments can also be mailed to Solar Energy Draft Programmatic EIS, Argonne National Laboratory, 9700 S. Cass Avenue - EVS/240, Argonne, Illinois 60439.

----- Original Message -----

From: "Ralph Perez" [electric38@mybluelight.com]

Sent: 07/15/2011 06:34 AM GMT

To: jane.summerson@ee.doe.gov

Cc: Linda Resseguie

Subject: Late comment on Solar PEIS

Dear PEIS developer,

Please consider that solar inks are being developed in several test labs. Even though this is a less efficient type of solar energy, it still allows for a dramatic drop in production and installation cost. Many countries are pursuing this technology and aggressive FIT's will likely accompany these types of systems. Some companies are also considering marketing "plug and play" units. These types of units drop the cost even more and allow consumers the chance to install their own rooftop or backyard solar.

Having a mass production of printing presses from numerous companies would enable the US to match efforts in other countries. Allowing subsidies to several solar printing press manufacturers could allow the US to stay within the technology development competition.

Having the extra \$200-\$600 a month from using rooftop solar would help our senior, disabled, low income citizen and small businesses to cope with the present economic conditions. It would also assist in ushering in the fast approaching electric car age. 80% of these newer vehicles should be using the energy from the sun for charging swappable batteries, rather than other fuels.

Allowing American citizens to own this means of transforming the free energy from the sun is vital (whether solar ink moves to a higher efficiency or not). Allowing a corporation or other form of existing monopoly will not achieve the long term economic benefit or efficiency that this technology deserves.

Thank you for consideration of this comment.

Ralph R. Perez



April 14, 2011  
Post Office Box 40381  
Phoenix, Arizona 85067-0381

Solar Energy Programmatic Environmental Impact Statement  
Argonne National Laboratory  
9700 South Cass Avenue – EVS/240  
Argonne, Illinois 60439

RE: Public Comment on the Bureau of Land Management and the Department of Energy's Solar Energy Draft Programmatic Environmental Impact Statement. [comment tracking number: SEDD10101]

My name is Donald Begalke of Phoenix, Arizona, appreciating your December 18, 2010 email of the Draft.

Among the approximate 35 percent of U.S. Citizens not owning a personal computer, access to the internet is via a public library program having limitations, inclusive of library PC usage to one hour on facilities' open days.

Your additional emails regarded public meetings on the Draft, inclusive of the March 1, 2011 Phoenix meeting were much appreciated also.

Arriving early at the Phoenix location this commentor found no printed draft nor displays about the project, but only on some solar technologies. However, during the premeeting time observing/listening informed that an email on the project's website was not received. Asking about a copy of the Draft's printing resulted negatively. Agency personnel must understand the substantial number of citizens without PCs. Yet look forward to printed versions. However, a half-sheet on the meeting/submitted comments was received as well as a disc on which this typist would learn about using. On a subsequent day, following frustration with the disc, emailing you resulted in receiving the project's website from your webmaster. Thank you!

At the Phoenix meeting I listened to those public commentors presenting verbally, and all would become project record. At this time I comment on a fellow's verbal statement that American Native Tribes should be included in this Project. That would be better relations for DOE as history regarding energy projects on tribal lands have resulted much too negatively, including the losses of too-many tribal lives. In Arizona the Navajos have lost lives, but also lost too much of their water resources over 35 years - the Hopi also on water lossage. I am aware of the Navajos' securing "credits" from the shutdown of the Laughlin, Nv. coal-fired plant with credits-usage goals "for solar". Thus, why are not the American Native Tribes and other federal-land agencies not included in this Project?

Additionally, at the Phoenix meeting the lead BLM staff member's advice on using the disc directed us to concentrate on Chapters 4, 5 and 8 plus Appendix D. With no Chapter 8 on the disc, was she misinformed?

I like this Project much because our nation's needs to move more rapidly into solar-power productions. In recent years at hearings before the Arizona Power Plant and Transmission Line Siting Committee, my public-comment presentations have been for the Solana Solar-Power Plant near Gila Bend, Az. and for the Harquahala Solar-Power Plant in Harquahala Valley, Az. - both in Maricopa County which also includes Phoenix and the "Gillespie Zone".

My first residence and job location in Arizona was in Harquahala Valley, 1976. In our neighborhood of the valley were BLM lands with the Eagletail Mountains approximately two miles from our front door. We learned about BLM's care of the land on behalf of their owners, U.S. Citizens. Educationally, students of the Harquahala Valley Elementary School had outdoor classes at the Eagletails extending from geology to wildlife to plantlife and history. As my oldest brother, Robert, and I had santa-rosa plum orchards, water was critical and our irrigation was a drip



system; saving on water usage also saved on the electric bill associated with the well's pump..

Over the decades participating in two transmission-line hearings before the Arizona Siting Committee occurred. In 1978 Harquahalans had to protect their farms, ranches, residences and the community from four alternatives of the Palo Verde-Devers 500kV Transmission Line proposal. My presentation before the Siting Committee aided in the decision to redirect the line around all of us, and the Arizona Corporation Commission affirmed the decision. During 2006-07 as an individual intervenor (of two intervenors) totally against Palo Verde Devers II 500kV Line for many reasons, the final Arizona decision was an ACC 5-0 Vote against the California proposal.

Regarding solar-power plants, as well as other energy-generating plants, my concerns include water issues, transmission-line issues and environmental issues.

Having used this Project's website and disc tools, even with the library limitations, I am for this Solar Power Programmatic Environmental Impact Statement and for this Project.

Focusing on the Arizona Zones in the Draft, recognitions that “zone one is not zone two is not zone three” and that zones in the other five states would differ causes cautions with respect to this Project's “programmatic” premises. Programmatic can cause effects of “boxing in” and also “boxing out”. Having a Brenda Zone, a Bullard Wash Zone and a Gillespie Zone, on BLM-managed lands in Arizona why does this Project limit the number of zones to three in Arizona? Why not establish five zones or more in Arizona? Why are not more zones in the project which would be located respectively in each of the other five states than what are already recognized in this Draft?

Could have some locations in each state been “boxed out” because of minor-area size differences? Were there discussions among the Project's agencies' personnels that can be reviewed, and some possible zones subsequently included as viable zones in the final PEIS?

For commercial, solar-power plants in each zone, are there allowable adjustments for power plants' locations regarding water, transmission lines and environmental issues respectively? Reading that some zones have received respective applications for solar-power plants is a fine positive of this Project. Regarding other zones having no current applications for solar plants, time can change circumstances for recognized zones. Thus, when applications do come to these current nonapplication zones, the agencies would be ready to proceed considering flexibilities.

Assessing the Brenda Zone, the BLM-DOE data is very positive. Regarding a transmission line to an existing transmission line 19 miles away, have project staffers contacted the utility owner of the existing line? Southward from Brenda to the I-10 Interstate Freeway corridor is the canal of the Central Arizona Project which transports Colorado-River water to interior destinations in Arizona. The CAP has a transmission line, and could become a Brenda solar-plant customer. Are applications part of the programmatic planning? Has BLM-DOE informed the CAP of Brenda' possibilities, including information on the application process? What would the distance be from Brenda to a CAP transmission-line connection? Would common sense of more-than-one power line from Brenda to existing transmission lines in different directions add to the Brenda's solar-power plant appeal? Will the remaining zones in the six states be restricted to solar-power plants having only a single transmission line, or other transmission lines too if reasonable and workable?

Less familiar with the Bullard Wash Zone (the general area - ?) water may or may not be as critical a concern. However, if there is a programmatic determination on solar technologies, I have not located it yet within this Project's website. Photo-voltaic solar technology requires less water for operations, and thus should be programmatically decided for the Arizona Energy Zones and preferred for all energy zones of the other five states.



Another water issue with solar-power plants is water's use to clean solar panels. Such use in solar energy zones constitutes water wastages when the panels can be cleaned with a duster or "a dry solar mop" similar to what is used in the dusting of auto vehicles. Panel cleanings with water also creates weed problems in the immediate plant grounds, but also can spread to nearby BLM land areas as "invasive weeds". I strongly recommend these water conservation-issues programmatically be included in this Project's "final policies".

Additionally, water for solar-power plants' operations should be recyclable in policy for conservation reasons.

On the Gillespie Zone, the location is a fine positive because of electric transmission reasons. The solar-power plant and/or zone at Gillespie appears to require locational adjustment for environmental reasons.

Regarding wildlife, water sources for their survivals should not been used for the solar-power plants' operations. At nighttime, usage of electric lights at power plants should be at micro-standards to avoid interruptions to wildlife. Such should be part to the programmatic policies for all solar energy zones in the U.S.

BLM and DOE staffs have worked very hard on this Project, and are to be applauded for the this Draft.

As such, and with recommended programmatic policies, this Project's final result will be better. I respectfully request the BLM and DOE staffs serious effects to make the Solar-Energy Zones' Alternative the programmatic environmental-impact-statement decision for this Project.

Thank you for allowing Public Comments!!

Sincerely yours,



Donald Begalke

Email Address: [lakeharq08@yahoo.com](mailto:lakeharq08@yahoo.com)

copies: file; others

2369 Lloyd Lane  
Sacramento, California 95825-0260

13 April 2011

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

Dear PEIS Staff:

My comments concern the discussion of Native American trails contained in the *Cultural Resources* and *Native American Concerns* sections for the Imperial East, Iron Mountain, Pisgah, and Riverside East solar energy zones (SEZs) in California, although they may also be pertinent to the SEZs located in the other States included in the PEIS.

I agree that the Native American tribes living in the California Desert had an established system of trails throughout the region that were both utilitarian (e.g., used for trade, inter-tribal relations, hunting and gathering, and procurement of natural resources) and sacred (e.g., part of the tribes' cultural landscapes) in their use. However, after reading the above described sections and reviewing the references section, I wondered if some pertinent literature had been overlooked during the preparation of the PEIS. I was aware that some of the earlier academic literature had contained maps of the trails, but that they were usually general in nature and in a large scale, which would preclude the location of the trails on the ground. So my interest was piqued as to whether there was additional literature that would be useful in identifying and evaluating trails in the SEZs and surrounding areas. As a result of my informal review of the pertinent literature, I compiled a four pages long bibliography which is attached for your review and use in preparation of the final PEIS. I direct your attention to *Pigniolo, Underwood, and Cleland (1997)*, which identified trails either traversing or adjacent to the Imperial West SEZ.

While I was able to approximate the locations of several of the trails described in *Fowler (2009)* and Appendix A of *Laird (1976)*, by combining that information with information about watering holes described in *Brown (1920 and 1923)*, Appendix 2 of *King and Casebier (1981)*, and *Thompson (1921 and 1929)*; that does not always equate to success on the ground. As *Musser-Lopez and Miller (2010:21)* found, "... it is not as easy as we initially thought to make archaeological trails and ethnographic trails meet". The landscape of the California Desert is and was constantly being changed by both natural processes, historic and modern construction of infrastructure, and modern uses of the land. However, I believe that Native American trails are an important cultural and historic resource that needs to be identified and evaluated during the environmental review and approval process for any proposed renewable energy projects located in the California Desert.

Sincerely,



Duane Marti



Apple, Rebecca McCorkle

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Brown, J. S.

1920 *Routes to desert watering places in the Salton Sea region*. U. S. Geological Survey Water-supply Paper no. 490-A. Washington, DC: Government Printing Office.

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Casebier, Dennis G.

1975 *The Mojave Road*. Norco, CA: Tales of the Mojave Road Publishing Company.

Cleland, James H.

2005 *The sacred and the mundane - Cultural landscape concepts and archaeological interpretations in the Colorado Desert*. Proceedings of the Society for California Archaeology, 18: 131-136.

2008 *Ethnographic trail systems as large-scale cultural landscapes: Preservation and management issues*. In Exploring the boundaries of historic landscape preservation, edited by Cari Goetcheus and Eric MacDonald, pages 41-55. Clemson: Clemson University Digital Press.

Colton, Harold Sellers

1941 *Prehistoric trade in the Southwest*. Scientific Monthly, 52 (April): 308-319.

Davis, Emma Lou, Delbert True, and Gene Sterud

1965 *Engraved rocks beside a trail: Imperial County*. UCLA Archaeological Survey Annual Report, no. 7: 323-332.

Davis, James T.

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Solar\_018

April 20, 2011

Solar Energy PEIS  
Argonne National Laboratory  
9700 S. Cass Avenue  
EVS/240  
Argonne Illinois 60439

Subject: Comments on the Draft PEIS for Solar Energy Development in Six Southwestern States,

To Whom It May Concern:

Anza Borrego Foundation (ABF), is a 501 C 3 Organization located in Borrego Springs California. The primary mission of ABF is to work with the Anza Borrego desert State Park (ABDSP) in preserving and protecting Park lands through acquisition of in-holdings, wildlife corridors, buffer areas and nearby ecologically connected lands as well as advocating against all inappropriate activities having negative impacts to the Park. Our current mission is to preserve the natural landscapes, wildlife habitat and the cultural heritage of Anza Borrego Desert State Park for the benefit and enjoyment of present and future generations.

ABF has the following concerns with the draft PEIS and proposed project:

1. The draft PEIS includes BLM lands directly adjacent to Anza Borrego Desert State Park as "lands available for solar development" under the preferred and/or no action alternatives. We would join with the Park in requesting the removal of BLM lands directly adjacent to ABDSP from consideration for development of solar energy projects due to significant aesthetic, biological, cultural, soils and recreational impacts of such projects to Park resources. We urge that all BLM lands directly adjacent to ABDSP be placed in the "lands not available for solar development" category.
2. There is a section of BLM land (SBBM-T.10S.,R.9E., Section 2) that is now within a legislatively defined boundary of a newly acquired area of Anza Borrego Desert State Park called Desert Cahuilla. This area was specifically acquired for resource conservation. There are known significant cultural resources in this area. Further, there are a number of sensitive species that may occur on this land. This Section should be placed in the "lands not available for solar development" category.

Sincerely,

Ralph M. Singer  
Vice President Environmental Affairs

Cc: Gail Sevrens

## STATE OF COLORADO

John W. Hickenlooper, Governor  
 DEPARTMENT OF NATURAL RESOURCES  
**DIVISION OF WILDLIFE**

AN EQUAL OPPORTUNITY EMPLOYER

Thomas E. Remington, Director  
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*For Wildlife-  
 For People*

March 9, 2011

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

**RE: Comments on the Department of Energy and Bureau of Land Management Solar Energy Development Draft Programmatic Environmental Impact Statement (Draft EIS)**

To Whom It May Concern:

The Colorado Division of Wildlife (CDOW) has reviewed the Colorado portion of the Department of Energy (DOE) and Bureau of Land Management (BLM) six-State Draft EIS for solar energy development. CDOW appreciates the opportunity to review the Draft EIS and to provide input on the proposed Alternatives and design features.

We understand that BLM proposes to establish a new Solar Energy Program and to amend existing BLM Resource Management Plans to identify four Solar Energy Zones (SEZs) on BLM-administered lands in Colorado. The BLM and DOE propose to streamline utility-scale production of solar energy by designating SEZs with few impediments to solar energy development. We recognize that the SEZ-specific design features proposed in the Draft EIS and the general design features described in Appendix A would be implemented to avoid, minimize, and mitigate impacts to wildlife and other resources.

CDOW supports energy conservation and renewable resource development projects as a recognized means to reduce the long-term impacts of energy development on wildlife resources. We do, however, have comments regarding issues that are not addressed adequately in the Draft EIS, and specific concerns regarding how the impacts to wildlife within the SEZs in Colorado are characterized. We have also identified several errors that should be corrected in the Draft EIS and items needing clarification. In addition, we offer recommendations for the SEZ-specific design features and the design features contained in Appendix A that will help address impacts to wildlife resources. Our comments are limited to the wildlife resources that occur within and near the areas proposed as SEZs in the San Luis Valley of Colorado.

## 1) Issues that are not addressed adequately in the Draft EIS:

**Water use requirements for the various solar technologies proposed in the Draft EIS and potential impacts to waterfowl and wetland dependent wildlife resources:** CDOW is concerned that the water demands for solar development could adversely impact wildlife resources. As noted in the Draft EIS, both surface and groundwater rights in the San Luis Valley are generally over appropriated. The Draft EIS notes that water requirements for solar development would have to be met through the purchase of senior water rights, and that the purchase and diversion of water rights for solar energy development would put some agricultural lands out of production. This would likely change the distribution and timing of agricultural return flows and surface water availability in some parts of the San Luis Valley. These resources are critical for some wildlife populations, particularly waterfowl and migratory birds.

The San Luis Valley is a significant national resource for waterfowl. It contains the largest complex of wetlands for breeding waterfowl in Colorado, supporting large populations of both resident and migratory waterfowl. In spring, tens of thousands of northern pintails, sandhill cranes, Canada geese, and other species of migratory waterfowl can be seen throughout the valley refueling for their journey to northern breeding grounds. In spring and fall, 95% of the Rocky Mountain population of sandhill cranes migrates through the San Luis Valley. The San Luis Valley is home to the largest colony of nesting water birds in Colorado, and portions of the San Luis Valley have some of the highest duck nesting densities in the country.

The Antonito Southeast, De Tilla Gulch, and Los Mogotes East SEZs are known to contain riparian resources and perennial water sources used by waterfowl, migratory birds, and other wetland-dependent wildlife. Wildlife use of these water resources may be affected by any change in the surface water characteristics of wetlands, including water temperature. Many wetlands in the San Luis Valley are available year-round to waterfowl and other wildlife due to natural geothermal heating. Utility-scale solar development within the SEZs that directly or indirectly impact the seasonal availability, temperature, or distribution of wetlands through surface or groundwater depletions or diversions of water from agricultural lands could have negative consequences for waterfowl and other wildlife dependent on these resources.

***Recommendation:*** Due to the significance of waterfowl, migratory birds and other wetland-dependent wildlife resources in the San Luis Valley, CDOW recommends that impacts to these species from changes in water use be evaluated prior to the approval of site-specific solar development proposals within the San Luis Valley. CDOW recommends that the water use design features in Appendix A, p. A-57, be expanded for SEZs in Colorado to include these groups of species (not just special status species). CDOW also recommends that the SEZ-specific design features in the San Luis Valley include preconstruction baseline surveys to document wetlands, surface water resources, and wildlife use of the areas that would be impacted by changes in water use, and identify measures that will be implemented (including measures such as wetland augmentation plans) to avoid impacts to these resources.

**Large-scale habitat loss for big game, potential increases in State-paid private land game damage claims, and impacts on hunting recreation:** CDOW is concerned that the projected loss of 80% of the vegetation within the 21,050-acre SEZs identified in Colorado (a 16,840-acre loss of habitat) would have significant impacts on the distribution and numbers of elk, mule deer, and pronghorn that currently utilize these areas. Big game currently using these areas would be displaced to adjacent areas which are in many cases private agricultural lands. This displacement not only reduces hunting opportunity and CDOW's ability to manage wildlife to achieve population objectives, it may also lead to potential increases in private game damage claims resulting from wildlife damaging agricultural lands. In each of the last three years, CDOW has paid private land game damage claims in the San Luis Valley ranging between \$21,000 and \$55,000 per year.

Big game hunting recreation, particularly for pronghorn, would be impacted by the quantity of vegetation removal and the location of the proposed SEZs. Hunting recreation for pronghorn in the San Luis Valley is highly coveted by Colorado hunters and the opportunity to hunt there is limited. For example, both the Los Mogotes East and Antonito SE SEZ's are located in CDOW Game Management Unit (GMU) 81. It takes a hunter 10 years of applying for a license, at minimum, to compete for a single pronghorn antelope rifle license in GMU 81. Thus, a hunter can hunt pronghorn with a rifle in GMU 81 approximately once every 10 years, even if they apply for a license every year. The situation is similar for the GMU encompassing the De Tilla Gulch SEZ.

Based on population estimates and annual reproduction, etc., pronghorn license numbers are typically set below 30 licenses per year in GMU 81. If we lose pronghorn from GMU 81 (due to displaced animals or loss of habitat, etc.) license numbers may have to be reduced impacting hunting opportunity. A reduction in just a few hunting licenses in GMU 81 will significantly impact hunting opportunities for pronghorn in this area. A similar situation exists for the GMU encompassing the De Tilla Gulch SEZ.

***Recommendation:*** CDOW recommends that the Draft EIS acknowledge the impacts described above, and that SEZ-specific design features be adopted for the Los Mogotes East and De Tilla Gulch SEZs that require solar development proposals in these areas to be accompanied by off-site habitat improvement projects and/or compensatory mitigation (habitat replacement) that offsets habitats losses in these areas in order to minimize both displacement of big game onto private lands (game damage) and lost hunting opportunities for pronghorn.

**Avian mortality hazards and monitoring of avian mortality:** Some studies suggest relatively high avian mortality rates at solar facilities due to collisions with mirrors and contact with high temperature components of solar facilities. Although the Draft EIS acknowledges potential impacts to birds due to access to evaporation ponds and collisions with transmission lines and tall structures, there is no discussion of anticipated avian mortality rates at these facilities, collisions with mirrors, or contact with high temperature components of utility-scale solar production facilities.

***Recommendation:*** CDOW recommends that Draft EIS acknowledge increases in avian mortality at solar facilities, and that Appendix A include a design feature that requires preparation of an avian mortality monitoring, reporting, and mitigation plan as part of the already-required Ecological Resources Mitigation and Monitoring Plan (p. A-62).

**Potential noise impacts to wildlife:** The Draft EIS characterizes potential noise emission from industrial-scale solar facilities within the SEZs, and includes several design features to minimize the noise impacts on nearby human residences. The Draft EIS does not, however, include a similar analysis of noise impacts to wildlife resources or propose design features sufficient to minimize these impacts. The projected levels of operational noise emitted from each of the solar technologies described within the Draft EIS [40 dBA to greater than 88 dBA] are within the range of continuous noise emissions that are known to affect wildlife, particularly songbirds and upland birds.

The response to anthropogenic sources of noise is highly variable between different wildlife species. For species sensitive to noise, the operational levels of noise outlined in the Draft EIS may displace individuals from otherwise suitable habitats within and near the SEZs. This displacement may alter species diversity and species composition, and adversely affect the breeding success for some species in these areas. For example, the most comprehensive experimental studies on the subject of noise impacts to wildlife demonstrate that many species of small breeding birds in both grassland and forest habitats appear to avoid areas in proportion to increasing noise levels (associated with high volume roadways) at distances up to three thousand meters.

***Recommendation:*** CDOW recommends incorporating in the Draft EIS a brief analysis of potential noise impacts to wildlife within each of the SEZs, and adding SEZ-specific design features that commit BLM and DOE, in consultation with appropriate State and Federal wildlife agencies, to incorporate measures into each solar development proposal that limit continuous sources of operational noise to levels consistent with the continued use of the SEZs by the Special Status Species associated with these areas. Alternatively, a design feature could be incorporated that requires solar development proposals in these areas to be accompanied by off-site habitat replacement to offset the habitats losses from noise emissions that are identified for impacted species.

**Potential impacts to bats:** The Draft EIS does not address the potential loss of abandoned mines as roosting habitat for Townsend's big-eared bats. In the analysis of potential roosting habitat within the SEZs for Townsend's big-eared bats, there is no mention of abandoned mines potentially occurring in the SEZs. Additionally, the De Tilla Gulch SEZ is within the foraging area of the Orient Mine Mexican free-tailed bat colony, which houses a bachelor colony of over 200,000 individuals. The Orient Mine bat colony is a unique resource warranting conservation efforts that should be acknowledged in the EIS.

Impacts from industrial-scale solar technologies on bats are largely unknown, but solar concentrating towers, large mirror arrays, noise emissions from industrial facilities, and potential access to contaminants in evaporation ponds are of concern for bats. The Draft EIS does not acknowledge or address these potential impacts to bats in the San Luis Valley.

***Recommendation:*** CDOW recommends that an analysis of the potential for abandoned mine roosting habitat within the SEZs be completed in the Draft EIS, or that a design feature requiring pre-construction surveys and avoidance of abandoned mine roosting habitat be added to Appendix A. In addition, the issues identified above should be identified in the Draft EIS as potential impacts to bats. Finally, the design feature contained in Appendix A, p. A-69, should specify a mesh size for netting that excludes bats as well as other wildlife from evaporation ponds if the water is not suitable for drinking. Excluding bats can be accomplished by installing netting or other mesh material with a mesh size  $\leq 3$  inches.



## 2) Issues that are not described accurately in the Draft EIS:

**The magnitude of the likely impacts to wildlife resources within each SEZ:** CDOW is concerned that the magnitude of the impacts to wildlife resources is understated in many cases due to the methods used to quantify the impact with each SEZ, as outlined in Appendix M. The Draft EIS characterizes the impacts to wildlife habitats in the following way:

*For the purpose of identifying potential wildlife species in the general area of the SEZ, a 50-mi (80-km) radius circle around the center of each SEZ was used to identify species based on (1) county level occurrences, (2) locations of species observations as determined by state wildlife and/or natural heritage agencies, and (3) occurrence of identified land cover for the species listed by the SWReGAP (USGS 2005). The area encompassed by this circle was considered the **SEZ region**. The 50-mi (80-km) SEZ region was conservatively chosen on the basis of professional judgment to account for uncertainty in species distributions and to ensure that impacts on representative wildlife species potentially affected by development within the SEZ could be evaluated.*

Quantifying wildlife habitat for individual species with an arbitrarily selected **50-mile SEZ Region** does not take into consideration how much habitat within the 50-mile SEZ Region is actually available for use, and results in understating the magnitude of the impact that habitat loss within the SEZ has on local wildlife populations. Not all suitable habitats within a 50-mile radius from the center of an SEZ are available for most of the species identified within the SEZs. For example, in the Los Mogotes East SEZ impacts to pronghorn are classified as follows:

*Based on potentially suitable land cover, up to 4,734 acres (191 km<sup>2</sup>) of potentially suitable pronghorn habitat could be lost by solar energy development within the proposed Los Mogotes East SEZ and another 16 acres (0.06 km<sup>2</sup>) by access road construction. This represents about 0.2% of potentially suitable pronghorn habitat within the **SEZ region**. Over 86,000 acres (348 km<sup>2</sup>) of potentially suitable pronghorn habitat occurs within the area of indirect effects. Based on mapped pronghorn activity areas, solar development in the proposed Los Mogotes East SEZ would directly affect 4,734 acres (191 km<sup>2</sup>) of pronghorn overall range, winter range, and severe winter range (about 0.4, 0.5, and **3.7%**, respectively, of each range occurring within the Colorado portion of the **SEZ region**); and 3,145 acres (12.7 km<sup>2</sup>) of winter concentration area (about 2.8% of the winter concentration area occurring within the Colorado portion of the SEZ region) (Table 10.4.11.3-5). No direct impacts on other pronghorn activity areas would occur. Overall, impacts on pronghorn from solar energy development in the SEZ would be **small to moderate**.*

A 50-mile radius from the center of the SEZ would include pronghorn severe winter range from the Los Mogotes East SEZ all the way to the towns of Monte Vista, Del Norte, Fort Garland, and San Luis. The pronghorn utilizing the Los Mogotes East SEZ do not migrate to this extent and do not have access to this broad 50-mile distribution of severe winter range. Based on the distribution of severe winter range that is actually available to the pronghorn utilizing the Los Mogotes East SEZ, CDOW estimates that the habitat loss of 5,918 acres (the size of the Los Mogotes East SEZ) would have **high impacts** (16%) to severe winter range for this pronghorn population. This loss of 16% of the available severe winter range compares to a 3.7% loss estimated in Draft EIS based on the entire SEZ Region. Thus, the magnitude of the impacts to Pronghorn Severe Winter Range in the Los Mogotes East SEZ is grossly understated in the Draft EIS.

In addition, the Draft EIS does not discuss the location of the habitat loss relative to the remaining available habitat, and the fragmentation that would result due to the location of the development. For example, the Los Mogotes East SEZ is located in the center of the severe winter range available

to this pronghorn population. Bisecting the available severe winter range with a 5,918-acre development is likely to affect this pronghorn population disproportionately due to the location of the SEZ within the available severe winter range for this population.

Similarly, impacts to pronghorn at the De Tilla Gulch SEZ are likely to be disproportionate due to the location of this SEZ and its use by pronghorn in context with the availability of surrounding habitats. The De Tilla Gulch SEZ serves as a winter corridor for pronghorn to get to water sources to the north and east. The loss of pronghorn habitat at this location would likely disrupt these movements and cause the animals to concentrate more heavily on private land to the east, potentially increasing landowner conflicts.

***Recommendation:*** CDOW recommends that BLM and DOE consider incorporating into the methodology in Appendix M a biologically appropriate scale and context for re-evaluating and characterizing the magnitude of impacts of habitat loss within each SEZ for individual species or groups of species.

**Potential impacts to Gunnison's prairie dog and proposed design features:** The Draft EIS acknowledges the presence of Gunnison's prairie dog burrows (a Federal Candidate Species) within each of the four SEZs, and we agree that they are likely to occur there. The Draft EIS proposes pre-construction surveys and avoidance where possible, as well as potential translocation or compensatory mitigation if avoidance is not possible. Note that due to the amount of proposed vegetation removal within each SEZ (80%), avoidance will likely not be possible. In addition, translocation of prairie dogs in Colorado is difficult and may not be a practical mitigation technique due to local government and landowner concerns.

### **3) Errors that should be corrected in the Draft EIS:**

- P. 10.4-31, Los Mogotes East SEZ: The recreation section refers to quail hunting in or near the SEZ. There are no quail in this area.
- P. 10.4-82, Lost Mogotes East SEZ, and P. 10.1-88, Antonito SE SEZ: There are no New Mexico spadefoot in the San Luis Valley. There are only plains spadefoot.
- P. 10.1-88, Antonito SE SEZ: Chorus frogs are missing from the amphibian lists.
- p. 10.5-160, Lost Mogotes East SEZ, and p. 10.1-176, Antonito SE SEZ: The big free-tailed bat is not a year round resident of San Luis Valley – it is migratory.
- p. 10.5-160 Los Mogotes East SEZ, and p. 10.1-178, Antonito SE SEZ: There are no records of spotted bats from the San Luis Valley.
- Lost Mogotes East SEZ and Antonito SE SEZ: New Mexico jumping mouse should be included as a potential special status species within these SEZs.

**4) Issues needing clarification in the Draft EIS:**

**Seasonal timing limitations and buffer zones contained in design features:** Appendix A includes design features that refer generally to activity avoidance buffers that will be established for certain Special Status Species and seasonal avoidance of construction and other disturbing activities during critical periods for wildlife. The Draft EIS does not specify SEZ-specific design features that outline the species-specific buffers and timing limitations for subsequent solar development within each SEZ.

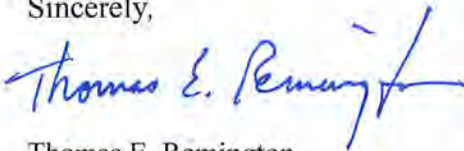
On December 10, 2010, CDOW submitted to BLM's Colorado State Office recommendations regarding species-specific buffers and seasonal timing restrictions for oil and gas activities in Colorado. These recommendations were biologically based and are applicable in most cases to solar development activities. A spreadsheet summarizing these recommendations is attached for your convenience.

***Recommendation:*** CDOW recommends that BLM and DOE incorporate SEZ-specific design features that incorporate the species-specific buffers and seasonal timing restrictions referred to in the attached recommendations for oil and gas lease stipulations in Colorado.

**Conclusion**

CDOW appreciates DOE's and BLM's efforts to solicit public input on the Draft EIS. As the DOE and BLM consider public comments, we encourage you to consider the potential impacts to wildlife resources we have highlighted above and our recommendations for design features to address these impacts. Since subsequent environmental impact studies for site-specific solar energy development proposals will tier to this EIS, we encourage you to incorporate SEZ-specific standards and guidelines in the PEIS to guide development in a manner that is protective of the wildlife resources and issues that we have identified. We look forward to working with you during the development of the Final Solar EIS for the benefit of wildlife in Colorado.

Sincerely,



Thomas E. Remington  
Director

Enc/

- Cc: Tom Spezze  
Rick Basagoitia  
Ron Velarde  
Dan Prenzlou  
Steve Yamashita  
K. Kaal  
J. Holst  
A. Trujillo  
C. Greenman

**CDOW Recommended Stipulations for Oil and Gas Within the State of Colorado**

<b>Wildlife Species</b>	<b>Habitat Types</b>	<b>No Surface Occupancy Stipulation</b>	<b>Timing Limitation Stipulation</b>	<b>Controlled Surface Use Stipulation</b>
Bats (Brazilian Free-tailed, Townsend's Big-eared, Fringed Myotis)	Roost Sites	Within 0.25 Miles of Roost Site	<u>(time period - may be greater than 60 days)</u> N/A	<u>(potential facility relocate or operational constraint)</u> A bat inventory may be required prior to approval of operations within historic mining complexes. These are areas where bats are suspected or the habitat is deemed suitable but no bats have been documented. The inventory data will be used to apply conservation measures to reduce the impacts of surface disturbance on bat habitat
Bighorn Sheep	Production Areas Winter Range	Entire Mapped Production Area Entire Mapped Winter Range Area	April 15-June 30 (Rocky Mountain) February 28-May 1 (Desert) - TL for human activities in these habitats includes over flights November 1-April 15	N/A N/A
Black Footed Ferret	Release Areas	N/A	Entire Area March 1-July 15	N/A
Columbian Sharp-tailed Grouse	Leks Winter habitat Production Areas (Breeding and Nesting habitat)	Within 0.4 Miles of Lek Sites N/A N/A	N/A Restrict development between Dec 1- March 15 Within 1.25 Miles of Lek Sites March 15-July 30	N/A Limit noise not to exceed 49 dB measured 30 ft. from source. Surface Density Limitation of one pad per section; Relocate compressors > 1.25 miles from lek; Limit noise not to exceed 49 dB measured 30 ft. from source.
Cutthroat Trout	Designated Cutthroat Habitat Designated Cutthroat Habitat Watershed	300-Feet from OHWM N/A	SEE Aquatic Species stip N/A	N/A Surface Density Limitation of one pad per section
Mule Deer	Crucial Winter Ranges (Severe Winter Range and Winter Concentration Areas)	N/A	December 1-April 15	Surface Density Limitation of one pad per section or consider off site mitigation actions
Elk	Crucial Winter Ranges (Severe Winter Range and Winter Concentration Areas) Production Areas	N/A N/A	December 1-April 15 May 15-June 30	Surface Density Limitation of one pad per section or consider off site mitigation actions Surface Density Limitation of one pad per section or consider off site mitigation actions

<b>Gunnison/Greater Sage-grouse</b>	Leks <sup>1</sup> Core Areas (Occupied Habitat = Core Area for Gunnison sage-grouse) Winter Range Production Areas (Breeding and Nesting habitat)	Within 0.5 Miles of Lek Sites No Lease N/A N/A	N/A N/A December 1-March 15 Within 4 Miles of Lek Sites March 1-June 30	N/A Surface Density Limitation of one pad per section; Relocate compressors > 4 miles from lek; Limit noise not to exceed 49 dB measured 30 ft. from source. Surface Density Limitation of one pad per section; Relocate compressors > 4 miles from lek; Limit noise not to exceed 49 dB measured 30 ft. from source. Surface Density Limitation of one pad per section; Relocate compressors > 4 miles from lek; Limit noise not to exceed 49 dB measured 30 ft. from source.
<b>Greater Prairie Chicken</b>	Leks Production Areas (Breeding and Nesting habitat)	Within 0.5 Miles of Lek Sites N/A	N/A Within 2.2 miles of Lek sites March 1-June 30	N/A Surface Density Limitation of one pad per section; Limit noise not to exceed 49 dB measured 30 ft. from source.
<b>Kit Fox</b>	Den Sites	N/A	Within 0.25 mile of den sites February 1-May 1	Pre-construction survey for den sites may be required
<b>Least Tern</b>	Production Areas (Breeding and Nesting habitat)	Within 300 Feet OHWM	0.5 Miles-No Human Encroachment-April 1-July 31	N/A
<b>Lesser Prairie Chicken</b>	Leks <sup>2</sup> Core Areas Production Areas (Breeding and Nesting Habitat)	Within 0.5 Miles of Lek Sites No Lease	N/A N/A Within 2.2 Miles of Lek Sites March 15-June 15	N/A Surface Density Limitation of one pad per section; Relocate compressors > 2.2 miles from lek; Limit noise not to exceed 49 dB measured 30 ft. from source. Surface Density Limitation of one pad per section; Relocate compressors > 2.2 miles from lek; Limit noise not to exceed 49 dB measured 30 ft. from source.
<b>Lynx</b>	Consult with DOW regarding Lynx use of the development area			
<b>Mountain Plover</b>	Active Nest Site	Within 300 Feet of Active Nest	N/A	Pre-construction survey for nest sites may be required
<b>Piping Plover</b>	Production Areas (Breeding and Nesting Habitat)	Within 300 Feet OHWM	Within 0.5-No Human Encroachment-April 1-July 31	N/A
<b>Plains Sharp-tailed Grouse</b>	Leks Core Areas Production Areas (Breeding and Nesting Habitat)	Within 0.4 Miles of Lek Sites No Lease N/A	N/A N/A Within 1.25 Miles of Lek Sites-March 1- June 30	N/A Surface Density Limitation of one pad per section; Relocate compressors > 1.25 miles from lek; Limit noise not to exceed 49 dB measured 30 ft. from source. Surface Density Limitation of one pad per section; Relocate compressors > 1.25 miles from lek; Limit noise not to exceed 49 dB measured 30 ft. from source.

<i>Prairie Dogs (White-tailed/Gunnison's)</i>	Colonies	N/A	March 1-June 15	Pre-construction survey for active colonies may be required; avoid direct disturbance to active colonies when possible
<i>Peregrine and New Mexico Meadow Jumping Mouse</i>	Known and Potential Occupied Habitat	Within 300 ft. of stream centerline	N/A	N/A
<i>Pronghorn Antelope</i>	Winter Concentration Areas	N/A	January 1-March 31	N/A
<i>Bald Eagle</i>	Active Nest Site <sup>3</sup>	Within 0.25 Miles of Nest Site	N/A	Pre-construction nest surveys may be required
	Active Nest Site	N/A	0.5 Miles- No Human Encroachment October 15-July 31	
	Active Winter Night Roost Sites <sup>4</sup>	Within 0.25 Miles of Roost Site	N/A	Pre-construction roost surveys may be required
	Active Winter Night Roost Sites	N/A	0.5 Miles- No Human Encroachment November 15 1-February 28	
<i>Ferruginous Hawk</i>	Active Nest Site <sup>3</sup>	Within 0.5 Miles of Nest Site	N/A	Pre-construction nest surveys may be required
	Active Nest Site	N/A	0.5 Miles- No Human Encroachment February 1-July 15	
<i>Golden Eagle</i>	Active Nest Site <sup>3</sup>	Within 0.25 Miles of Nest Site	N/A	Pre-construction nest surveys may be required
	Active Nest Site	N/A	0.5 Miles- No Human Encroachment December 15-July 15	
<i>Mexican Spotted Owl</i>	Protected Activity Centers (PAC)	Entire PAC	N/A	Pre-construction nest surveys may be required
	Protected Activity Centers (PAC)	N/A	Adjacent PAC Areas- No Human Encroachment March 1-August 31	
<i>Northern Goshawk</i>	Active Nest Site <sup>3</sup>	Within 0.5 Miles of Nest Site	N/A	Pre-construction nest surveys may be required
	Active Nest Site	N/A	0.5 Miles- No Human Encroachment March 1-September 15	
<i>Osprey</i>	Active Nest Site <sup>3</sup>	Within 0.25 Miles of Nest Site	N/A	Pre-construction nest surveys may be required
	Active Nest Site	N/A	0.25 Miles- No Human Encroachment April 1-August 31	
<i>Peregrine Falcon</i>	Active Nest Site <sup>3</sup>	Within 0.5 Miles of Nest Site	N/A	Pre-construction nest surveys may be required
	Active Nest Site	N/A	0.5 Miles- No Human Encroachment March 15-July 31	
<i>Prairie Falcon</i>	Active Nest Site <sup>3</sup>	Within 0.5 Miles of Nest Site	N/A	Pre-construction nest surveys may be required
	Active Nest Site	N/A	0.5 Miles- No Human Encroachment March 15-July 15	
<i>Swinson's Hawk</i>	Active Nest Site <sup>3</sup>	Within 0.25 Miles of Nest Site	N/A	Pre-construction nest surveys may be required
	Active Nest Site	N/A	0.25 Miles- No Human Encroachment April 1-July 15	
<i>Other Raptors Not Listed Above</i>	Nesting Habitat	N/A	No Human Encroachment January 1-July 15	Pre-construction nest surveys may be required
	Roost Sites	N/A	No Human Encroachment November 15-April 1	
<i>Burrowing Owl</i>	Active Nest Site	N/A	300 Foot March 1-August 15	N/A
<i>River Otter</i>	Occupied Habitat	N/A	N/A	Minimize disturbance of riparian vegetation and road development within 300 ft. of occupied habitat
<i>Southwest Willow Flycatcher</i>	Active Nest Site	Within 300 Feet of Nest Site	N/A	Pre-construction nest surveys may be required
	Suitable habitat (USFWS minimum patch size definition)		Restrict activities between May 15-Aug 1	Pre-construction nest surveys may be required

Swift-Fox	Den Sites	N/A	0.25 Mile March 15-June 15	Pre-construction survey for den sites may be required
Northern Leopard Frog	Breeding Sites	Within 0.25 Miles of Breeding Site	N/A	N/A
Western Boreal Toad	Breeding Sites	Within 0.5 Miles of Breeding Site	N/A	N/A
Aquatic Species	Gold Medal Water	300 Feet from OHWM	N/A	N/A
	Rainbow Trout	N/A	March 1-June 15	N/A
	Brown Trout	N/A	October 1-May 1	N/A
	Brook Trout	N/A	August 15-May 1	N/A
	Cutthroat Trout	N/A	June 1-September 1	N/A
	Bluehead Sucker	N/A	May 1-July 15	N/A
	Flannelmouth Sucker	N/A	April 1-July 1	N/A
	Roundtail Chub	N/A	May 15-July 15	N/A

<sup>1</sup> Greater and Gunnison sage-grouse lek = any lek active within last 10 years (core area); any lek active within last 5 years (outside core area)

<sup>2</sup> Lesser prairie chicken lek = any lek active within last 3 years

<sup>3</sup> Active Nest Site = any nest that is frequented or occupied by a raptor during the breeding season, or which has been frequented or occupied in any of the five previous breeding seasons

<sup>4</sup> Active Bald Eagle Winter Night Roost = Areas where bald eagles gather and perch overnight, and sometimes during the day in the event of inclement weather.





CHRIS GIUNCHIGLIANI  
Commissioner

*Board of County Commissioners*

CLARK COUNTY GOVERNMENT CENTER  
500 S GRAND CENTRAL PKY  
BOX 551601  
LAS VEGAS NV 89155-1601  
(702) 455-3500 FAX: (702) 383-6041

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LAS VEGAS  
FIELD OFFICE  
Las Vegas, Nevada

February 8, 2011

Ms. Mary Jo Rugwell  
District Manager  
Bureau of Land Management  
4701 N. Torrey Pines  
Las Vegas, NV 89130

Dear Ms. Rugwell:

It is my understanding that over the next few weeks the Department of Interior and Bureau of Land Management (BLM) will be holding several public meetings on the Solar Programmatic Environmental Impact Statement. This huge document lays out how large scale solar energy is proposed to be developed on public lands in six western states: California, Nevada, Utah, Colorado, Arizona and New Mexico. The program planning period covers the next twenty years, so this is a very important decision.

As you probably know, siting of large scale solar projects on BLM land has been very controversial, with several projects in California criticized for having significant impacts on wildlife, wildlife corridors and other natural resources. That's why citizen participation in these public meetings and comments on these plans are so important. We need to vastly improve how Interior is planning for, developing and mitigating for such projects.

I support well-sited, sensitively developed large scale solar energy both on private and public land, but feel this needs to be done right. Below are some comments I would like to bring forward:

1. The BLM's Preferred Alternative designates Solar Energy Zones (SEZs), but also would permit solar development on 22 million more acres on public land. The BLM should be taking the Solar Energy Zones only approach, meaning they should restrict future development of solar on public lands to these zones only. This will help the BLM and developers avoid resource conflicts, litigation, and it would also promote certainty among wildlife management agencies.
2. If there are previously disturbed areas that the EPA or other authorities have identified, these need to be examined as possible Solar Energy Zones.
3. Water is a huge concern, and surrounding water supplies need to be carefully examined to provide guidance on what sorts of technology is preferable in particular sites.

Bureau of Land Management  
February 8, 2011  
Page 2

4. The utmost care should be taken to protect the endangered Desert Tortoise. Relocation efforts undertaken thus far have resulted in unacceptable deaths and the BLM's process from survey to project construction must improve.
5. Cumulative impacts of multiple projects in the same area need to be better examined. Projects do not exist in a vacuum. This includes more complete analysis of needed transmission and construction corridors to complete projects.

Should you have any questions or concerns, please do not hesitate to contact me at (702) 455-3503.

Sincerely,

A handwritten signature in black ink, appearing to read "Chris Giunchigliani". The signature is written in a cursive style with a large, stylized initial "C".

Chris Giunchigliani  
Commissioner

# RIVERSIDE COUNTY

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## PLANNING DEPARTMENT



*Carolyn Syms Luna*  
Director

April 18, 2011

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

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

Dear Sir or Madam:

Riverside County is a recognized leader in the protection of natural communities and endangered species. It developed both the Coachella Valley and Western Riverside Multi Species Habitat Conservation Plans (HCP) and has been implementing them for over ten years. These HCPs balance environmental protection and economic development objectives, while simplifying compliance with endangered species laws.

Riverside County supports renewable energy. Because it is uniquely suited for the location of renewable energy, and particularly solar, Riverside County will bear a disproportionately heavy burden for renewable energy production. For that reason, Riverside County is taking this opportunity to comment on the Draft PEIS, both because of its expertise in these issues and because of the direct impact BLM's action has on Riverside County today and into the future.

Consistent with this leadership role, Riverside County has carefully examined the Draft PEIS, particularly with regard to the Riverside East SEZ, and has the following general comments:

### **WATER RESOURCES**

There is not clear analysis of water resources demand, availability, potential for individual project impact, broader community impact, and quantifiable potential for contamination. The PEIS acknowledges that there could be considerable draw down of groundwater level at various stages of projects and recognizes that there is insufficient information to understand and codify the impacts. Without a clear understanding of the impact on the water resources, it is impossible to assess the impact of the project on people, species, and habitats. There is not a consideration of the potential for increased global temperature and how that would further exacerbate the demand on water resources.

The PEIS states that, for some projects, potable water may need to be trucked to project sites during construction. The impact of the trucking of potable water is not considered in the analysis.

### **SPECIES IMPACTS**

Generally, the evaluation of species impacts is too simplistic. It does not adequately address quality of habitat, biological processes, populations or impacts to connectivity and populations resulting from development. Further, it does not adequately speak to the impact(s) of depletion, redirection, or disruption of water resources on species, habitats, and biological processes.

## **RECREATION**

Riverside County views recreational opportunity as a quality of life, economic, and aesthetic issue. Recreation is an historic use that is imbedded in the patterns of life and memory of Riverside County residents and those from outside of the County who have taken advantage of Riverside County's rich recreational opportunities. While this document discusses impacts to recreation as a result of the siting of projects, it does not clearly address how the impacts to recreation will be mitigated. In Appendix A.2.2.6, it states, "Solar facilities shall not be placed in areas of unique or important recreation resources". A definition of "unique or important recreation resources" is necessary to understand what areas of recreation resources will be avoided. Further, there is not a consideration of lands set aside for mitigation. It should be assumed that some or most of the mitigation lands will be closed or severely limited in potential for recreational use. How will the loss of recreational use of mitigation lands be mitigated? Finally, the PEIS does not adequately address the impact of projects adjacent to recreational areas. To what extent will the large scale change in the overall character of the SEZ discourage recreation use in recreational areas adjacent to the SEZ and how will this be mitigated?

## **DESIGN FEATURES FOR WILDLAND FIRE**

Appendix A.2.2.5 addresses internal fire breaks sufficient to "remove the need for protective responses by the BLM, state, and local fire organizations" resulting from fire from within the facility moving out or from fire from without entering and threatening the facility. First, there is no realistic design that will truly "remove the need". Second, there must be recognition of a reasonable point at which undue threat is avoided and an exorbitant amount of land, which will require mitigation, is saved from being used as a fire break. For these reasons, there must be a provision for fire response.

## **TRANSMISSION**

The document states that additional construction of transmission or road facilities was not assessed because of the availability of an existing transmission line and access to I-10. Capacity on existing transmission facilities is a clear issue. Additional transmission capacity that will be required both within the SEZ and outside of the SEZ should be analyzed.

## **VISUAL RESOURCES**

The evaluation of visual impacts in the PEIS does not include the impact of transmission. To attempt to evaluate visual impacts without including transmission is to only look at half the picture. The visual impact of transmission can have as much and sometimes more impact than the project itself. For that reason, both project-specific transmission and transmission infrastructure must be depicted and evaluated for visual impact. While the PEIS acknowledges that the industrial-look of solar facilities within rural areas cannot be mitigated, the depiction of the potential solar development does not capture the extent of the visual impact, the value and character of the areas impacted, or address the expectation of people who come to the desert intending to see the desert. Both light and glint and glare were mentioned, but they should have been evaluated separately in terms of their visual impacts.

## **SOCIOECONOMICS**

The PEIS evaluation of socioeconomic impacts examines jobs generation based on various solar technologies on BLM land. The encouragement of vast solar development on BLM lands directly impacts private lands, typically under the jurisdiction of the county, in the same general area. While this impact is not directly relevant to the PEIS, it is most certainly relevant to Riverside County and to the desert communities. The facilitation of renewable energy projects on BLM land directly impacts adjacent private land because it is common for additional land to be necessary to supplement BLM land for project siting and/or transmission. Secondly, because of the need for large areas of mitigation land and for mitigation for specific species and

habitats, there almost assuredly will be an impact to private lands as a result of the need to meet mitigation requirements. These two circumstances alone have the potential for severely impacting Riverside County and its future planning. Private lands that might have had a multitude of potential opportunities for economic development may simply be sitting for solar plants or the stringing of transmission lines. As solar communities develop, will they go the way of the mining towns of the east once a better technology becomes more cost effective? Without proper planning, will essential services be precluded because there is not private land on which to build hospitals, fire stations, schools, or revenue generating businesses? What will be the long term impact on jobs and the economy? What will be the REAL socioeconomic cost of the renewable energy anticipated under this PEIS?

Thank you for the opportunity to provide comment on the Draft Solar Programmatic Environmental Impact Statement (PEIS) for Solar Energy Development in Six Southwestern States. If you have any questions, please feel free to contact Gail Barton, Principal Planner, at 951.955.6637.

Sincerely,

PLANNING DEPARTMENT



Carolyn Syms Luna  
Director

GB

**NREL Comments on Appendix A of the Draft Programmatic Environmental Impact Statement (PEIS) for Solar Energy Development in Six Southwestern States (DES 10-59; DOE/EIS-0403), prepared by BLM and DOE, December 2010. Comments Prepared April 2011.**

Appendix A of the Programmatic EIS presents current and proposed BLM solar energy development policies and design features.

In general, it is recognized that a programmatic EIS forms a foundation from which further NEPA analyses can be tiered and streamlined. As such, much of the proposed project siting information as well as proposed mitigation measures are vague in content. Such an approach can lead to various interpretations as to the intent and application of measures to avoid, minimize, or mitigate environmental impact. The purpose of these comments is to highlight areas where greater detail is requested whenever additional site-specific NEPA reviews are conducted.

### **GENERAL COMMENTS**

On a broad note, it is requested that solar planners and designers collaborate to design systems which can be installed on existing topography, with existing vegetation, without totally removing vegetation, and grading the soil.

It is noted that the Solar EIS website has an interactive GIS-based Environmental Mapper feature, and that several important environmental features are mapped as layers. However, it would be useful if additional environmental features were included as layers on the map, to aid in site selection and streamline environmental review processes. Additional features could include jurisdictional wetlands, floodplains, Audubon Important Bird Areas (IBAs), wilderness or roadless areas, threatened and endangered species habitat in addition to the three currently shown on the map, local songbird and raptor migration routes, important archaeological or cultural resources, national, state, or local parks, wildlife refuges, etc. Local stakeholders may be able to provide additional detail regarding other places that warrant conservation, then project siting could be done in a thoughtful way that is a win/win for all involved. Other sites such as Brownfield sites or closed landfills could also be mapped.

### **SPECIFIC COMMENTS**

It is recognized that project-specific mitigation plans would be developed base on site-specific information (page A-35). The comments provided below offer subject matter recommendations to be addressed in further NEPA reviews.

- As discussed on page A-31, the PEIS mentions that '*only limited additional NEPA analysis may be necessary because of the depth of the analysis contained in the PEIS*'. In fact, many of the proposed design features, mitigation measures, monitoring plans, etc., are understandably broad in nature as presented in the PEIS, and we would expect to see greater detail presented in further NEPA analyses. Topics to be addressed in greater detail include, but are not limited to the following:
  - Adaptive management strategies (page A-30)



- Methods for evaluating existing values of designated areas and lands with wilderness characteristics, and details regarding how those values will be protected (page A-37)
  - Specifics regarding any vegetation plans to prevent establishment of non-native invasive species (page A-38)
  - A detailed Ecological Resources Mitigation and Monitoring Plan (page A-62)
  - And similar issues
- As discussed on page A-37, the PEIS indicates that *'Solar facilities shall be located and designed to minimize impacts on specially designated areas and lands with wilderness characteristics'* It is recommended that BLM strengthen this language to require the developer to site projects in such a way to *'avoid'* specially designated areas and lands with wilderness characteristics.
  - In *'Design Features for Wild Horses and Burros'* (page A-38), the PEIS states in the first bullet that developer activities will be coordinated with stakeholders to ensure that impacts to wild horses and burros would be minimized, and would address issues such as access to water sources. We assume this means that water sources for wild horses and burros will remain available to these animals. However, the second bullet indicates that *'Fences shall be built to exclude wild horses and burros from all project facilities, including all water sites built for the development of facilities and roadways'*. The Final PEIS and further NEPA evaluations should clearly describe the sources for water used for the development of facilities and roadways, and methods to ensure that existing sources of water for wild horses, burros, and other wildlife will not be diminished.
  - Text on page A-40 discusses that *'the footprint of disturbed areas... shall be minimized'*. It should be noted that the word "minimized" can be interpreted differently among developers, construction workers, regulatory agencies, and other stakeholders. It is recommended that BLM take an active role in working with developers on a site-specific basis to minimize the footprint of disturbed areas. Issues that could be considered include carpooling to minimize the area needed to park cars, consolidating or staging construction laydown areas, using previously disturbed areas as much as possible, etc.
  - Text on page A-40 discusses that *'Project structures and facilities should be sited to avoid disturbance in areas with existing biological soil crusts to the extent possible'* It is recommended that site-specific EAs or EISs clearly require that a qualified person(s) is required for surveying the site, identifying areas having intact biological soil crusts, delineating those areas, and ensuring that construction personnel are educated regarding those areas and understand how to avoid them.
  - Text on page A-41 indicates Project areas shall be replanted with native vegetation at spaced intervals to the extent possible to break up areas of exposed soil and reduce soil loss by wind erosion. It is unclear what is meant by "spaced intervals". A few things are worth noting. Native vegetation at many western sites is likely to be adapted to full sun conditions. First, depending on the type of facility, areas that would potentially be re-seeded may have resulting partial shade conditions following construction, and this would necessitate a modified seed mix (this also applies to the second bullet on page A-68 which discusses revegetation). Second, if project installation could leave some intact strips of native vegetation, without grading and blading the area, those plants could provide propagules to help revegetate adjacent areas over time (especially areas



receiving greater sunlight, or from species in the intact strip that are more tolerant of shade conditions).

- Text on page A-41 indicates that adequate space (i.e., setbacks) between solar facilities and natural washes is to be maintained to preserve their hydrological function and provide a buffer for flood control. It is assumed that BLM will work closely with developers and planners on a site-specific basis to determine the size of setbacks.
- Text on page A-42 indicates that '*...only land that will be actively under construction in the near term (e.g., within the next 6 to 12 months) should be cleared of vegetation.*' This statement makes it appear as a predetermined conclusion that the land will be cleared of vegetation. It is requested that developers and planners be encouraged to design solar installations in such a way as to work with existing topography and landscaping, and to avoid totally clearing vegetation and scraping the soil. Such best management practices would reduce habitat destruction and fragmentation, reduce soil erosion, and minimize weed invasion.
- Text on page A-42 indicates that '*The speed of vehicles and equipment on unpaved surfaces shall be controlled to reduce dust emissions.*' It is recommended that there should also be a goal of controlling vehicle and equipment speed to avoid collisions with wildlife.
- Text on page A-43 indicates that '*Routine site inspections shall be conducted to assess the effectiveness and maintenance requirements for erosion and sediment control systems.*' It is recommended that site inspections also be documented, and that adaptive management techniques be incorporated into the plan to facilitate continued improvement. The incorporation of adaptive management protocols also applies to mitigation plans described in Table A.2-1 on page A-35.
- Text on page A-43 indicates that '*A spill prevention plan to identify sources, locations, and quantities of potential chemical releases...and define response measures...to reduce the potential for soil contamination.*' It should be noted that the response measures should also incorporate methods for minimizing surface runoff of the contaminants to nearby waterways or drainages.
- Text on page A-43 indicates that '*Ground disturbance from construction-related activities, such as vehicle and foot traffic, shall avoid areas with intact biological soil crusts to the extent possible.*' See comments for page A-40.
- Text on page A-43 indicates that '*Electrical lines from solar collectors shall be buried along existing features...*' It is recommended that all electrical lines be buried in conduit to minimize future human/wildlife conflicts as a result of animals chewing through electrical wires.
- Text on page A-44 indicates '*Erosion-control structures (e.g., rock lining or apron) shall be added at culvert outlets...*' It is recommended that such structures be buried and/or vegetated to enhance wildlife habitat.
- Text on page A-44 indicates that erosion matting, including synthetic mats or blankets should be used. It is recommended that synthetic mats or blankets be replaced by

matting or blankets composed of jute and natural fiber. The synthetic mats or blankets pose a risk to birds and snakes that become tangled and cannot escape; the natural fiber is more flexible. The use of natural fiber matting or blankets is now required by many government agencies.

- Text on page A-45 indicates that 'Native plant communities in disturbed areas shall be restored by natural revegetation or by seeding and transplanting...' It is unclear how natural revegetation would be monitored, as this could take years to accomplish. Also, on page A-59, the text indicates that '*use of native plant species will minimize the need to water the vegetation, because native species are already adapted to the local climate and moisture regime of the area.*' It should be noted that seeding and/or transplanting using native plants will have a greater chance of success if supplemental water is provided for at least the first two years, until vegetation becomes established.
- Text on page A-48 (and elsewhere) indicates the use of "retention basins" to capture runoff. It should be noted that, in Colorado, stormwater runoff can be "detained" or "slowed down", but not "retained". It is recommended that water laws in each of the SEZ states be reviewed to determine if retention basins are allowed.
- Text on page A-52 (and elsewhere) indicates that '*Temporary impoundments for storing drilling fluids and cuttings shall be lined to minimize the infiltration of runoff into groundwater or surface water.*' It is also recommended that any impoundments for these purposes, for concrete washout, or any other purpose be fenced at night using temporary fencing, or, as discussed on page A-67: 'Open trenches could also entrap smaller animals; therefore, escape ramps shall be installed along open trench segments' to avoid entrapment of wildlife, which could lead to drowning. Please note that escape ramps should include cross-pieces to facilitate a foothold for animals to escape.
- Text on page A-52 (and elsewhere) discusses avoidance of washing soil off vehicles and other equipment in streams, washes, and wetlands, to avoid increasing sediment load. It is further recommended that high-power washing of soil/mud, etc. be done to avoid transfer of aquatic nuisance species (including *Chytrid* fungus [which is toxic to frogs], as well as invasive mussels and invasive aquatic plants), between water bodies.
- Text on page A-57 indicates 'Fences shall be built (as practicable) to exclude livestock and wildlife from all project facilities, including all water sites.' While it is recognized that fencing may be a desirable option, and can be done quickly, we request that BLM, along with the developers and planners develop other options that can retain some of the developed area as potential wildlife habitat. For example, we are aware of one site that was constructed by leaving shrubbery in place. It was fenced to allow smaller mammals to enter at ground level, but excluded larger herbivores and browsers that could destroy the shrubbery. By using practices such as burying electrical lines in conduit, revegetating using native or adapted plants (adapted to the revised land conditions), providing some areas of water for wildlife, and modified or reduced fencing, large expanses of land that may have been removed as wildlife habitat may subsequently be designed to not only perform its solar functions, but also to provide a certain level of usable habitat (shade, shelter, browse) by local wildlife. Such practices can utilize species having a greater potential to outcompete weeds, thereby reducing long-term O&M costs involved in weed management. Such thoughtful designs will serve to

streamline future environmental reviews, and be more acceptable to the public, than removing large expanses of land and habitat for solar development.

- Text on page A-57 indicates that '*Any necessary stream crossings shall be designed to provide in-stream conditions that allow for and maintain uninterrupted movement and safe passage of fish during all project periods.*' It is also recommended, if stream crossings are required, that care be taken to minimize removal of deadfall or overhanging vegetation which provides shelter and shading to aquatic organisms. In addition, see comments on page A-52 regarding transfer of aquatic nuisance species between water bodies.
- Text on page A-59 indicates that '*Activities shall be timed to avoid, minimize, or mitigate impacts on wildlife.*' While it is recognized that this will vary on a site-by-site basis, the text only mentions winter ranges and breeding birds. It is recommended that this discussion also include known calving areas, migration corridors, and known habitat for threatened, endangered, or special status species (including federally listed, State listed, and those identified by state Natural Heritage Programs). This information may occur elsewhere in this PEIS, but should be consolidated and summarized in this appendix to facilitate reader understanding.
- Text on page A-59 indicates that '*noise reduction devices shall be employed to minimize the impacts on wildlife and special status species populations.*' It is further recommended that cars, trucks, and construction equipment not be allowed to sit onsite idling, as this would not only contribute to air pollution, but also will produce noise.
- Text on page A-62 indicates that '*To reduce the risk of non-native and nuisance aquatic species introductions, equipment used in surface water should be decontaminated as appropriate, especially equipment used to convey water (i.e., pumps).*' It is requested that this sentence be modified to also include the risk of transferring toxic components (i.e., *Chytrid* fungus) between waterbodies.
- Text on page A-64 indicates that '*A Fire Management and Protection Plan shall be developed to implement measures that minimize the potential for a human-caused fire...*' This plan should include provisions to prohibit the tossing of cigarette butts to the ground, or driving over tall grass, where engine components or sparks may start a fire.
- Text on page A-65 indicates that '*Meteorological towers and solar sensors shall be located to avoid sensitive habitats or areas where wildlife (e.g., sage-grouse) is known to be sensitive to human activities; applicable land use plans or best available information and science shall be referred to in order to determine avoidance distances. Installation of these components shall be scheduled to avoid disrupting wildlife reproductive activities or migratory or other important behaviors. Guy wires on meteorological towers shall be avoided. If guy wires are necessary, permanent markers (bird flight diverters) shall be attached to them to increase their visibility.*' We are pleased to see the use of bird flight diverters recommended. Please note that flight diverters meant to deter sage grouse are different from those that are likely visible to other species, and therefore, more than one kind of diverter may need to be installed on guy wires. It is further recommended that discussions be held with the local FWS office, or natural resource agencies or groups, prior to facility siting, to determine if there are local leks, bird migration routes, large water bodies known to attract birds, or known raptor feeding and

roosting areas in the proposed facility location. These features should be considered in accordance with APLIC guidelines to further minimize the potential for collision impacts to birds, including raptors, water birds, and sage grouse.

- 
- The text on page A-66 (and elsewhere) states that wildlife and their habitats (as well as other resources) shall be protected to the extent practicable during construction activities. Such statements can be interpreted in many different ways by construction workers, planners, regulatory agencies, and other stakeholders. It is recommended that BLM be more prescriptive in “requiring” that these resources be protected, rather than seemingly leaving it up to the developer to decide what is practicable.
- Text on page A-66 indicates that *‘all areas to be disturbed shall be surveyed by qualified biologists using approved survey techniques or established species-specific survey protocols to determine the presence of special status species in the project area.’* Given the current potential threat of the expansion of White Nose Syndrome, it is recommended that qualified biologists also survey for bat hibernacula and maternity roosts.
- The text on page A-66 indicates that *‘disturbed areas shall be ... reseeded with seeds from low-stature plant species collected from the immediate vicinity.’* Such activities are extremely time consuming, and must be done at the appropriate time of year. Please ensure that any revegetation plans developed accommodate this activity, or plan to purchase seeds from local sources.
- The text on page A-67 indicates that *‘Explosives shall be used only within specified times and at specified distances from sensitive wildlife or surface waters...’* The text should define what is meant by sensitive wildlife (nesting birds, nesting/roosting raptors, sage grouse leks or nests, other species) and specified times of the year (e.g., outside the nesting season, calving season, etc.?)
- Text on page A-67 indicates that *‘When possible, any reptile or amphibian species found in harm’s way shall be relocated away from the activity.’* The phrase “when possible” can lead to different interpretations. It is recommended that the text be modified to indicate that *‘any reptile, amphibian, or other wildlife species found in harm’s way shall be relocated away from the activity’.*
- Text on page A-68 states *‘Where revegetation is accomplished, fire breaks are required, such that the vegetated areas would not result in an increased fire hazard. It is also recommended that seed mixes for revegetation can be specified using plants retaining little biomass, so if a fire does occur, it would move through the area quickly.’*
- Text on page a-70 discusses bonding to cover the full cost of vegetation reestablishment. It is recommended that the bonding also provide enough funding to allow for adaptive management which allows for incorporation of lessons learned from monitoring data, re-contouring the land, supplemental watering, etc.
- Text on page A-81 states *‘Locating facilities near visually prominent landscape features 1 (e.g., knobs and waterfalls) that naturally draw an observer’s attention shall be avoided.’* Please note that care should also be taken to avoid knobs and ridges, as these are frequently used by raptors for migration and/or hunting, due to thermals.

Informal conversations with local natural resource subject matter experts can help determine if local ridges are known to be used in this way. Slight modifications in siting of facilities near these features can help avoid both bird/raptor and visual impacts.

- Second to last bullet page a-83 discusses the use of monopole vs. lattice structures relating to visual impacts. It is recommended that developer collaboration occur among individuals designing features to reduce visual impacts and features to reduce impacts to birds and wildlife. For example, monopole towers typically are built without guy wires, thereby avoiding collision impacts to birds. Lattice towers can provide numerous perching areas for raptors and ravens, thereby increasing predation risk on wildlife.
- The text on page A-83 discusses elimination of glint and glare effects to roadway users, nearby residences, commercial areas, or other highly sensitive viewing locations from solar facilities. It should be noted that recent research shows that large expanses of solar panels can mimic water bodies and lure aquatic insects to their death, resulting in reproduction failure and local population level effects. This is important, as aquatic insects form the base of aquatic food chains. One novel and simple solution is to incorporate white borders on the panels. This phenomenon and recommended solutions can be found in a Discovery News article <http://news.discovery.com/animals/solar-panels-insects.html>, and an article from Michigan State News <http://news.msu.edu/story/7908/>.
- The text on page A-98 discusses avoidance of rock art (panels of petroglyphs and/or pictographs) whenever possible. It is recommended that BLM strengthen this language to *require* the developer to site projects in such a way to *avoid* rock art areas.

April 30, 2011

To Whom It May Concern:

I am absolutely opposed to the Solar Energy projects and their terrible environmental impacts as described in detail in the PEIS (Solar Energy Draft Programmatic PEIS).

Unknown to the public, these solar projects will remove many wild horses and burros from their rightful lands. They will also cover 9 million acres of our public lands with solar panels. These are our public lands being given to corporations!

The PEIS does not adequately address or find suitable mitigations for the vast water grab that will occur, should these projects go forward. Again, the public has little knowledge that the thermo solar projects will reduce little available water resources to nothing.

How ridiculous is it to deprive ourselves, our public lands and our wildlife of life-giving water and vast underground aquifers in order to produce a few megawatts of electricity!!!

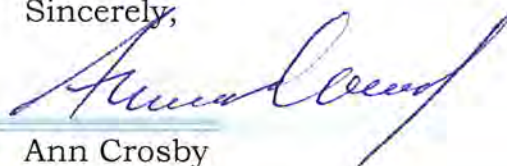
The alternatives put forward in the PEIS do not adequately solve any of these issues: the removal of wild horses and burros, the unconscionable land and water grab by these projects, and the rendering of our wildlands uninhabitable once the projects have removed all water resources.

All these terrible environmental impacts could be completely avoided by installing solar panels close to where electricity is needed. Use the rooftops of the millions of roofs in cities and towns instead!!

In conclusion, I am absolutely opposed to the Solar Energy projects and their terrible environmental impacts as described in detail in the PEIS because they will remove wild horses and burros from their rightful lands, they will deplete our fragile water resources, thus making our wildlands uninhabitable for wildlife and because all this could be easily solved by using rooftops to generate solar energy instead.

Please include my comments on the PEIS for the record.

Sincerely,



Ann Crosby

734 San Fernando

Santa Barbara, CA 93111



April 8, 2011  
P. O. Box 84  
Conejos, CO 81120

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

Dear Sirs:

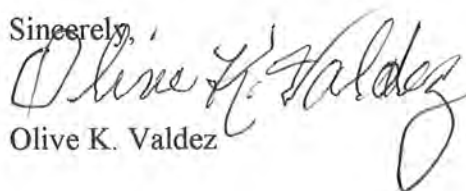
My husband and I strongly support the proposed BLM Southeast Antonito Solar Zone proposed in Conejos County, Colorado.

Our property lies just Southwest of the BLM land that has been designated for the solar zone. We are glad to support the idea of clean, sustainable energy. We are also aware of the potential for other support facilities that could be established to support the solar operation.

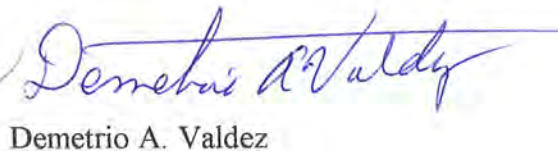
We own a gravel pit and would certainly hope to supply the gravel you would need. There might be a possibility that we could lease you water if needed.

My husband made the notable quote of "A jackrabbit would need to pack a lunch on a dry year to cross this land." Needless to say, beneficial use of this land would be a wonderful thing and would provide jobs for our poorest county in the state.

Sincerely,



Olive K. Valdez



Demetrio A. Valdez



April 13, 2011  
Antonito, CO 81120

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

We, the undersigned, are fully in support of the proposed Southeast Antonito Solar Zone in Conejos County, Colorado. We desperately need jobs in our area and are thrilled at the prospect of clean, sustainable jobs coming to Antonito.

We know that clean energy is the way of the future and we want to help it happen.

Sincerely,

Joseph L. Valdez  
Dora P. Duran

Preyedes Sandoval  
Javier Madrid  
Francisco Valdez  
Nasario Madrid  
Uchii Bleg  
Peters Blum  
Grandelani Atencio  
Kris Duran

April 8, 2011  
P. O. Box 84  
Conejos, CO 81120

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

Dear Sirs:

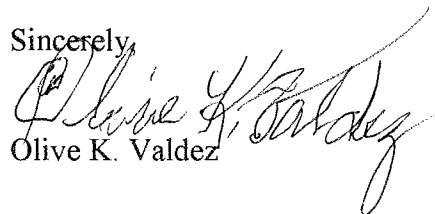
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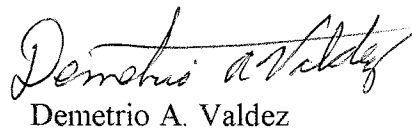
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Sincerely,

  
Olive K. Valdez

  
Demetrio A. Valdez

April 7, 2011  
Antonito, CO 81120

Solar Energy PEIS  
Argonne National Laboratory  
9700 S. Cass Ave., EVS/240  
Argonne, ILL 60439

We, the undersigned, are residents of Conejos County in Colorado. We are wholeheartedly in favor of the BLM proposed Solar Zone proposed for Southeast of Antonito, Colorado.

Our county is the poorest in Colorado. We desperately need jobs for ourselves and our children. Clean energy as produced by the Solar Zone would grant us some economic relief, while providing clean energy for surrounding areas.

You can contact us by informing Olive Valdez at Valdezgravel  
@AOL.com.

Sincerely,

April 29, 2011

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

Attention: Karen Smith

Subject: Southern California Edison Company comments on the Draft Solar Programmatic Environmental Impact Statement

To the Solar PEIS Team:

Southern California Edison (SCE) takes this opportunity to provide comments on the draft Solar Programmatic Environmental Impact Statement (Solar PEIS) released by the Bureau of Land Management (BLM) and the Department of Energy (DOE) in December 2010. SCE is an investor-owned public utility providing electric service to about four million customers within our 50,000 square mile service territory throughout central and southern California. We appreciate the large amount of work involved in data collection, compilation, review, and assessment that the Solar PEIS represents and commend the team of professionals at Argonne National Laboratory for their effort. As could be expected with an effort to capture and assess all relevant issues for the construction of such a complex system over a broad geographic area (and under a great variety of conditions), there are opportunities to miss or under-evaluate issues. SCE provides these comments as constructive recommendations for improvements on specific issues of importance to our utility operations. We raise these issues because they are important to SCE as well as to the national and state goals for renewable energy development. Resolving these issues in the Solar PEIS will further our mutual goals of supporting the development of cost effective generation and transmission of renewable electricity to electric consumers in a safe, reliable, and effective manner.

California's renewable energy and climate change goals are among the most ambitious in the nation. In support of these goals, SCE procures more energy from renewable resources than any other utility in the U.S. In 2009, SCE purchased nearly 80% of all U.S. solar generation. Despite aggressive procurement, challenges to meeting the state's renewable energy goals remain. These challenges include permitting and siting renewable energy projects and related transmission facilities, two areas the Solar PEIS seeks to address. SCE supports the administration's efforts to streamline the approval of solar energy project applications, and the necessary transmission system infrastructure to support such generation, to facilitate environmentally responsible utility-scale solar energy development in a timely fashion.

The BLM issued Instruction Memorandum (IM) No. 2011-061 on February 7, 2011. The IM provides updated guidance on the review of right-of-way applications for solar development on public lands administered by the BLM, and specifies pre-application requirements and screening criteria to assist the BLM in identifying and prioritizing those applications that have the fewest resource conflicts and the greatest likelihood of success in the permitting process. SCE applauds these efforts. As noted in IM No. 2011-061, the screening and prioritization process provides an opportunity to “direct development away from lands with high conflict or sensitive resource values and towards low conflict areas such as previously disturbed sites, areas adjacent to previously disturbed or developed sites, and locations that minimize construction of new roads and / or transmission lines.”

The Solar PEIS preferred alternative identifies solar energy zones (SEZs) in which solar energy development is explicitly encouraged, and further allows for solar energy development outside the SEZs in areas not prohibited or excluded by policy, making more than 21 million acres available across a six-state area, with almost 2 million acres available in California. In order to ensure that development is directed to lands in a manner consistent with IM No. 2011-061, the BLM should ensure that areas designated for SEZs, or areas otherwise made available for solar energy development, are informed by the science-based landscape analysis of natural and cultural resources identified and mapped in the Desert Renewable Energy Conservation Plan (DRECP) that is being developed by the federal government, the State of California, and other key stakeholders.

## **GENERAL COMMENTS**

SCE finds that the scope of the Solar PEIS is too narrow in many respects; e.g., it does not include the impacts of the needed changes in the southwest transmission grid, of which the SCE system is an integral part, which would allow for the generation of up to 24,000 MW on BLM-administered lands. The decision to amend land use plans to facilitate permitting of solar energy projects should include, at a minimum, the planning and approval of needed transmission infrastructure beyond the interconnection of proposed renewable generation on BLM-administered lands to the existing transmission network. The corridors presently designated do not and cannot accommodate the volume of megawatts identified in the draft Solar PEIS that must be moved to electric customers. BLM and DOE should take the opportunity in the solar PEIS to critically look at what changes must be made in the transmission grid, and evaluate the impact of those changes on BLM lands.

## **SPECIFIC COMMENTS**

SCE has identified three areas of concern in the draft Solar PEIS: 1) inadequate consideration of transmission beyond the generation interconnections associated with each project; 2) land use issues, especially as they pertain to the regional collection and transmission of energy and the constant need to upgrade existing infrastructure and provide new capacity for energy transmission; and 3) proposed programmatic mitigation measures. In the following paragraphs SCE explains in greater detail, and provides specific references to text in the draft Solar PEIS, where these issues should be addressed.

### **Transmission Issues**

SCE, together with other energy and transmission providers, is involved in regional planning for improvement of the southwest transmission grid. We conduct long-range planning as well as

respond to specific interconnection requests, and coordinate these efforts with the Western Electricity Coordinating Council (WECC), the regional oversight organization controlling grid construction, operation, maintenance, and emergency response. If the BLM decides to allow for unprecedented amounts of new solar energy generation, as proposed in the Solar PEIS, this decision will have long-ranging impacts on the western transmission grid and specifically on SCE's transmission infrastructure. Specific concerns include:

- Planning efforts by the WECC and other regional groups are mentioned in the Solar PEIS but only by inclusion in a list. The Solar PEIS does not demonstrate coordination with relevant regional efforts, including but not limited to the California Renewable Energy Transmission Initiative (RETI) with its designation of competitive renewable energy zones (CREZ) and WECC transmission planning. SCE suggests that the BLM work closely with other regional planning efforts of state and local government as well as other agencies of the Federal and state government, such as the California Energy Commission and the California Independent System Operator, to demonstrate in the Solar PEIS how the BLM decision is connected to and responding to other regional planning efforts.
- The draft Solar PEIS does not analyze potential impacts on the transmission grid beyond the interconnection of proposed renewable generation. The document assumes that individual downstream upgrades would be attributed to specific projects and therefore covered under a project-specific environmental analysis. Unfortunately, this approach does not foster the development of an integrated and efficient transmission system that is capable of managing future energy demands both from generation and to customers. SCE recommends that the BLM consider downstream upgrades, and general additions to the transmission grid needed to accommodate solar energy generated on BLM lands, as part of the decision to amend land use plans to allow for solar energy development.
- The draft Solar PEIS seems to assume that a solar project is viable if it is located within a specific distance of any transmission line, regardless of its voltage or available capacity, and even considers an empty corridor, designated for transmission but not currently occupied, sufficient for that project. This fails to recognize the need for sufficient transmission lines and substations to accommodate all the solar energy the Solar PEIS's reasonably foreseeable development scenarios predict. Also, the draft Solar PEIS does not acknowledge the need to add corridors or expand existing corridors, and does not take into consideration the cumulative impact of multiple downstream transmission infrastructure changes to accommodate new solar generation. The BLM should include the needed expansion of transmission in the land management plan revisions, designating additional corridors in coordination with regional planning conducted by WECC and others.
- The solar projects planned for the three SEZs identified in the Solar PEIS for SCE's service territory would create an unprecedented expansion to SCE's current transmission capacity should all that generation seek to interconnect with SCE's transmission system. The draft Solar PEIS anticipates that the SEZs could ultimately produce the megawatts identified in the table below:

SEZ	Maximum Output (Tables 9.2-4, 9.3-4, 9.4-4)	Reasonably Foreseeable Development (Table 2.4-1, pro-rated among 4 SEZs in CA)
Pisgah	2,129 MW – 3,832 MW	1,095 MW
Iron Mountain	9,469 MW – 17,043 MW	4,842 MW
Riverside East	18,035 MW – 32,463 MW	9,222 MW

Using the above Reasonably Foreseeable Development amounts for Iron Mountain and Riverside East, and the maximum build out in the Pisgah SEZ, SCE estimates that roughly 955 miles of new 500 kV and 125 miles of new 220 kV transmission lines will need to be sited, licensed and built. (Note that SCE used the maximum output amount of potentially available generation in the Pisgah area to take into consider our projects for the delivery of energy from renewable energy projects in the California Independent System Operator (CAISO) queue that would be delivered through the Pisgah area, likely through SCE’s Pisgah Substation.) In addition, two 500/220 kV substations, three 500 kV switchyards and two 220 kV switchyards also will be required, along with numerous other existing facility expansions and upgrades. A list of the needed new transmission lines and substations is included on Attachment A. A map showing the potential location of these infrastructure improvements is provided as Attachment B. The information on these attachments should be considered preliminary and subject to further SCE and regulatory approvals and is based on the generic locations of the three proposed SEZs in SCE’s service territory and the reasonable potential capacity of those SEZs as estimated by the BLM. The amount of generation that is actually approved through the CAISO process and the number and location of transmission lines and substations approved by the California Public Utilities Commission (CPUC) will dictate which facilities on Attachment A will be constructed. Again, the BLM should include the needed expansion of transmission in the land management plan revisions, and designate additional corridors for these potential transmission lines in coordination with regional planning conducted by WECC and others.

- The Solar PEIS creates very concentrated pockets of generation through the development of each SEZ. With numerous solar projects attempting to interconnect to major substations, a physical constraint would be created for the access routes from the generators to the substations. SCE proposes that the BLM develop plans to deal with this physical congestion around substations. For example, generators could be required to work together to develop collector stations, share gen-ties, or investigate with Federal Energy Regulatory Commission (FERC), CAISO, and SCE the potential for constructing such collector stations as a part of the SCE transmission grid. This would allow for more efficient transmission from the generators to the SCE grid.

**Land Use Issues**

Land use issue analysis in the draft Solar PEIS lacks a complete treatment of all aspects of the siting process. The Solar PEIS primarily focuses on the BLM lands potentially available for development of solar energy facilities, but barely touches upon gen-tie lines (local, generator-developed transmission lines used to connect energy generation facilities with the regional transmission grid), and completely ignores land use issues for regional transmission lines. Even



more limiting is the concentration only on SEZ areas within the BLM-administered public lands. This provides only a partial solution to the objective of setting up a streamlined approval process for renewable energy development because it does not address the large amounts of non-public lands that would be needed to establish new (complete) regional transmission line capacity, especially where no lines or corridors currently exist. The DOE parts of the Solar PEIS are developed in a more generic fashion, so even though they consider lands outside of those administered by the BLM, the usefulness of the assessment of environmental impacts has limited value. Several other issues should be evaluated in more detail, as described below.

- **Energy Corridor Designation** (Section 1.6.2.1) describes a previous collaborative effort between the BLM and the DOE to prepare the West-wide Energy Corridor PEIS for establishing energy transmission corridors in 11 western states. Only limited discussion is provided for how the Solar PEIS will integrate with the West-wide PEIS. The Solar PEIS should provide specific language to help establish a more detailed framework for the applicability of each PEIS toward the planning and development of new transmission capacity.
- **BLM Action Alternatives** (Section 2.2.2) discusses proposed updates to the BLM standard program of administration and authorization policies. These would amend current ROW applications processes, but similar consideration is not extended to transmission lines. Specific transmission line policy changes (both for regional and gen-tie lines), should be incorporated into the BLM Proposed Solar Energy Program provided in Appendix A (Section A.2) that would address cooperative development and sharing of gen-tie transmission lines.
- **SEZ Program Alternative** (Section 2.2.2.3) describes the SEZ lands designated in the six-state program area, including previously designated energy corridors. It appears that the energy corridor lands which transect the SEZ areas in California are included in the 339,090 acres counted as SEZ lands. This is further indication that transmission lines were not considered at the same level of concern as solar energy development projects. The Solar PEIS should incorporate more definitive corridor locations and requirements for both regional and inter-connect transmission lines into the establishment of programmatic processes through the Solar PEIS assessment.
- **DOE's Proposed Action** (Section 2.3.2) includes the development of programmatic environmental guidance, recommended environmental practices, and mitigation measures as "future" activities by DOE, rather than providing them in the Solar PEIS to allow for review and understanding. The intent of these actions is to aid in the analysis and selection of projects the DOE would support. However, deferring them to the future weakens the programmatic effectiveness of the Solar PEIS, and does not support the integration of regional transmission lines into the environmental review process, because no clear picture of what will be included in the guidance, recommended practice, or mitigation is provided. The DOE should develop and include in the final Solar PEIS its proposed environmental guidance, recommended environmental practices, and mitigation measures. These policies should address, whether directly or through coordination with the West-wide Energy Corridor PEIS, how the planning and development of new transmission lines and acquisition of rights-of-way will be integrated into the solar development process.

### **Mitigation Measure Issues**

SCE notes that BLM proposes to minimize the use of permanent access roads. SCE, in order to meet CAISO and WECC reliability criteria, needs a permanent road to each structure, substation, and other facility associated with a transmission line. These roads are needed to allow for emergency repairs as well as for routine inspection and maintenance. The BLM should recognize the need for permanent access roads to each structure in its Solar PEIS and revise mitigation measures to reduce their impact in sensitive habitats rather than prohibiting their construction and use.

The BLM also proposes to require the use of helicopter construction methods in some areas. In addition to the concern for roads, mentioned above, helicopter construction is impractical for double-circuit 500 kV construction and for construction of some heavy angle structures for certain single-circuit 500 kV lattice towers. Helicopter construction is impractical because the smallest/lightest elements from which the double circuit 500 kV tower can reasonably be constructed on site are too heavy for even heavy-lift helicopters. Additionally, helicopter construction has its own set of specific environmental impacts that need to be considered, as well as other drawbacks to the cost effective and efficient construction of facilities. The BLM should revise this mitigation measure to limit the helicopter construction requirement to very few sensitive and/or limited access areas, and recognize the need for permanent access roads to all accessible structures even if this method is used for construction at a few structure locations.

### **CONCLUSION**

SCE appreciates the opportunity to identify areas for improvement in the Solar PEIS. SCE sees the creation of SEZs as an important part of long term planning for transmission and generation infrastructure in California. We encourage the DOE and BLM to include the CPUC in its planning process as the CPUC will play a significant role in how California investor-owned utilities plan for the purchase and integration of renewable generation, and where SCE will be authorized to construct new transmission infrastructure. SCE also recommends that the BLM contact the CAISO for information regarding the interconnection of solar generation facilities to the transmission network of CPUC regulated utilities, such as SCE.

SCE looks forward to continuing our discussion relative to the transmission planning and interconnection issues identified in this response letter. We would welcome the opportunity to discuss our concerns and issues with BLM and DOE after SCE's comments have been reviewed. I may be contacted at 626.302.4459.

Sincerely,



Nino Mascolo  
Manager, Government Land and Forestry

## ATTACHMENT A

### SCE Transmission Line and Substation/Switchyard Upgrades Triggered by Generation Assumed in the Solar PEIS

#### **Pisgah SEZ**

- Eldorado-Pisgah 500 kV 110 miles
- Kramer-Llano 500 kV 48 miles
- Kramer-Pisgah 500 kV 75 miles
- Eldorado-Primm 220 kV 27 miles
- Coolwater-Jasper-Lugo kV 220 kV 64 miles
- Coolwater-Jasper No. 2 220 kV 34 miles
- Ivanpah-Nipton 220 kV 19 miles
- Llano 500 kV Switching Station
- Eldorado 220 kV Switchyard
- Nipton 500/220 kV Substation
- Homer 500 kV Switchyard
- Primm 220 kV Switchyard

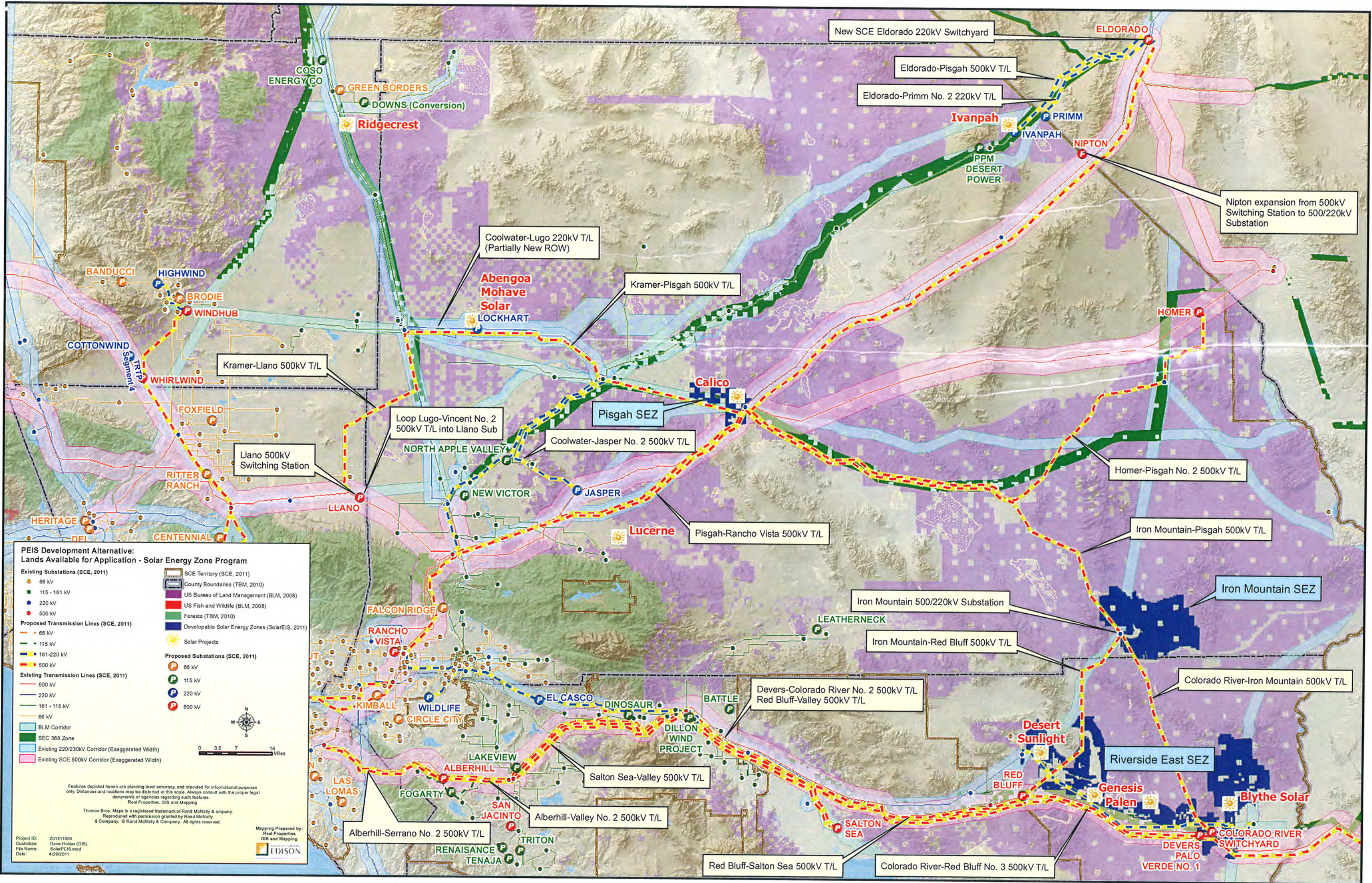
#### **Riverside East SEZ**

- Alberhill-Valley No. 2 500 kV 15 miles
- Alberhill-Serrano No. 2 500 kV 26 miles
- Colorado River-Red Bluff No. 3 500 kV 35 miles
- Red Bluff-Valley 500 kV 125 miles
- Imperial Valley-Salton Sea 500 kV 90 miles  
(potentially an SDG&E project)
- Red Bluff-Salton Sea 500 kV 60 miles
- Salton Sea-Valley 500 kV 72 miles
- Colorado River-North Gila 500 kV 80 miles
- Salton Sea 500 kV Switchyard

#### **Iron Mountain SEZ**

- Iron Mountain – Pisgah 500 kV ~100 miles
- Iron Mountain – Colorado River 500 kV ~50 miles
- Iron Mountain – Red Bluff 500 kV ~50 miles
- Iron Mountain – 500/220 kV Substation





**PEIS Development Alternative:  
Lands Available for Application - Solar Energy Zone Program**

**Existing Substations (SCE, 2011)**

- 66 kV
- 115 - 161 kV
- 220 kV
- 500 kV

**Proposed Transmission Lines (SCE, 2011)**

- 66 kV
- 115 kV
- 161-220 kV
- 500 kV

**Existing Transmission Lines (SCE, 2011)**

- 500 kV
- 220 kV
- 161 - 115 kV
- 66 kV

**BLM Corridor**

- SEC 368 Zone
- Existing 220/230kV Corridor (Exaggerated Width)
- Existing SCE 500kV Corridor (Exaggerated Width)

**Proposed Substations (SCE, 2011)**

- 66 kV
- 115 kV
- 220 kV
- 500 kV

**Other Features:**

- SCE Territory (SCE, 2011)
- County Boundaries (TBM, 2010)
- US Bureau of Land Management (BLM, 2008)
- US Fish and Wildlife (BLM, 2008)
- Forests (TBM, 2010)
- Developable Solar Energy Zones (SolarEIS, 2011)
- Solar Projects

Scale: 0 3.5 7 14 Miles

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Mapping Prepared by:  
Real Properties  
GIS and Mapping  
EDISON

Project ID: 20141028  
Custodian: Dave Holder (GIS)  
File Name: SolarPEIS.mxd  
Date: 4/29/2011



SOUTHERN NEVADANS COMMITTED TO CONSERVATION



**RED ROCK AUDUBON SOCIETY**

May 2, 2011

Linda Resseguie, BLM Solar PEIS Projects Lead  
Solar Energy PEIS  
Argonne National Laboratory  
9700 S. Cass Ave. EVS/240  
Argonne IL 60439

Dear Ms. Resseguie,

Thank you for the opportunity to comment on the draft PEIS for solar energy development. While we generally support the idea of siting solar energy facilities on public lands we have a number of concerns with the draft PEIS and the approach taken to addressing the issue of how solar energy generating facilities will be sited.

First, we strongly oppose the preferred alternative. This alternative designates Solar Energy Zones (SEZ) but also leaves open almost 9 million acres of BLM land in Nevada for solar energy development. Many of these areas are clearly inappropriate for utility scale solar development for reasons ranging from lack of infrastructure to unstable soils and heavy winter snow loads, plus major impacts to deer and elk winter range.

The alternative in which SEZs are designated and development confined to these areas is much better but needs to be much more selective about the suitability of the individual SEZs. Each one of the proposed SEZs needs to be examined in detail to determine true suitability. For instance, the Dry Lake SEZ located northeast of the intersection of US Highway 93 and Interstate 15 in Clark County Nevada has the advantage of being located almost immediately adjacent to NV Energy's Harry Allen substation but also includes an area with some significant biological resources. There is a significant population of the Beaverdam breadroot (*Pediomelum castoreum*), a rather rare plant listed on the Nevada Natural Heritage Program At-Risk-Tracking list. Also we have observed two living Gila Monsters (*Helioderma suspectum cindtum*) in 2005 in close proximity (UTM 11S 068159/4024151) and found a partial carcass near the southwest boundary of the Moapa Indian Reservation in 2009. The Gila Monster is a State of Nevada protected species.

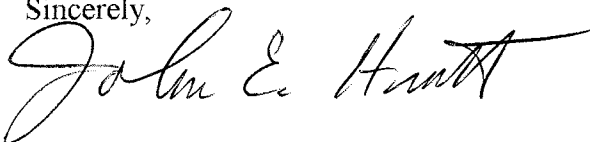
The issue of water use in the Mojave Desert is a very important. There is insufficient groundwater in Southern Nevada to support any technology which uses wet cooling and there may not even be enough to support dry cooled thermal technologies. The cumulative impacts of photovoltaic projects on groundwater resources may be unacceptable for an area as large as some of the SEZs, such as Delamar Valley. The BLM, as a land manager has the responsibility to preserve surface water resources and not allow groundwater pumping to cause springs and seeps to dry up.

Soils in the vicinity of Delamar Dry Lake are very problematic for industrial development. Motor vehicle traffic turns routes into deep powder. The whole area would need to be covered with several inches of gravel to control dust. The Delamar Valley SEZ may not be very attractive for solar development because of the dust problems and lack of water. The water table in that area is about 2000 feet below the surface and the water resources are already fully appropriated, if not over appropriated.

The draft PEIS doesn't really address the issue of engineering feasibility for solar energy projects. The issue of soil suitability at a given location is important and the cost of substations for connecting to transmission lines also needs to be considered by the BLM in determining suitability of a SEZ. Just because an area doesn't have any obvious conflicts doesn't necessarily mean that it is suitable as a SEZ. In general, industrialization of remote areas is more difficult and costly than constructing facilities in close proximity to existing load centers. SEZs near to load centers should get preference over remote sites.

The long term impacts of large scale industrial development in remote areas will be very significant. In spite of the best efforts of the BLM and contractors the impacts will not just be limited to the actual area developed but will spill over onto adjacent and nearby lands. New invasive plant species will be introduced, wildlife will be displaced and the character of some wonderful wild areas will be changed forever. To minimize impacts to adjacent lands developers need to be required to mitigate the impacts of their projects as much as possible. This means an active program of mitigation and some provision for restoration upon decommissioning or failure of a project. Technologies are changing rapidly and projects will become obsolete over time and will need to be replaced or the land restored to an acceptable condition. In Volume 8, Appendix A section 2.2.11 it is suggested that developers voluntarily contribute money to support the BLM Native Plant Materials Development Program. This should be a requirement rather than a suggestion since without a viable native plant program there will be no successful restoration outcomes.

Sincerely,

A handwritten signature in black ink that reads "John E. Hiatt". The signature is written in a cursive, flowing style.

John E. Hiatt, Conservation Chair  
8180 Placid Street  
Las Vegas, NV 89123

COMMENTS:

May 2, 2011

To whom it may concern:

We understand there is a process on-going considering the possibility of placing some solar units on 1 or 2 permits that we are using as permittees (Alamasa & Dixon Hills).

We have no problem with that use, but we do request no less of ALLMs except for the actual project area. We do request they build good fencing (sheep-tight) around the project and specify they are to keep the fence in good repair. (not our responsibility) We also request that they be neighborly with other multiple users.

If they are considering taking the permit entirely, we should be awarded other area of use that is close enough for practical use by us.

page 1

Louis & Jerry Schmidt



## Comments Continued

We have no idea why anyone would need more than sufficient area to operate and function the units.

We do have concern that we had very little notice of this event (3 days)

Sincerely,

Louis Schmidt  
Louis Schmidt

Jerry Schmidt  
Jerry Schmidt

pho 719 852-2236

page 2

ROCKY MOUNTAIN NATIONAL FOREST  
CONEJOS PEAK RANGER STATION  
RECEIVED

MAY 02 2011



USDA Forest Service  
Conejos Peak Ranger District  
[www.fs.fed.us/r2/riogrande](http://www.fs.fed.us/r2/riogrande)

15571 County Rd T.5  
La Jara, CO 81140  
719-274-8971 TTY 274-6339



USDI Bureau of Land Management  
La Jara Field Office  
[www.blm.gov/lajara/lajarahome.htm](http://www.blm.gov/lajara/lajarahome.htm)

File Code: 1380

Date: May 5, 2011

Louis and Jerry Schmidt  
4517 East C. R. 10 S  
Monte Vista, CO 81144

*letter attached*

Dear Mr. and Mrs. Schmidt,

I received the attached letter on May 2, 2011, commenting on the Solar Programmatic Environmental Impact Statement in relation to the Alamosa and Pinon Hills Allotments.

Although your letter was delivered by the May 2<sup>nd</sup> deadline for public comment, BLM is not able to accept comments at this office, and unfortunately we are not able to mail the comments forward to the correct address. We are returning your comment letter to you so that you can mail it to the below address, in hopes that your comments will still be considered.

Solar Energy Draft PEIS

Argonne National Laboratory  
9700 S. Cass Avenue-EVS240  
Argonne, Illinois 60439

I apologize for any inconvenience.

Sincerely,

ANDREA M. JONES  
Acting District Ranger/  
Field Office Manager

*Please give our  
comments consideration  
as this affects  
our livelihood and  
we were not given  
notice to comment.*

*Sincerely  
Jerry Schmidt*



April 9, 2011  
Antonito, CO 81120

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

Dear Sirs:

My husband and I strongly support the proposed BLM Southeast Antonito Solar Zone proposed in Conejos County, Colorado.

Our property lies just Northwest of the BLM land that has been designated for the solar zone, We are glad to support the idea of clean, sustainable energy. We are also aware of the potential for other support facilities that could be established to support the solar operation.

We have lived here all our lives and know the lack of vegetation on the proposed site. Also, we would be so happy to see this land used for the benefit of the citizens of Conejos County and maybe surrounding areas. We are the poorest county in Colorado.

Sincerely,

*Virginia Lujan-Jaramillo*

Virginia Lujan

*Steve Lujan*

Steve Lujan

*Fabian W. Acosta*

*Robert Armenta*

*Lucy Jaramillo*

*Amy Carras*

*Frances Cisneros*

*Arnando Flores*

*Dominic Sanchez*

*Bardo Espinoza*

Mr. John J. Rawinski  
239 Cotten Lane  
Monte Vista, Colorado 81144  
April 18, 2011

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

Thank you for the invitation for comment on the Solar PEIS that is being done for Colorado. I applaud the agency's vision to allow greater opportunity for solar energy development here in the San Luis Valley where I have lived for the last 28 years.

I am a retired soil scientist that worked for the Rio Grande National Forest, also doing some work for BLM on grazing allotments. I retired in July 2008. During my entire life, I have enjoyed a passion for birds and bird conservation. Most recently I authored and published a book about birds in this region called *Birding Hotspots of South-central Colorado*. The book was a culmination of bird data that I have kept for nearly three decades. I have also served on the Colorado State Birds Records Committee and the Board of Directors for the Colorado Field Ornithologists organization. So with a focus on bird issues, I had the chance to review portions of the Solar PEIS.

First of all, I am a strong advocate of green energy such as solar. The San Luis Valley is an ideal place for such development with the high proportion of sunshine we enjoy in any year. However, I am also a strong advocate for bird conservation so land allocations (SEZ) must be carefully selected to avoid impacts to sensitive species.

On page 1217, the PEIS states that Mountain Plovers are known to occur within 5 miles southeast of the Los Mogotes East SEZ. A similar statement is made on 1229. Both of those statements are incorrect as there are known occurrences of breeding Mountain

Plovers just 3 miles west of the Los Mogotes SEZ. The PEIS is incorrect and needs to be corrected. The following information will show documentation of a breeding pair of Mountain Plovers that occur just west of the SEZ.

The first documentation is a BLM in-Service report by Scott, 2000. It summarized the Mountain Plover occurrences in the San Luis valley as per that date. It reads as follows:

"Site C: June 17-18, T34N R8E NE1/4 S 30 near an old stock corral with a water trough along the southeast side of Road 5056. The area is heavily grazed and has a pasture fence just south of the road. John Stump observed two adults and one chick foraging along the road. John also mentioned that a week prior to this sighting, (BLM temp employee) Lisa Clemens (sic) spotted the birds one to two weeks earlier in the same area."

Also included in the report is a map showing that the location is only 3 miles west of the Los Mogotes East SEZ.

On April 23, 2001, I went to the location described by Stump, and was able to locate, photograph and video a pair of birds at that location. I sent a letter, photo and video to the District Ranger, Conejos Peak Ranger District, dated April 24, 2001, in regards to the Mountain Plover on the BLM Little Mogote Allotment.

I have kept bird records over the years in a document called: *Birds of the Rio Grande National Forest and San Luis Valley, May 25, 2008*. It can be obtained from the Rio Grande National Forest filing system. In that document, I summarized the Mountain Plover sightings as follows (relevant parts bold italicized):

**MOUNTAIN PLOVER** (*Charadrius montanus*) Unusual breeder in isolated parts of the Valley. Known breeder south of Monte Vistas gunbarrel road and north of Capulin where Rawinski reported at least 3 displaying territorial flight in May 1983. They are seen in this area regularly each year, with few exceptions. One individual also seen near Blanca by Rawinski in 1986. Dean Swift reports them as fairly regular near Jaroso, Colorado in the subdivisions. On May 1, 1991 Rawinski saw 3 adults in territorial flight display up Findley Gulch, 2 miles south of Forest boundary on BLM lands. In summer 2000, BLM employees found a new population south of Capulin. In




**April 2001, JR collected video of two birds on territory, BLM, Little Mogote Allotment, west of La Jara.** In May 2001, birders from Gunnison counted 8 birds in the area south of Capulin in the horse pasture and state land, section 36 near Trujillo Canyon. **Lisa Clements, working for BLM in summer 2000 found some near a BLM water development and took a GPS point. She gave directions to John Stump, local birder, who went out there west of La Jara and saw an adult with young. Rawinski subsequently video-taped the birds that Stump observed.** First return date one bird south of Capulin, April 6, 2000 JR on BLM lands. Another early arrival 4-2-04 JR one bird in State section south of Capulin. Another early date...Ted Floyd reported one bird likely south of Smith res on 3-20-08. Sue Swift Miller reported two adults with young in section 14 or 15 T36N, R7E. The birders from Gunnison who found 8 birds South of Capulin were Lori Brummer, Jim Berry, Ron Meyer, Bill and Cheryl Day (Bill and Cheryl are actually from Hotchkiss) on May 29, 2001. We saw one bird on a nest. Brummer was through that area on June 16, 2001 and saw 1 mountain plover. Lisa Rawinski and Jenny Nehring did plover surveys in the Mogotes and had up to 15 individuals in that area in 2002.

The Solar PEIS is inaccurate as written and needs changes to the analysis relative to Mountain Plover in the Los Mogotes East SEZ. It should state that the Mountain Plovers have bred as close as 3 miles west of the Los Mogotes SEZ. The changes need to be consistent throughout the document. I believe the Los Mogotes East SEZ should be dropped from consideration due to the strong possibility of Mountain Plovers nesting directly in the proposed SEZ.

I am in favor of the other three proposed SEZ's in the San Luis Valley in so far as I know, there would be no conflicts in those.

One other correction is needed. In proposed De Tilla Gulch SEZ, p. 563 acknowledges that Mountain Plover does occur 10 miles west of the De Tilla SEZ. However, earlier in the document, it states that Mountain Plover occurs 10 miles north of the SEZ. I believe the correct location is 10 miles west (Findley Gulch population).

Thank you again for inviting comments.

  
John J. Rawinski



## References

Rawinski, J. May 25, 2008 Edition. Birds of the Rio Grande National Forest and San Luis Valley Area. 38 pages.

Rawinski, J. April 24, 2001. Mountain Plovers on the Little Mogote Allotment, BLM. Letter to Conejos Peak District Ranger. 2 pages.

Scott, M. 2000. Mountain Plovers in the San Luis Valley. In-service report. 4 pages.



Photo taken on April 23, 2001, J. Rawinski, of one of two Mountain Plovers observed on the Little Mogotes Allotment, BLM. The bird is just to the right of center, and the background clearly shows Flattop Mtn on the horizon. (The camera I had lacked telephoto capabilities, but the jpg file clearly shows the bird.)

*Sorry about photo.  
I do have those  
Available if  
necessary.*



*Preserving America's Heritage*

May 2, 2011

Ms. Linda Resseguie  
Solar PEIS Project Manager  
U.S. Department of the Interior  
Bureau of Land Management  
1849 C Street, NW, Room 2134LM  
Washington, DC 20240

***Ref: Solar Energy Development on Lands Administered by the BLM  
Various Counties in Arizona, California, Colorado, New Mexico, Nevada, and Utah***

Dear Ms. Resseguie:

We thank the Bureau of Land Management (BLM) for the opportunity to comment on the January 24, 2011 draft Programmatic Agreement (PA) for the referenced project. Enclosed are the Advisory Council on Historic Preservation's (ACHP) comments.

We noted in our comments at the Solar Programmatic Environmental Impact Statement (PEIS) Public Meeting in Washington, DC on February 2, 2011, that a critical component of the Section 106 consultation is government-to-government consultation with Indian tribes to ensure that they have adequate opportunity for input into this process. We encourage BLM to meet with Indian tribes as part of the consultation process of seeking, discussing, and considering views, per the regulations implementing Section 106, *Protection of Historic Properties*, 36 CFR §800.16(f). The BLM will want to consider the efficacy of face-to-face meetings in fulfilling their government-to-government responsibilities.

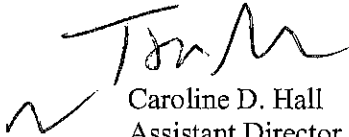
The Section 106 process also provides information that will assist the BLM in analyzing impacts to historic properties within the PEIS. The regulations implementing Section 106 require that the Section 106 process be completed "prior to the approval of the expenditure of any Federal funds on the undertaking or prior to the issuance of any license" (800.1(c)). As a result, the BLM must complete the Section 106 process and execute the agreement before the Record of Decision is signed for the PEIS. We are pleased that BLM is making progress toward concluding Section 106 in a timely manner.

ADVISORY COUNCIL ON HISTORIC PRESERVATION

1100 Pennsylvania Avenue NW, Suite 803 • Washington, DC 20004  
Phone: 202-606-8503 • Fax: 202-606-8647 • [achp@achp.gov](mailto:achp@achp.gov) • [www.achp.gov](http://www.achp.gov)

Our participation will continue to be handled by Nancy J. Brown, ASLA. She can be reached at 202-606-8582, or via email at [nbrown@achp.gov](mailto:nbrown@achp.gov).

Sincerely,

A handwritten signature in black ink, appearing to read "Caroline D. Hall". The signature is fluid and cursive, with a large initial "C" and "H".

Caroline D. Hall  
Assistant Director  
Office of Federal Agency Programs  
Federal Property Management Section

Enclosure

Joan Taylor  
1850 Smoke Tree Lane  
Palm Springs, CA 92264

Linda Resseguie, BLM Solar PEIS Project Lead  
Solar Energy PEIS  
Argonne National Laboratory  
9700 S. Cass Avenue - EVS/240  
Argonne, IL 60439

Re: Comments on Draft Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States

Dear Ms. Resseguie:

Enclosed is the California Energy Commission 1979 Biennial Report, which informed the CDCA Plan decision to permit energy development in Class M and Class L designated lands. The scope of energy development, and hence land conversion, contemplated in the report and the CDCA Plan which relied upon it is inconsistent with the scope of land conversion being considered today in the CDCA. This question should be revisited in the PEIS.

Thank you for the opportunity to comment.

Very truly yours,

 4/22/11  
Joan Taylor



# THE WILDLANDS CONSERVANCY

April 15, 2011

*Delivered via electronic submission to the BLM Solar PEIS website  
(<http://solareis.anl.gov>) and U.S. mail.*

Linda Resseguie, BLM Solar PEIS Project Lead  
Solar Energy PEIS  
Argonne National Laboratory  
9700 S. Cass Avenue - EVS/240  
Argonne, IL 60439

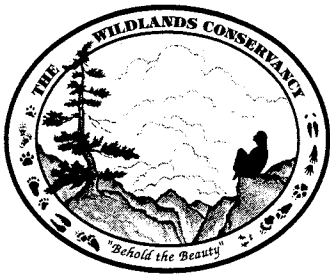
Re: Comments on Draft Programmatic Environmental Impact Statement  
for Solar Energy Development in Six Southwestern States

Dear Ms. Resseguie:

Thank you for the opportunity to comment on the Draft Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States (DPEIS). The Wildlands Conservancy (TWC) also signed on to a larger group of environmental comments but would like to submit the following comments specific to our organization and position. TWC is a 501c3 non-profit conservation organization with the dual mission to preserve the beauty and biodiversity of the earth and to fund outdoor education programs for the youth. TWC has preserved more land in California with private funds than any other conservation organization and owns the largest nonprofit preserve system in California (CA). TWC is an advocate for the preservation of the unique and sensitive lands of the Mojave Desert, and we request that the following comments be applied to the PEIS to maintain the conservation, historic, and recreation values of these public lands.

TWC is very supportive of responsible renewable energy and eliminating our dependence on fossil fuel energy sources and reducing our carbon footprint. TWC leads by example with point of use renewable energy. Our first preserve was established off-the-grid and self-sufficient in 1995. Since that time we have installed photovoltaic solar arrays or wind mills on the majority of our preserves. We feel it is imperative that the siting of renewable energy projects and the greening of California's energy supply be accomplished while protecting our treasured landscapes and fragile ecosystems. TWC also has a vested interest in





# THE WILDLANDS CONSERVANCY

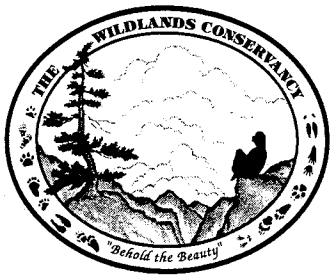
the current renewable energy discussion and corresponding developments being proposed on federal lands within the California desert region.

TWC is passionate about land conservation and preserving functioning ecosystems and initiated the largest private land acquisition project in U.S. History, The Catellus Land Purchase. Determined to prevent one of the great deserts of the world from being severed by development TWC raised more than \$45 million in private funds and gifted it to the American people. This gift was to ensure preservation of a 140-mile stretch of the Mojave Desert that includes a spectacular landscape of eroded granite mountains, seemingly endless valleys, heroic rock formations, cinder cones and sand dunes. The purchase of over 600,000 acres in the CA Desert connected Joshua Tree National Park to Mojave National Preserve with public conservation lands. These lands were gifted to the Department of Interior (DOI) for management with the understanding that they were purchased for conservation. President Bill Clinton, Vice President Al Gore, DOI Secretary Bruce Babbitt and BLM Director Tom Fry all praised and congratulated TWC on the conservation benefits of this legacy purchase. Just 4 years after the completion of the project, applications for industrial renewable energy development began to cover the CA Desert and threaten to undo this legacy conservation project.

The Department of the Interior and the Department of Energy created a 'land rush' in the CA desert beginning with the Energy Policy Act of 2005. Shortly afterward, BLM announced its goal to produce 15,000 megawatts of renewable energy on public lands by 2015. While we support the overall initiative to green America's energy supply, DOI and DOE did not create a framework and siting criteria to encourage responsible projects in the most appropriate locations and as a result a speculative rush followed. Economic incentives for industry were numerous including: the low cost of 'leasing' public lands for projects, government American Recovery and Reinvestment Act (ARRA) grants and guaranteed loans, 'fast-tracked' project status, etc. By 2007 over 1.2 million acres of the California desert were under application for industrial development and many of those applications were in areas with highly sensitive resources and proposing inefficient or unproven technology. Frustrated desert residents and enthusiasts were assured by BLM that the PEIS would be a planning document that would designate the best places for solar development on public lands and so far the draft greatly missed that mark.







# THE WILDLANDS CONSERVANCY

## The Preferred Alternative (PA)

The current preferred alternative is not only an enormous step backwards in the progress toward the development of a responsible renewable energy program, but it would be a waste of resources to continue with the PEIS if that remains the preferred alternative (PA). If the DOI continues to propose the preferred alternative, the potential for solar on 22 million acres in the west, then the PEIS has become a mere smokescreen for a planning document and is not the comprehensive planning document mandated by National Environmental Protection Act (NEPA). This preferred alternative would essentially be continuing the current status quo of accepting and processing applications for development on most public lands (National Parks, Wilderness and other Congressional designations being the only exclusions from development), with no integration of the 2010 independent science report that recommends renewable energy development on disturbed and degraded lands and that wildlands ecosystems remain intact. Recent emerging studies dramatically elevate the value of the Mojave Desert as a carbon sequestration bank and puts in question the public benefit and green-house gas results of utility scale renewable energy development on undisturbed lands in the Mojave.

DOI began the NEPA process with a scoping process in 2009 for designating solar enterprise zones (SEZ's) on approximately 350,000 + acres in the California Desert Conservation Area (CDCA). Now in the first draft of the PEIS DOI has changed to a PA that includes the SEZ's plus the additional 22 million acres in the western 6 states, which completely changes the original intent and objective of the initial scoping Notice of Intent and public comments. In addition, the inclusion of the 1.7 additional acres in CA covers many of the lands in the Catellus lands Purchase that were gifted for conservation and include the proposed Mojave Trails National Monument. Lastly, because the planning area has been increased by more than 6 times of the original project area, we recommend that the DOI by virtue of NEPA, redo the scoping process.

## SEZ's

It is TWC's position that DOI should change the preferred alternative to the Solar Energy Zones (SEZ) alternative only (Alternative). Furthermore, the SEZ's still need to be reduced and revised (see our September 2009 comments) for solar energy development to provide for long-term conservation and ecosystem





# THE WILDLANDS CONSERVANCY

functioning within the California Desert Conservation Area (CDCA). Also the current draft does not account for how pending solar applications will be incorporated into the PEIS or potential zones etc. and thus how cumulative impacts will be assessed and minimized.

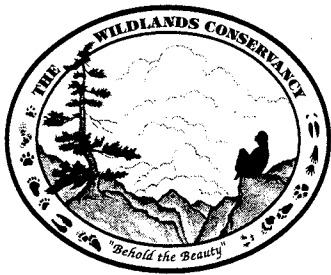
In an effort to facilitate the BLM's daunting task of identifying suitable public lands for solar development, a number of environmental organizations including TWC have worked together to develop a desert siting criteria memo specifically designed for use by the BLM in the California Desert Conservation Area (CDCA) back in 2008-9. Those criteria were intended to aid in identifying lands both within and outside the SESA's that are lower in environmental resources and sensitivity and thus, more appropriate for industrial development. In the recent draft of the PEIS DOI appears to have discounted those and all other conservation and science recommendations by not including the recommended alternative that utilizes disturbed and degraded lands and instead selecting the current PA. This siting criteria memo is attached again and should be revisited and utilized in the Solar PEIS and SEZ designation if DOI is going to uphold any of its conservation mission.

## Summary

The current PA in the Draft Solar PEIS is detrimental to all of the conservation work that has been done in the western deserts and does not reflect any of the knowledge scientists and land managers have gained over recent decades in the fields of conservation biology and ecosystem management. The environmental community has tried to work diligently alongside BLM over the past 2 years to help identify disturbed and degraded lands, including public lands that would provide the least conflicts for development and minimize irreversible ecosystem damage to our fragile deserts. Unfortunately these efforts seem are absent in the current draft of the PEIS and PA.

In 2010 DOI approved several "fast-track" projects, several of them with severe environmental damage and costs and despite the information about numerous sensitive resources upon breaking ground, these projects have been allowed to continue on their previous requirements without any revisions or adjustments to project footprints, mitigation or overall approval. Also since **'The BLM will continue to process existing renewable energy applications both within and outside the solar energy study areas'** development is continuing in a crude





# THE WILDLANDS CONSERVANCY

framework. The DPEIS does not address how these pending, nor future applications will be treated in relation to the SEZ's in CA.

There are many proposed uses, and much competition for, the public lands in the desert including, but not limited to conservation, recreation, mineral exploration, military expansion, and renewable energy. While these are not all exclusive uses, BLM is charged with making many of these management decisions and allocations. Therefore, with regard to renewable energy, DOI should thoroughly evaluate the use of already disturbed lands (both private and public), and local distributed RE generation such as solar PV on rooftops of commercial and residential buildings to incorporate many alternatives and solutions into America's energy model. As TWC has stated before, prioritization should be given to previously degraded and destroyed lands before compromising the untouched, pristine desert landscapes that contribute to the legacy of the Western Frontier.

In closing, we need to reiterate that we are highly supportive of renewable energy generation, specifically solar, in the California Desert. The current PEIS model, however, is not only unnecessary and irreversible; it is an irresponsible use of our public lands. There are diverse alternatives to consider, and later implement, to reach our renewable energy goals.

The fate of our precious land is entrusted to the DOI. We ask that you thoughtfully weigh the consequences of this decision. Thank you for the opportunity to provide insight and comment regarding the Draft Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States.

Sincerely,

April Sall  
The Wildlands Conservancy, Conservation Director



"H. Marie  
Brashear"

Solar\_033

<waterforwildlife@gmail.com> To  
linda\_resseguie@blm.gov,  
jane.summerson@ee.doe.gov  
05/20/2011 05:35 CC  
PM Chuck Bell <chuckb@sisp.net>,  
samiam@iwvisp.com  
Subject  
Solar PEIS one last comment

I am submitting this final comment on the Solar PEIS after the formal closing for myself and the Society for the Protection and Care of Wildlife. 43CFR2920.1-1 a which I quote below says basically that when there are significant dollars spent on the land involving substantial construction, development, or land improvement and the investment of large amounts of capital which are to be amortized over time must be leased at fair market value. Transmission Corridors qualify as ROW but not the non SEZ project sites nor the SEZ. They must be leased at fair market value. This would apply to the recently approved PEIS for Wind Energy, as well. The key word below is "shall".

Title 43: Public Lands: Interior  
PART 2920—LEASES, PERMITS AND EASEMENTS  
Subpart 2920—Leases, Permits and Easements: General Provisions

§ 2920.1-1 Authorized use.

Any use not specifically authorized under other laws or regulations and not specifically forbidden by law may be authorized under this part. Uses which may be authorized include residential, agricultural, industrial, and commercial, and uses that cannot be authorized under title V of the Federal Land Policy and Management Act or section 28 of the Mineral Leasing Act. Land use authorizations shall be granted under the following categories:

(a) Leases shall be used to authorize uses of public lands involving substantial construction, development, or land improvement and the investment of large amounts of capital which are to be amortized over time. A lease conveys a possessory interest and is revocable only in accordance with its terms and the provisions of §2920.9-3 of this title. Leases shall be issued for a term, determined by the authorized officer, that is consistent with the time required to amortize the capital investment.

Mar 31, 2011

Linda Resseguie  
Argonne National Laboratory, 9700 S Cass Avenue EVS/240  
Argonne, IL 60439

Subject: Support environmentally responsible solar projects on public lands

Dear Linda Resseguie,

As part of a clean energy future that includes energy efficiency, conservation, and rooftop solar panels, I support environmentally responsible solar projects on our public lands. If done right, renewable energy development on public lands can both meet our climate and clean energy needs and protect our beloved wildlands and crucial wildlife habitat.

We have an historic opportunity to get solar development right on public lands, and the long-term plan for solar now under development will play a critical role. We zone uses in our towns and neighborhoods, and we should do the same for our public lands.

To ensure that solar development on public lands is really smart from the start, I recommend that:

- The BLM focus on siting projects properly in areas with the least amount of conflict or potential impacts on sensitive lands and wildlife. Science should guide the agencies decisions. Projects should be limited to these designated "zones;"
- The BLM should NOT open up an additional 21 million acres to development, including wildlands and important wildlife habitat. We simply do not need to develop such large areas and can reevaluate additional lands through a future process;
- The BLM should strongly consider recommendations from local stakeholders to eliminate proposed development areas in sensitive areas from the get-go.

By moving to a truly smart from the start process, the BLM can ensure that solar development avoids the many conflicts, controversies and impacts that have plagued oil and gas development on public lands. I urge you to take this common-sense approach of focusing on zones that will allow solar development that is faster, cheaper and better for the environment and consumers.

Sincerely,

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

“A number of the western states provide great potential for cultivating renewable energy sources”

Let me start off by saying that I support the development of solar energy on public lands in Esmeralda County as it is probable to have some economic benefit to the county but not when it will have a direct effect on residents of a small historic mining townsite, specifically Gold Point, in the way of:

### **Visual Impacts**

There is great concern that solar energy development facilities will present negative visual impacts to viewers from adjacent lands used for recreation. The PEIS needs to consider such impacts in choosing the specific locations and technologies for future plants and associated transmission corridors. Gold Point has a tremendous picturesque panoramic view of the Lida Valley and the surrounding mountains that would be destroyed by a solar plant in close proximity to the townsite. The townsite sits higher than the valley for the proposed site and all we would see would be the glare of the mirrors and what an ugly site that would be.

### **Air Quality**

Our air is clean and unpolluted and we want to keep it that way. Mother Nature pollutes our area occasionally with pollens and dust during wind storms but otherwise the area is basically free of chemical contaminants and the dust and pollens are tolerated easily by the local population. Our concern is the pollution from the emissions from the construction equipment and the vehicles driven by workers and the impacts of natural gas or other fossil fuel-based plants that may be built to provide backup power during the times when the sun is not shining;

There are concerns regarding potential hazardous chemical spills during operations of solar power plants and disposal of these chemicals after use. Substances of concern included heat transfer fluids (e.g., oils), engine fluids, heat transfer system cleaners, molten salt, gases (hydrogen or helium), and herbicides used for vegetation control.

### **Ecology**

Effects of destruction of wildlife habitat; habitat fragmentation; potential interruption of migration corridors; reduced access to watering holes; increased edge effects such as the proliferation of non-native, invasive, or predator species; availability of water; the effects of lighting (particularly at night) and glare during the day from the solar facilities; increased vehicular traffic on roads that are already degraded from lack of maintenance due to funding restriction for rural areas; hazardous material releases; increased fire risk; the reflective solar energy devices could attract migratory birds that could mistake the devices for bodies of water, causing bird flocks to waste critical time and energy during their migration. It should also be mentioned that this could lead to a large number of bird fatalities.



### **Noise and Vibration**

We are concerned about the potential noise impacts from any turbines and cooling towers associated with certain types of solar power plants. We have no noise pollution other than the wind and the birds and we enjoy those sounds.

### **Waste Generation and Disposal**

There is concern about potential hazardous chemical spills during operations of solar power plants and disposal of these chemicals after use. Substances of concern included heat transfer fluids (e.g., oils), engine fluids, heat transfer system cleaners, molten salt, gases (hydrogen or helium), herbicides used for vegetation control, and batteries.

There is concern of potential liquid discharges and effluents into the air from solar power plants and the effect that they could have on (1) water quality in local streams and reservoirs and groundwater, any chemicals released as part of boiler or cooling-tower blowdown and stormwater runoff. The town water supply is from mountain springs in the mountains in close proximity to the proposed site.

### **Cultural Resources**

It is highly suggested that Native American Tribes be consulted in these matters and their input requested. Local Native American Tribe elders have expressed concern that construction of solar power plants could destroy cultural, geologic, and paleontological resources. It was stated that these resources need to be protected.

### **Other**

Other environmental and safety-related issues that were raised:

Light pollution from the solar arrays.

Public safety, especially in regards to safety of small plane operation and landing at smaller airstrips near the solar power plants and transmission lines.

Military concerns about (1) the displacement of threatened and endangered species habitat onto Department of Defense installations and ranges; (2) thermal plumes over low-level military training routes and approach surfaces; (3) thermal plant impacts on regional water supply; (4) glare from heliostats in proximity to training routes and ranges; (5) solar equipment tolerances to sonic booms; (6) lighting and night vision impacts; (7) transmission interconnects; and 8) tracking and communication system spectrum.

Impacts of increased traffic on rural roads leading to the project sites that are already degraded.

Earthquake hazards.

Fire hazards.

Flashflood hazards, Lida Valley is a flashflood plain yearly depending on the amount of rain.

Possible retinal damage or temporary blindness from looking at the solar concentrator at solar power tower facilities, and possible association with traffic accidents.

Impacts of worker populations on sensitive desert resources during both the construction and operation phases of solar and transmission development.

Impacts on local resources that would follow from the introduction of new transportation routes.

Potential socioeconomic impacts of solar power plants and associated transmission lines. Do a thorough analysis of the economic impacts, both for the short term and the long term, on the communities near the projected facilities.

Recreation, tourism, property values, jobs, income, infrastructure, and taxes.

The opportunity costs associated with dedicating the lands for solar energy development facilities over an extended period of time should be evaluated for undeveloped land, nonmarket values, such as the quality of life, aesthetics, recreational opportunities, and sense of place should be included in socioeconomic analyses. Also included in the analyses should be the costs associated with facility decommissioning and site remediation/reclamation.

A strain will be put on local infrastructure and Emergency Services during the periods when worker populations are high and needs to be evaluated that the economic potential of the proposed projects be balanced against the current and long-term needs of the communities and their available resources. All Fire and Ambulance Services are manned by volunteers that are not paid.

The matter of equity in lease terms on public lands versus private lands.

The payments on public lands would be too low compared to private lands. Esmeralda County would not be compensated financially for Solar Power Plants other than for the Improvements added to the land. We urge the government not to compete with private land holders or displace private-sector opportunities by offering public lands cheaply. There are some private lands that may also be suitable for utility-scale solar power development.

We urge the analysis performed for the PEIS to not rely solely on IMPLAN (IMPact analysis for PLANning) or on other models derived from economic base theory to predict the economic impacts of solar energy development. It was stated that the relationship between public land management and local and regional economic prosperity and growth is far more complex than these models assume, and given the potentially significant impacts on many of the region's public lands, use of such models would result in an incomplete and inadequate analysis of the socioeconomic impacts.

It is requested that a meaningful percentage of the right-of-way (ROW) rental fees, and/or profit-sharing by the utilities, be directed locally to offset any environmental, recreational, and quality-of-life-degradation of affected inhabitants.

It is requested that grants, tax breaks, and other incentives not be provided to businesses and individuals who develop solar energy and other alternative energy technologies. In the evaluation of

the tax credits, the duration of credits and what would happen if they were discontinued should be considered.

When considering the need for grants or tax breaks for solar development, one should keep in mind that the oil industry receives a sizeable sum in preferential treatment every year and the counties are the losers when these “breaks” are given.

### **SITING AND TECHNOLOGY CONCERNS**

Suggestions on where to site and where not to site the solar energy development facilities and associated transmission lines:

Where to site:

Lands that are already degraded/disturbed such as:

- Abandoned mines or quarries, producing or retired oil and gas fields, and closed landfills
- Existing transmission corridors
- Already degraded military lands or the former nuclear test areas (e.g., Nevada Test Site)
- Brownfield and Superfund Sites
- Abandoned/compromised/damaged agricultural lands
- Lands that are close to existing transmission lines, gas lines, water pipelines, major roads, and railroads
- Lands close to load centers
- Lands with available water

Where not to site:

One or more of the following areas should be excluded from development:

Areas with known concentrations of cultural resources

Lands close to residences

National Historic and National Scenic Trails

National Wildlife Refuges and Wildlife Habitat Management Areas

Desert Wildlife Management Areas

Threatened, endangered, and sensitive species habitat, as well as critical corridors and linkages for wildlife habitat

Areas immediately adjacent to the ones listed above should be excluded from development if development would degrade the viewshed for scenic areas or negatively affect the ecological values for which these areas were designated.

### **Transmission Lines**

Siting decisions about the plants should not be made without due consideration of how the electricity generated by the plants would be transmitted to the users.

In fact, applications not providing a clear path for the transmission of electricity should not be approved.

Use the existing transmission lines and corridors as much as possible and if new transmission lines are needed, they need to be planned and constructed through strong coordination among the various federal, state, and local government agencies

## **STAKEHOLDER INVOLVEMENT**

Request that the BLM and the DOE work with other governmental agencies on coordination and cooperation among industry and industrial organizations, communities, and private citizens to develop their respective programs.

Fully engage the Tribal communities in the site selection process.

The agencies need to make every attempt to encourage the public to participate in the PEIS process, including holding workshops, providing interim information regarding inventories of wilderness-quality lands and visual resources. The diversion of public lands for exclusive use by solar energy utilities would set a huge and lasting precedent and should not be done without full and open consideration of the significant benefits lost to the American public.

## **CUMULATIVE IMPACTS**

From the incremental impacts of future solar energy development projects, including their associated transmission lines and infrastructure improvements (such as roads) leading to them, when added to impacts from other past, present, and reasonably foreseeable future actions livestock grazing; military base expansions; mining; urban sprawl; recreational activities such as hunting, camping, and off-highway vehicle (OHV) use.

## **MITIGATION**

Compensation to the county the project is in, avoid areas rich in cultural resources, avoid disturbance and harassment of wildlife, minimize the use of water, and avoid vegetation removal during the nesting/breeding season for migratory birds.

Create secure funding sources, such as endowments or royalty payments from the developers to pay for local habitat protection.

## **POLICY**

### **Consideration of National Security Threats**

Agencies need to examine the national security threats posed by large, often foreign-owned or -financed corporations/consortiums/entities controlling power production on remote public lands.

## **LAND USE PLANNING**

Consider the competing needs for the lands that would be used by the solar power plants and associated transmission lines, including recreation (e.g., horseback riding, bicycling, motorcycle riding, hunting, boating, camping), tourism, agriculture, grazing, conservation.

Public lands are intended for multiple uses and they should not be devoted to a single use, such as a solar power plant, for long periods.

Coordinate the planning efforts, particularly in regards to transmission lines, among different federal, state, and local agencies. In addition, private lands should also be considered in the planning process

## **ALTERNATIVES**

Limit development to only previously disturbed lands.

Limit development to areas that are not near any population centers no matter how few residents there are living in the area.

Limit development to near the existing transmission lines and roads.

Use private lands as well as public lands.

Distribute or sell public lands to the private sector and allow the construction of generation facilities only on private lands.

An alternative where all power lines are buried or burying as many of the power lines as possible.

Development without tax credits.

DOE should provide a broader range of alternatives than the BLM because it can fund projects on Tribal, state, private, and other federal lands in addition to BLM-administered lands and has no affirmative obligation to process ROWs. Could include prioritizing projects that have economic benefits to the county the project will be located in.

Prioritizing projects on already-degraded lands such as Brownfield or Superfund sites.

The PEIS should consider all electricity generation options, including coal, nuclear, natural gas, geothermal, and wind and compare the impacts and benefits of these options.

## **COORDINATION AND COOPERATION AMONG AGENCIES**

DOE and the BLM need to coordinate and cooperate with other federal, state, and local government agencies in the planning and implementation of their respective solar energy programs. They need get the local county, city, or township governments involved when the projects are within their jurisdictional boundaries.

## **OTHER ISSUES**

Other comments and issues include:

Clarity, transparency, and flexibility of the BLM's approval process and decision making regarding the solar energy development projects without so many restrictions and so many hoops to jump through to get project off of the ground.

Potential monopoly and concern that one major corporation or big business owner may monopolize the installation and maintenance of solar collection devices and associated hardware. Require that a good majority of the work be distributed to local installers and craftsmen that have the qualifications to do the job.

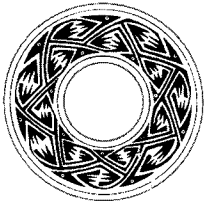
Designation of new corridors: the PEIS must clearly address whether it is merely determining the potential need for new corridors to facilitate new solar energy projects or if the PEIS will also be designating corridors based on projected development. The PEIS needs to focus on existing and

planned corridors, and coordinate with ongoing designation processes, rather than designate new corridors.

Consider the local population objections regardless how small it is in a rural area that is not a major population area. The absurdity of selecting a solar site within eyesight of any population area is beyond my understanding when it is plainly known that the area did not want this to begin with. Of the vast areas in Esmeralda County there are more and better choices of where a solar sight could be placed.

Sandra Johnson  
P.O. Box 272  
Goldfield, NV 89013





**CROW CANYON**  
ARCHAEOLOGICAL CENTER  
Discover the Past, Share the Adventure

Solar\_036

***Deborah Gangloff, Ph.D., President & CEO***

May 5, 2011

Linda J. Resseguie  
Solar Energy Draft PEIS  
Argonne National Laboratory  
9700 South Cass Avenue  
EVS/240  
Argonne, IL 60439

Submitted electronically at <http://solareis.anl.gov/involve/comments/index.cfm>

**Re: Endorsement of Cultural Resources Preservation Coalition Letter on Solar PEIS**

Dear Ms. Resseguie:

The National Trust for Historic Preservation endorses the comments submitted by the Cultural Resources Preservation Coalition on the Draft Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States.

Sincerely,

To: Linda J. Resseguie, Argonne National Laboratory  
From: Linea Sundstrom, Ph.D., Chair, Conservation Committee, American Rock Art Research Association  
Re: Comments on the Draft Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States (EIS No. 20100466)  
Date: April 26, 2011

Thank you for the opportunity to comment on the Solar Programmatic EIS for six Southwestern states. While the effort to identify areas where solar development is least likely to have adverse effects is commendable, in regard to culture resources the data available for making such determinations are woefully inadequate. Most of the proposed areas are less than 5% surveyed for cultural resources. This means that those selecting the areas for solar development projects have almost no knowledge of their potential for containing significant historic and cultural resources. In other words, your decision-making process has essentially excluded cultural resource potential, owing a lack of relevant information.

The Southwest is an environmentally complex and archaeologically rich region. Members of my organization who know these areas well inform me that they very likely contain many unrecorded rock art sites and geoglyphs. As you know, the type of solar development anticipated for this region can be extremely destructive of historic resources at and below surface. Geoglyphs are of particular concern to my organization in that regard. In addition, secondary impacts such as dust, increased traffic, and vibrations from construction activities can irreparably damage petroglyph and pictograph sites. You should be aware that rock art sites are generally considered sacred places to Native American communities. Despite this, tribal consultations and ethnographic studies of the proposed solar development zones, as with archaeology survey, are largely lacking in your analysis.

With so little solid information available on the locations and significance of rock art sites and geoglyphs in the proposed zones, we favor the SEZ alternative simply because it involves smaller areas and hence is less likely to result in the damage or destruction of important sites. That said, we hereby go on record in stating that the PEIS process is deeply flawed regarding cultural and historic resources.

For information about the American Rock Art Research Association, please visit our web site [www.arara.org](http://www.arara.org).

A handwritten signature in black ink, appearing to read "Linea Sundstrom", with a long horizontal flourish extending to the right.



# GILA RIVER INDIAN COMMUNITY

POST OFFICE BOX 2140, SACATON, AZ 85147

TRIBAL HISTORIC PRESERVATION OFFICE

(520) 562-7162  
Fax: (520) 562-5083

April 12, 2011

Michael D. Nedd, Assistant Director  
Minerals and Realty Management  
Department of the Interior  
Bureau of Land Management  
Washington, D.C. 2040

RE: Draft Programmatic Environmental Impact Statement and Draft Programmatic Agreement Solar Energy Development and Program

Dear Mr. Ned,

The Gila River Indian Community Tribal Historic Preservation Office (GRIC-THPO) has received your these draft documents on February 22, 1011. The documents describe an undertaking to develop utility scale solar energy projects across the states of Arizona, New Mexico, Colorado, Utah, California and Nevada.. These developments will occur on lands administered by the Bureau of Land Management (BLM). The Programmatic Agreement develops a process for the BLM to consult with Indian Nations and other entities.

The GRIC-THPO has reviewed the draft Programmatic Agreement and the EIS and find that both documents are in an acceptable form. The GRIC-THPO expects the opportunity to review the Programmatic Agreement when it becomes available. The proposed project area is within the ancestral lands of the Four Southern Tribes (Gila River Indian Community; Salt River Pima-Maricopa Indian Community; Ak-Chin Indian Community and the Tohono O'Odham Nation).

Thank you for consulting with the GRIC-THPO on this project. If you have any questions please do not hesitate to contact me or Archaeological Compliance Specialist Larry Benallie, Jr. at 520-562-7162.

Respectfully,

Barnaby V. Lewis  
Tribal Historic Preservation Officer  
Gila River Indian Community



"Managing and conserving Arizona's natural, cultural and recreational resources"

EC

April 25, 2011

Michael D. Nedd  
Assistant Director  
Minerals and Realty Management  
DOI-Bureau of Land Management  
Washington, D.C. 20240

RE: AZSHPO Comments on a Draft Programmatic Environmental Impact Statement (PEIS) for Solar Energy Development on Lands Administered by the BLM; 1610(350); DOI-BLM; SHPO-2008-1959(89831)

Dear Mr. Nedd:

Thank you for consulting with our office on the draft PEIS for the above proposed undertaking. We reviewed the Reader's Guide and Executive Summary document and also attended the public meeting that was held in Phoenix on March 1, 2011. We offer the following comments:

- 1) Pages ES-8 and 9: "TABLE ES.2-2: Areas for Exclusion under the BLM Solar Energy Development Program Alternative" needs to more inclusive with regard to cultural resources. For example, item #20 should not be restricted to National Register-listed sites only, but should include those properties that are *eligible* for inclusion on the National Register as well. In addition, the examples provided for item #21 should list property types other than just Native American traditional and sacred sites; significant prehistoric, historic, and protohistoric sites, structures, buildings, objects and districts should also be enumerated in this point. While we know that it is the Agency's intent to preserve these resources, it should be made clear in this section of the document (as it is in Table ES.2-5).
- 2) It is our opinion that the Solar Energy Zone (SEZ) Alternative appears to represent the best potential for avoiding impacts to significant heritage resources. The most optimal way to do this would be to only include areas of low potential sensitivity for cultural properties within the SEZs, e.g., previously disturbed areas, or areas that have been inventoried (within the last 10 years) by professional archaeologists and have been found to contain no or very few archaeological sites. Equally important, areas that are sensitive with regard to Native American concerns should also be avoided.
- 3) We note that three SEZs have been proposed for Arizona and that all of them fall within the western portion of the state, a region that is characterized by basin and range topography or landforms. Since the SEZ Alternative will concentrate solar development within a smaller geographic area, we recommend that some preservation of both components (basins and ranges) of these landforms occur so that we do not lose all of the basins to these developments. This is especially critical in areas where cultural landscapes are present and it is the *whole* of the geographic area that has traditional or



Janice K. Brewer  
Governor

State Parks  
Board Members

Chair  
Reese Woodling  
Tucson

Tracey Westerhausen  
Phoenix

Larry Landry  
Phoenix

Walter D. Armer, Jr.  
Vail

Arlan Colton  
Tucson

William C. Scalzo  
Phoenix

Maria Baier  
State Land  
Commissioner

Renée E. Bahl  
Executive Director

Arizona State Parks  
1300 W. Washington  
Phoenix, AZ 85007

Tel & TTY: 602.542.4174  
AZStateParks.com

800.285.3703 from  
(520 & 928) area codes

General Fax:  
602.542.4180

Director's Office Fax:  
602.542.4188

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cultural values. It is also important from the visual perspective, from the mountain ranges looking down into the basins. Therefore, within known cultural landscapes, we recommend that those basins that are situated in more remote (i.e., further from roads and/or transmission infrastructure) locations be preserved, while still allowing plenty of acreage to be available elsewhere for potential solar development.

- 4) Please keep our office updated on the status of tribal consultations within Arizona regarding this undertaking. Thank you.

We look forward to reviewing the next draft of the PEIS. We appreciate your continued cooperation with this office in complying with the historic preservation requirements for federal undertakings. If you have any questions or concerns, please feel free to contact me at 602/542-7138, or e-mail me at [ahoward@azstateparks.gov](mailto:ahoward@azstateparks.gov).

Sincerely,



Ann Valdo Howard  
Public Archaeology Programs Manager and  
Senior Archaeological Compliance Specialist  
Arizona State Historic Preservation Office

- C: Solar Energy PA, Argonne National Laboratory, 9700 S. Cass Avenue –  
EVS/240, Argonne, IL 60439  
Michael Johnson, Deputy HPO, BLM State Office  
Connie Stone, Ph.D., Archaeologist, Renewable Energy Coordination Office;  
BLM State Office

"H. Marie

Brashear"

<waterforwildlife

To

@gmail.com>

[linda\\_resseguie@blm.gov](mailto:linda_resseguie@blm.gov),

[jane.summerson@ee.doe.gov](mailto:jane.summerson@ee.doe.gov)

05/20/2011 05:35

cc

PM

Chuck Bell <[chuckb@sisp.net](mailto:chuckb@sisp.net)>,

[samiam@iwvisp.com](mailto:samiam@iwvisp.com)

Subject

Solar PEIS one last comment

Solar\_040

I am submitting this final comment on the Solar PEIS after the formal closing for myself and the Society for the Protection and Care of Wildlife. 43CFR2920.1-1 a which I quote below says basically that when there are significant dollars spent on the land involving substantial construction, development, or land improvement and the investment of large amounts of capital which are to be amortized over time must be leased at fair market value. Transmission Corridors qualify as ROW but not the non SEZ project sites nor the SEZ. They must be leased at fair market value. This would apply to the recently approved PEIS for Wind Energy, as well. The key word below is "shall".

Title 43: Public Lands: Interior

PART 2920—LEASES, PERMITS AND EASEMENTS

Subpart 2920—Leases, Permits and Easements: General Provisions

§ 2920.1-1 Authorized use.

Any use not specifically authorized under other laws or regulations and not specifically forbidden by law may be authorized under this part. Uses which may be authorized include residential, agricultural, industrial, and commercial, and uses that cannot be authorized under title V of the Federal Land Policy and Management Act or section 28 of the Mineral Leasing Act. Land use authorizations shall be granted under the following categories:

(a) Leases shall be used to authorize uses of public lands involving substantial construction, development, or land improvement and the investment of large amounts of capital which are to be amortized over time. A lease conveys a possessory interest and is revocable only in accordance with its terms and the provisions of §2920.9-3 of this title. Leases shall be issued for a term, determined by the authorized officer, that is consistent with the time required to amortize the capital investment.





Blythe Area Chamber of Commerce  
and Tourist Information Center

201 South Broadway  
Blythe, California 92225  
USA

Phone (760) 922-8166  
Fax (760) 922-4010

March 1, 2011

Secretary of the Interior Ken Salazar  
U. S. Department of Interior  
1849 C Street, NW  
Washington, DC 20240

Dear Secretary Salazar:

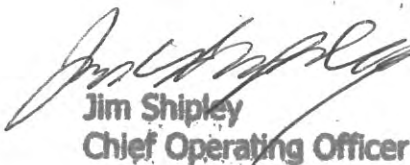
Thank you for putting forth the major undertaking of Solar Energy Zones Plans and providing public comment opportunity for best results in local communities. Our region, based on our climate, has been highly pursued for industry development and we welcome the opportunity.

As the Chief Operating Officer of the Blythe Chamber of Commerce, I'm excited about the good jobs and clean energy solar development ca bring to our region. However, our unique desert landscape is the lifeblood of Blythe's tourism economy and of many communities in our region. We need to take steps to protect this environment as we consider where to locate new solar projects.

The Departments of Interior and Energy should support the Solar Energy Zones (SEZs) and ensure that all large-scale solar projects are clustered in appropriately sites places that have high solar energy potential and the fewest impacts to water and wildlife. This will allow us to benefit from both modern technology and the beauty of Southern California deserts.

We applaud you, Mr. Secretary, for your focus to bring development into SEZs and ensure America's historic transition to clean energy is smart from the start.

Sincerely,

  
Jim Shipley  
Chief Operating Officer

OFFICE OF THE EXECUTIVE DIRECTOR  
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MAR 28 2011  
MAR 28 2011  
MAR 28 2011



# Audubon NEW MEXICO

Randall Davey Audubon Center  
 P.O. Box 9314  
 Santa Fe, NM 87504-9314  
 Tel: 505-983-4609  
 Fax: 505-983-2355

April 7, 2011

Secretary Ken Salazar  
 Department of the Interior  
 1849 C Street, N.W.  
 Washington DC 20240

Re: Solar PEIS

Dear Secretary Salazar:

On behalf of the 6,000 plus members of Audubon across New Mexico, I am writing to inform you that we are encouraged by and support the general concept of solar zones across the West to increase renewable energy in our country. Compared to traditional energy sources, solar power, along with other renewable-energy sources and energy conservation, provides significant environmental benefits for birds, wildlife, and their habitats, particularly in the face of climate change impacts. Audubon supports solar power development provided that it is sited, designed, constructed, and operated to responsibly minimize harmful impacts on the environment. We also welcome the opportunity to participate in the U.S. Bureau of Land Management's public comments so that we can make sure to safeguard New Mexico's treasured desert landscapes.

Audubon New Mexico does have concerns with the current Solar Energy Development Draft Programmatic Environmental Impact Statement (or Solar PEIS) by BLM. In our analysis, the current Solar PEIS seems to lack overall analysis on the impacts of this program on wildlife and wild lands in New Mexico.

We like that in the Solar Energy Zone (SEZ) alternative, BLM would limit development to the 677,000 acres in the prescribed zones. The SEZ Alternative would designate Solar Energy Zones in areas that have been identified by BLM with a priority on excellent solar resources, flat land and proximity to existing roads and electrical transmission lines, and limited conflicts with important wildlife habitat, wildlands, recreation areas, and other resources and values. The SEZ Alternative would require that solar projects be built in these low-conflict areas.

However, there appears to be little analysis for the 21.5 million acres outside the solar zones opened to solar development under the preferred alternative. In summary, this draft PEIS in its current form is inadequate. Some partners in our conservation coalition are worried that a number of prospective zones in the PEIS have little potential for producing solar energy and have limited or no access to transmission lines. Audubon's concerns are that proposed zones will cause major conflicts with wildlife habitat and cultural treasures. Lastly, the PEIS is also lacking technically-informed criteria for adding, modifying, or eliminating zones in the future.



Specifically in New Mexico, the Afton SEZ site has relatively few conflicts and is utilized by fewer concentrations of wildlife than the Mason Draw SEZ site, and therefore we recommend the Afton site designation as a SEZ. While recommended for solar development, there are still many precautions which must be taken in order to ensure minimal impacts to existing water resources and Best Management Practices for wildlife should be utilized.

I am hoping that you will take this opportunity to make history with a solar energy plan that balances the need for clean, renewable energy with the need to protect the public lands that make up our Western heritage. At this point, we are concerned that instead of making history, this process is in danger of falling apart. While some stakeholders continue to work together, concerns about the final product and a lack of flexibility in the PEIS process are creating divides that could open the door to public opposition, negative press, and contentious litigation.

**We need your leadership and vision to get this effort back on track.** You have the ability to make the needed changes to the PEIS, and the credibility to bring everyone back to the table to find a solution that works for all stakeholders. The Solar PEIS needs to have an analysis on the impacts of this program on wildlife and wild lands in New Mexico.

Thank you for your assistance.

Sincerely,



Karyn Stockdale  
Executive Director

Cc: Senator Jeff Bingaman  
Senator Tom Udall



## FRIENDS OF SADDLE MOUNTAIN

3708 N 339th Ave

Tonopah, AZ 85354

U.S. Department of the Interior  
 Secretary Ken Salazar  
 1849 C Street, N.W.  
 Washington DC 20240

April 14, 2011

Dear Secretary Salazar,

The Friends of Saddle Mountain (FoSM) would like to express it's deepest concern about construction or even the proposal of constructing solar sites on public lands. As an organization dedicated to the environment, we do agree that renewable energy would be advantageous to us all and we applaud the approach and time the Bureau of Land Management (BLM) has spent to identify the potential "Solar Energy Zones" as options for future solar development.

Several of the locations (i.e. Gillespie, and Brenda in Arizona) do suggest that the BLM shares some of our concern in that they have chosen areas that at face value seem to represent potentially minimal impact to the environment, flora and fauna that still reside there. A few of these study sites also seem to be areas where historic grazing or other activities have damaged the land. With that said however, these areas may be worthy candidates for natural restoration and/or are already used by the general public for numerous types of recreational activities. Surely those same recreational activities would be impacted and most likely halted if solar development was permitted to move forward.

In addition, we recognize that public land where people may experience the great outdoors is becoming harder to come by. With all of the private land holdings now being offered, it would seem that other privately held land purchase and/or lease options are more plausible and publicly acceptable. Fallow farm land is an example of land that should in our opinion be considered by solar developers over pristine or even damaged public land.

In an effort to hold onto the few public use and wild places that are remaining, we would encourage the Bureau of Land Management to manage lands under it's control in ways favourable to longterm protection. For us at FoSM, construction just doesn't make sense. Once built upon, recovery is near impossible and the land's natural treasures are forever lost. Let's continue to work together and save what's left!

Sincerely

Paul Roetto  
 President, FoSM

[contact@fosmaz.org](mailto:contact@fosmaz.org)

[www.fosmaz.org](http://www.fosmaz.org)

cc: Bob Abbey, Director BLM, Jim Kenna, AZ State Director BLM Ray Suazo, Associate AZ State Director BLM, Angelita Bullets, PHX. District Manager BLM, Emily Garber, Lower Sonoran Field Manager BLM

April 10, 2011

Dear Secretary Salazar,

The recently released Solar Energy Draft Programmatic Environmental Impact Statement is an important step forward for solar energy development in the U.S. because it encourages renewable energy development while protecting wildlife. The designation of 24 Solar Energy Zones is one important way that the Solar Energy Draft PEIS accomplishes this goal.

The Solar Energy Draft PEIS can be made even stronger by limiting solar energy development to only the 24 Solar Energy Zones.

While a process should be established to formally identify and review additions solar zones, until then additional public land outside the 24 zones should not be developed because:

- 1) the need for additional space for development has not been demonstrated and
- 2) the additional land has not been thoroughly examined for possible wildlife conflicts.

I also encourage the Department of the Interior to make sure that in cases where crucial wildlife habitats for big game and sage grouse overlap with Solar Energy Zones, these critical habitat areas are also placed off-limits to development.

I believe that solar energy must be developed quickly in the United States; however, the best way to get solar energy projects built quickly is to plan them responsibly from the start. Please take these steps to make sure that America's solar industry is wildlife-friendly. With a strong Solar Energy PEIS, we can ensure that we set the best precedent for solar energy development in our country.

Sincerely,



Randy Harrison  
4051 Wagner St  
Eugene, OR 97402

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**California Desert & Renewable Energy Working Group**  
c/o Resources Legacy Fund  
555 Capitol Mall, Suite 675  
Sacramento, CA 95814

April 12, 2011

The Honorable Ken Salazar  
Secretary of the Interior  
Department of the Interior  
1849 C Street NW  
Washington, DC 20241

**Re:** Request for Extension of Time to File Comments in Response to Notice of Availability of the Draft Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States

Dear Secretary Salazar:

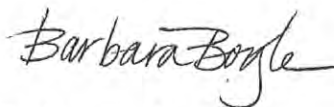
On behalf of the undersigned organizations, we hereby formally request that the Bureau of Land Management (BLM) allow an additional fourteen (14) days to respond to the BLM's Notice of Availability of the Draft Programmatic Environmental Impact Statement (PEIS) for Solar Energy Development in Six Southwestern States. Stakeholders and members of the public need additional time to prepare more comprehensive comments that will assist the BLM in making decisions about solar energy development on our public lands. Because of the complexity of the issues presented and our interest in providing the BLM thoughtful responses to the numerous policy questions raised in the draft PEIS, we believe an extension is warranted. We appreciate the BLM's consideration of this request, and look forward to its response.

500332

Respectfully submitted,



Darren Bouton  
First Solar, Inc.



Barbara Boyle  
Sierra Club

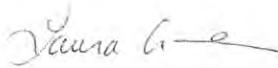
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EXECUTIVE SECRETARY

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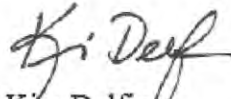
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Secretary Ken Salazar  
April 12, 2011  
Page 2 of 2



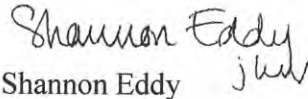
Laura Crane  
The Nature Conservancy



Kim Delfino  
Defenders of Wildlife



Pamela Pride Eaton  
The Wilderness Society



Shannon Eddy *shw*  
Large-scale Solar Association



Sean Gallagher  
kRoad Power



Garry George  
Audubon California



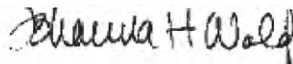
Arthur Haubenstock  
BrightSource Energy




Jim Lyon  
Defenders of Wildlife



Michael Mantell, Chair  
California Desert & Renewable Energy  
Working Group



Johanna Wald  
National Resources Defense Council



Peter Weiner  
Solar industry attorney



V. John White  
Center for Energy Efficiency  
& Renewable Technologies

cc: David Hayes, Deputy Secretary  
Steve Black, Senior Counselor to the Secretary of the Interior  
Robert Abbey, Director, Bureau of Land Management

{00146443.DOC.}

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April 13, 2011

Christine Baker  
7308 Westwood Dr  
Tamarac, FL 33321

Bureau of Land Management's  
Director Robert V Abbey  
1849 C Street NW, Rm. 5665  
Washington DC 20240

Subject: Solar Energy PEIS

Dear Mr. Abbey:

Hello, my name is Christine Baker, and I am writing to you today to urge you to adopt a modified solar energy zones alternative in the final Solar Programmatic Environmental Impact Statement (PEIS). By modifying the solar energy zones solar-energy development on public lands will have a minimal impact on wildlife and streamline approvals for future solar projects.

To do this we must; Modify, drop, or add zones, from appropriate areas, keep in compliance with existing BLM wildlife policies, require mitigation for impacts on wildlife, engage in the conservation of water resources and ensure projects with high conflict with wildlife don't go forward.

I encourage you to strongly consider adopting a modified version of the solar energy zones alternative in the PEIS.

Thank you for your time, I look forward to your reply.

Sincerely,



Christine Baker

April 13, 2011

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Dear Secretary Salazar: 500596

2011 APR 20 PM 3:13

RE: Please Protect Public Lands While Developing Solar Energy

I strongly support our nation's need to transition from dirty coal and fossil fuels to clean renewable energy. I also strongly support protection of our public lands. We can do both.

I am writing to ask you to please choose the "zones only" alternative for developing solar energy on public lands. This will ensure that we focus solar in places with the fewest possible environmental impacts, and prevent fragmentation of important wildlife habitat and movement corridors.

Please do not open an additional 22 million acres to solar applications. This will fragment wildlife habitat and put ecosystems and endangered species at risk.

Instead, allow careful consideration of new solar zones in the right places by using a location-specific Environmental Impact Statement for each proposed new zone.

Finally, please make sure that strong monitoring of wildlife impacts and full mitigation of all environmental impacts are included system-wide. The region includes fragile and irreplaceable desert ecosystems, with rare and endangered plants and animals and precious desert wild lands.

Thank you for your help to develop solar energy as sensitively as possible, and only in the right places, to preserve these desert ecosystems and wild lands for future generations.

Yours truly,



J. Capozzelli  
315 West 90<sup>th</sup> Street  
New York, NY 10024

Faint, illegible text and markings at the bottom of the page, possibly bleed-through or scanning artifacts.



Linn D. Barrett  
4305 29<sup>th</sup> Street Road  
Greeley, CO 80634

Ken Salazar  
Secretary of the Interior  
Department of the Interior  
1849 C Street, N.W.  
Washington DC 20240

April 12, 2011

**Re: Please choose the solar energy zones alternative!**

Dear Secretary Salazar,

I want a nation that employs clean energy! But more than that, I want clean energy that does not compromise wildlife, wild lands, and water.

I am aware of the huge, six-state, solar energy management project in the desert Southwest. And I understand that the draft solar programmatic environmental impact statement (PEIS) released by your Department and the Bureau of Land Management lays the foundation of this project. Thank you for the opportunity to commend on this PEIS, as I have a few things to say about it.

1. Not all of the 22 million acres proposed for solar development, are appropriate for solar development. Land designated as part of the National Wilderness Preservation System (1.5 million acres) and important wildlife habitats/corridors are not appropriate for solar development.
2. The desert Southwest does not require 22 million acres of solar development. The PEIS reveals that this acreage amounts to approximately one hundred times more land than is necessary to reasonably meet the region's renewable energy needs.
3. The preferred alternative must be rejected and the solar energy zone alternative must be adopted. The energy zone alternative restricts solar power plants to BLM-designated appropriate development zones, and these zones are the best places with the best chances for successful projects. Therefore solar development in these zones will be faster, cheaper and better for the environment, consumers and project developers.
4. California's Pisgah and Iron Mountain zones must be excluded, and the new program must include a process for developing additional zones if needed in the future if needed.

Please remember that I am a tax-paying citizen of the United States, and that the public lands of the desert Southwest belong to me, too. Please choose the solar energy zones alternative to govern future solar development and to ensure that these huge projects are guided to the most appropriate locations without sacrifice of natural resources. Thank you.

With utmost conviction and sincerity,

  
Linn D. Barrett



March 8, 2011

Secretary of the Interior Ken Salazar  
U.S. Department of Interior  
1849 C Street NW  
Washington, DC 20240

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RECEIVED  
2011 APR 25 PM 3:42  
OFFICE OF THE  
SECRETARY

Secretary of Energy Steven Chu  
U.S. Department of Energy  
825 N Capitol St  
Washington D.C., DC 20002

Dear Honorable Secretary Salazar,

Thank you for putting forth the major undertaking of Solar Energy Zones Plans and providing public comment opportunity for best results in local communities.

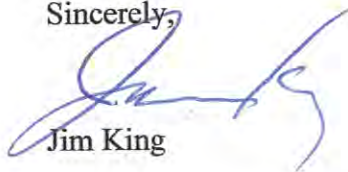
I am writing in regards to the recently released Solar Programmatic Environmental Impact Statement. This document suggests appropriate sites for solar project on public lands in six western states, including California.

Renewable energy development brings with it the exciting prospect of new jobs. We support a balance of that opportunity with protecting our desert landscape and the many jobs that depend on tourism and outdoor recreation in our region. Additionally, it is important that we seek the most efficient technology that would have the least effect on our precious water resources. And, finally, the end result should include sites and transmission lines on previously disturbed land locations, whenever possible, to ensure the proper compliment with our environment and quicken our use of renewable energy.

I fully support advancing solar energy technology. In fact, I recently added solar to the roof of my home here in Palm Springs. Nothing will give me greatest joy than to personally contribute to the national goal of providing, renewable energy and environmentally-conscious projects.

Thank you again for your consideration of our local views.

Sincerely,



Jim King

ALMA F. BLACKWELDER  
1707 WOODLAND AVENUE  
BURLINGTON, NORTH CAROLINA 27215

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Solar\_050

REC'D MAY - 2 2011

April 21, 2011

Bureau of Land Management  
1849 C Street, NW Room 5665  
Washington, D.C. 20240

Dear Sirs:

I am writing to suggest that the Bureau of Land Management's attempt to develop renewable energy on our public lands must be developed "smart from the start." I know the potential impacts that climate change poses to wildlife worldwide and I also understand the growing energy demand our nation faces.

Renewable energy development on our public lands should be focused on areas that minimize impacts to wildlife and wild lands so that we can develop this vital energy source quickly and still protect treasured lands and wildlife.

The best way for BLM to ensure the protection of wildlife and wild lands and streamline the approval of new solar energy projects is for the agency to adopt a modified solar energy zones alternative in the final Solar Programmatic Environmental Impact Statement. BLM should modify the solar energy zones alternative to:

Include a process to modify, drop or add zones, as necessary but only from appropriate areas. It should exclude the Pisgah and Iron Mountain zones in California.

Ensure compliance with existing BLM wildlife policies and ensure no net loss of wildlife and improvement in threatened and endangered species habitat where possible.

Require proper mitigation for impacts to wildlife, both permanent and temporary, including compensatory mitigation for unavoidable impacts.

Promote proper conservation of limited water resources in present and future zones.

Ensure that projects that will have a high conflict with wildlife resources do not go forward.



Page Two  
April 21, 2011

By modifying the solar energy zones alternative with these critical elements, BLM can ensure that solar energy development on our public lands has a minimal impact on wildlife and that it also helps to streamline approvals for new solar projects. This not only presents a win-win situation for both wildlife and solar energy, but also moves our nation closer to a more secure energy independent future.

I encourage you to strongly consider adopting a modified version of the solar energy zones alternative in the PEIS.

Thank you for your consideration.

Sincerely,



Alma Blackwelder



## BIG PINE PAIUTE TRIBE OF THE OWENS VALLEY

### *Big Pine Paiute Indian Reservation*

June 9, 2011

Linda Resseguie  
 BLM Solar PEIS Project Manager  
 Solar Energy PEIS  
 Argonne National Laboratory  
 9700 S. Cass Avenue  
 EVS/240  
 Argonne, IL 60439

RE: 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)*

Dear Ms. Resseguie:

Thank you for extending the comment period for tribes for the PEIS. Also, the Big Pine Paiute Tribe of the Owens Valley (Tribe) would like to thank the Bureau of Land Management staff for their presentation on the PEIS at the Big Pine Tribal Council meeting on April 6, 2011.

The Big Pine Paiute Tribe of the Owens Valley has a long history of protecting the land, air, and water of the Owens Valley. The Solar PEIS is proposing to zone areas within the ancestral lands of the Tribe as suitable for large-scale industrial solar power plants. Since this first tier of environmental review may pave the way for environmentally and culturally harmful projects on lands unsuitable for large-scale solar development, the Tribe is strongly opposed to the alternatives as proposed in the Solar PEIS.

#### **The Solar PEIS is too large in scope.**

Even though the comment period has been extended for tribes because of the lateness of consultation, the 11,000 page document has been impossible to adequately analyze due to its large size. The Tribe has mostly focused on Inyo County, CA, although the PEIS evaluates BLM lands in California, Arizona, Colorado, Nevada, New Mexico, and Utah. Simply stated, the project is too large in scope for an adequate review under NEPA and Section 106 of the National Historic Preservation Act. The same was true for the Wind energy PEIS, Geothermal Resources Leasing PEIS, and the Energy Corridors PEIS. For these PEIS documents, the consultation was nonexistent or belated, and the projects offered inadequate alternatives. Massive programmatic EIS's are very poor planning documents.

**Consultation was inadequate.**

The initial consultation letter for the draft PEIS and the accompanying draft Programmatic Agreement (PA) were not received by the Tribe until the middle of February, even though the draft PEIS was released in December 2010, and the draft PA was distributed to certain parties (but not tribes) in the fall of 2010. Tribal consultation was coordinated by Argonne National Laboratory, an entity with no government-to-government relationship with the Big Pine Paiute Tribe. Once again, there was no coordination with the local BLM field offices which have established relationships with tribes and could have initiated consultation in a more efficient manner. However, BLM staff from the CA state office and Bishop and Ridgecrest field offices did provide excellent material at the consultation meeting requested by the Tribe at the Tribal Council meeting of April 6, 2011.

**There is no congressional or executive mandate to build utility-scale solar projects on BLM land.**

The language “it is the sense of Congress” (from the Energy Policy Act of 2005) provides guidance, but there is no explicit mandate required by this Act. Since solar technologies are rapidly evolving, it is especially important to have flexibility in choosing the types of solar projects which are the most environmentally sustainable. There is no mandate to steer renewable energy development on BLM land when there are other less damaging alternatives, such as rooftop solar development on private or tribal lands, or making use of lands that are considered brownfields.

**The “Alternatives” section of the PEIS is inadequate.**

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.

The “No Action” Alternative would evaluate utility scale solar projects on a case-by-case basis, which is the existing policy. This alternative, as stated, should be rejected because the existing policy has led to numerous lawsuits due to siting on environmentally and culturally sensitive lands. There needs to be a better plan, and there must be reasonable alternatives, comprehensive data, and tribal consultation before choosing such a plan. Coordinating planning with the EPA’s *RE-Powering America’s Land: Siting Renewable Energy on Potentially Contaminated Land and Mine Sites* could contribute to this effort.

The *Solar Energy Development Program Alternative (the Preferred Alternative)* allocates 22 million acres for utility-scale solar development on BLM lands. However, there was little or no

“ground-truthing” in the development of this alternative, and environmentally and culturally sensitive lands were chosen for utility scale solar development. In Inyo County, CA, lands designated for solar development were located in culturally sensitive areas, such as land east of the Big Pine Indian Reservation, near the base of the Inyo Mountains, and in the lava flow blackrock country south of the Reservation.

The *Solar Energy Zone Program Alternative* (as well as the other two alternatives) does not select BLM lands that are designated as brownfields, which is a key criterion that was listed in the 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).

It appears that most of the areas proposed for utility scale solar energy projects on BLM lands do not meet this basic siting principle.

The Solar Energy Zones (SEZ) for California (Imperial East, Iron Mountain, Pisgah, and Riverside East) are not appropriate because they are in environmentally and/or culturally sensitive areas. Imperial East is not appropriate because of potential impacts to cultural sites of the Quechan Tribe. Potential negative impacts to the traditional cultural landscapes for these areas were also not assessed because ethnographic studies were not completed.

### **Comments on the draft Programmatic Agreement among the United States Department of Interior, Bureau of Land Management, the Arizona State Historic Preservation Officer, the California State Historic Preservation Officer, the Colorado State Historic Preservation Officer, the New Mexico State Historic Preservation Officer, the Nevada State Historic Preservation Officer, the Utah State Historic Preservation Officer, and the Advisory Council on Historic Preservation regarding Solar Energy Development on Lands Administered by the Bureau of Land Management (Solar PA)**

As stated above, the draft Solar PA was not sent to the Big Pine Paiute Tribe until the middle of February, two months after the distribution of the draft PEIS. All of the signatories know that Section 106 consultation with tribes needs to be conducted at the earliest possible time, and the NEPA regulations require coordination with Section 106, yet this was not done. The massive,

fast-track nature of the PEIS has made it virtually impossible for the BLM to conduct any meaningful consultation with tribes. This problem was made worse by not involving the local BLM field offices in the consultation process. In addition, the ACHP did not provide any oversight for the consultation process with tribes for the PEIS or PA, and did not contact tribes to make sure that the Section 106 consultation process was being followed. Consultation through the Argonne National Laboratory does not work.

The Solar PA states:

- a) Tribal Consultation
  - i) The BLM, acknowledging its government-to-government responsibilities for Section 106 review and implementation of this PA, continue to facilitate meaningful consultation with Indian tribes during the development of the Solar PEIS, as well the planning and implementation of any activities or decisions that tier to the Solar PEIS.
  - ii) Given the nature and scale of solar energy projects, the BLM will emphasize engaging tribes in early and meaningful tribal consultation. Tribal consultation for proposed solar energy projects shall focus on working with tribes at the earliest stages of the proposed undertaking to gather ethnographic information, property information, and other resource information to help identify significant properties or issues, especially information about properties and landscapes to which Indian tribes attach religious or cultural significance. Engaging in consultation at the earliest stages of project planning will assist in identifying significant issues and resources that may not be identified through the course of conventional cultural resources survey and identification efforts.
  - iii) Because of the potential number, size, and scale of proposed energy projects in any given area, the BLM will also endeavor to combine consultations on multiple projects or invite tribes to meetings where multiple projects may be discussed and coordinated in order to facilitate coordination and information exchange, minimize confusion about the number of projects, and provide for a more effective and productive process of tribal consultation.

However, meaningful consultation was never conducted for the development of the Solar PEIS or the PA. The PA also states:

The Section 106 process shall be coordinated with the NEPA process such that it meets its requirements under both authorities in an efficient manner and completes the Section 106 process within the time frame of the NEPA process and does not delay the approval or ROD for all future solar energy facilities authorized pursuant to this program. (p. 3)

The Section 106 process was not coordinated with the NEPA process in the development of the PEIS or the PA, and due to the scope of the undertaking, it may be impossible to do so. It is

recommended that if the Section 106 process is not completed, including full government-to-government consultation with all affected tribes, then there should be no approval of the ROD until the Section 106 process is complete to the satisfaction of the affected tribes.

**Conclusion.**

The Solar PEIS and its accompanying Solar PA are both flawed because the scope of the project is too large to conduct meaningful environmental review and meaningful tribal consultation. Moreover, the project was unnecessary because there was no mandate to designate thousands or millions of acres of BLM land for industrial-scale solar developments. 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.

While large solar companies and their investors received billions of dollars in ARRA funds, tribal communities received very little funding for the development of rooftop solar installations for tribal buildings and residences. If this had been done, more jobs could have been created for tribal members and the Big Pine Reservation would have been more energy efficient. The Solar PEIS is the wrong model for the United States and BLM to take with regard to solar renewable energy development.

Sincerely,

A handwritten signature in black ink, appearing to read "Virgil Moose". The signature is fluid and cursive, with a large initial "V" and a long, sweeping underline.

Virgil Moose  
Tribal Chairperson



Linda Resseguie, BLM Solar PEIS Project Lead  
Solar Energy PEIS  
Argonne National Laboratory  
9700 S. Cass Avenue – EVS/240  
Argonne, IL 60439

June 2, 2011

Re: Comments on Draft Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States submitted on behalf of the Audubon Society and others on April 29, 2011

Dear Ms. Resseguie:

Kerncrest Audubon Society is aware that the period for public comments on the Draft Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States (DPEIR) is closed. However, we wish to make the Bureau of Land Management (BLM) aware that subject comments submitted on "behalf of the Audubon Society" did not represent the position of the Kerncrest Audubon Society, which is the incorporated branch of the National Audubon Society that represents the members living in the Indian Wells and Kern River Valleys, and in Ridgecrest, California.

Kerncrest Audubon Society did not submit comments on the DPEIR because we fully support the recommendations of the BLM in that document. We therefore chose to use our limited time and resources to participate as interveners in the Ridgecrest Solar Power Project 09-AFC-9 application for development of a solar generation facility in the Indian Wells Valley south of Ridgecrest.

We were opposed to that project for the same reasons we object to the proposal in subject comments that a solar energy zone be created in the same vicinity. The area is in what has been considered likely genetic connectivity for core populations of the Mojave Ground Squirrel. Also, the Indian Wells Valley is already in a severe groundwater overdraft situation and the water required for construction of that facility and for washing the mirrors after construction would put additional strain on our water supplies.

While the triangle proposed in Appendix C of subject comments is across highway 395 and in a marginally better location (more previously disturbed), the ground squirrel connectivity issue could still apply. The water issue would definitely still apply. In addition, the triangle identified is under the flight path of military aircraft approaching Armitage Field on the Naval Air Weapons Station and the station's north test ranges.

If a distinction is made allowing only photovoltaic energy production in this area, our opposition is potentially less intense, provided the Mojave Ground Squirrel is not present.

We recognize these comments will not be incorporated as public comments in documentation of this process. We hope nevertheless they will find their way into the hands of BLM staff working on preparation of the framework. We want it to be known that subject comments were prepared without the participation of or consultation with the local chapter of the Audubon Society and do not represent our opinions.



Brenda Burnett  
President, Kerncrest Audubon Society  
P.O. Box 984, Ridgecrest CA 93556  
760-382-4935  
chatbind@verizon.net

Mar 31, 2011

Ken Salazar

Subject: Protect Public Lands While Developing Solar Energy

Dear Ken Salazar,

I strongly support our nation's need to transition from dirty coal and fossil fuels to clean renewable energy. I also strongly support protection of our public lands. We can do both!

Please choose the "zones only" alternative for developing solar energy on public lands. This will ensure that we focus solar in places with the fewest possible environmental impacts, and prevent fragmentation of important wildlife habitat and movement corridors.

Please do not open an additional 22 million acres to solar applications. This will fragment wildlife habitat and put ecosystems and endangered species at risk. Instead, allow careful consideration of new solar zones in the right places by using a location-specific Environmental Impact Statement (EIS) for each proposed new zone.

Finally, make sure that strong monitoring of wildlife impacts and full mitigation of all environmental impacts are included system-wide.

Sincerely,

Apr 17, 2011

Ken Salazar

Subject: Develop environmentally responsible solar projects across our public lands

Dear Ken Salazar,

Like you, I support a rapid transition for our nation from an economy based on fossil fuels to one that is based on clean energy, and I understand that our public lands will play an important role in making that transition. But if not properly sited and operated, large-scale solar power plants can seriously harm wildlife, wildlands, water supplies and other highly valued resources on our public lands.

Solar plants must be built in appropriate places, rather than scattered across the landscape if we are to avoid such harms and generate clean energy at a pace and scale necessary to significantly reduce pollution, create new jobs and address the global climate challenge.

The draft solar programmatic environmental impact statement (PEIS) released by your Department and the Bureau of Land Management will lay the foundation for a long-term program to manage the solar resources of a huge six-state area of the desert Southwest. The preferred alternative identified in the draft statement would allow solar development on over 22 million acres. Included in this acreage are extensive areas of the public's lands that are simply inappropriate for solar development, such as more than 1.5 million acres of lands that qualify for designation as part of the National Wilderness Preservation System as well as important wildlife habitats and corridors and other unique and sensitive resources. What's more, the PEIS reveals that this acreage amounts to nearly one hundred times more land than is necessary to meet the region's reasonably foreseeable needs for renewable energy from the sun.

I urge you to reject the preferred alternative and instead to adopt the solar energy zones alternative analyzed in the PEIS. This alternative would restrict solar power plants to zones designated by the BLM as appropriate for development based on criteria that take into account not just the technological needs of the solar industry, but also the need to direct solar projects to places that have fewer environmental conflicts as well as needed roads and transmission lines. By focusing on places with the best chances for successful projects, the zones alternative would lead to solar development that is faster, cheaper and better for the environment, consumers and project developers. I also urge you to improve this alternative first by excluding inappropriate proposed zones, such as California's proposed Pisgah and Iron Mountain zones. The new program should also include a process for developing additional zones in the future if needed, together with measures that will conserve the already limited water resources of the region and ensure that unavoidable impacts of these projects are fully and permanently mitigated.

Please choose the solar energy zones alternative to govern future solar development on our public lands so that these very large projects are guided to the most appropriate locations and precious public resources

are not sacrificed.

Sincerely,

## Defenders of Wildlife Campaign Letter

As a supporter of Defenders of Wildlife, I recognize the potential impacts that climate change poses to wildlife worldwide. I also understand the growing energy demand our nation faces. But while I support BLM's attempt to develop renewable energy on our public lands, BLM must work to ensure these projects are developed "smart from the start." Renewable energy development on our public lands should be focused on areas that minimize impacts to wildlife and wild lands so that we can develop this vital energy source quickly and still protect treasured lands and wildlife. The best way for BLM to ensure the protection of wildlife and wild lands -- and streamline the approval of new solar-energy projects -- is for the agency to adopt a modified solar energy zones alternative in the final Solar Programmatic Environmental Impact Statement (PEIS). BLM should modify the solar energy zones alternative to:

- \* Include a process to modify, drop, or add zones, as necessary, but only from appropriate areas. It should exclude the Pisgah and Iron Mountain zones California.
- \* Ensure compliance with existing BLM wildlife policies, and ensure no net loss of wildlife and improvement in threatened and endangered species habitat where possible.
- \* Require proper mitigation for impacts to wildlife, both permanent and temporary, including compensatory mitigation for unavoidable impacts.
- \* Promote proper conservation of limited water resources in present and future zones.
- \* Ensure that projects that will have a high conflict with wildlife resources do not go forward.

By modifying the solar energy zones alternative with these critical elements, BLM can ensure that solar-energy development on our public lands has a minimal impact on wildlife and that it also helps to streamline approvals for new solar projects. This not only presents a win-win situation for both wildlife and solar energy, but also moves our nation closer to a more secure, energy-independent future. I encourage you to strongly consider adopting a modified version of the solar energy zones alternative in the PEIS.

Thank you for your consideration.

**Standard Review Form**  
**Draft Programmatic Environmental Impact Statement:**  
**Solar Energy Development in Six Southwestern States**

**Reviewer's Name:** DAN MCGLOTHLIN                      **Reviewer's Organization:** NATIONAL PARK SERVICE

**Reviewer's email address:** dan\_mcglathlin@nps.gov                      **Reviewer's Telephone numbers:** 970-225-3536

**Primary Disciplinary Area (e.g., ecology, land use planning, regulatory oversight):** NPS Consolidated Comments

**Section or Chapter Number and Date of Reviewed Document:** December 2010 Draft Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States

EIS Section	Page/Line	Comment/Suggested Revision	Action (for use by ANL)
Overall Comment 1		<p><b>The PEIS must acknowledge the responsibility and build in safeguards to protect national parks and other special status areas administered by the NPS.</b> We believe the PEIS must articulate the affirmative commitment of the Department of the Interior to safeguard our national parks and other special status areas under NPS administration, such as national trails and national natural and cultural landmarks. While we recognize the need to transform our nation's energy portfolio, the solar energy development program must be developed in a thoughtful and strategic manner, i.e., "Smart from the Start," that protects our nation's natural and cultural heritage. The NPS and the Secretary have an affirmative obligation under the NPS Organic Act of 1916 to protect these resources from the potential adverse affects of energy development. The 1978 amendments to the Organic Act make clear that "the authorization of activities shall be construed and the protection, management and administration of these areas shall be conducted in light of the high public value and integrity of the National Park System and shall not be exercised in derogation of the values and purposes for which these areas have been or shall be directly and specifically provided by Congress." (16 USC§ 1a-1)</p>	



ATTACHMENT 1

		<p>Clear policy statements should be included in the PEIS that ensure that solar energy development may occur on the public lands only where it would not result in unacceptable impacts to the resources and values of units of the National Park System and other special status areas under NPS administration.</p>	
Overall Comment 2		<p><b>The preferred solar energy development program alternative poses a significant risk to national parks and other special status areas administered by the NPS.</b> For purposes of evaluating how many National Park System units may be affected by solar energy development under the preferred alternative, we adopted a 25-mile distance to assess the number of parks in the six-state area and acreage of lands proposed to be available for solar energy development. This 25-mile distance is based on the maximum distance analyzed in the Draft PEIS of visual resource impacts for the proposed SEZs (i.e., a 25-mile distance from the SEZ; see page 5-164).</p> <p>There are 52 NPS units (not including national trails) in the six-state study area that are located within 25 miles of public lands identified under the preferred alternative (see Attachments 2 and 3). These parks received over 37 million visitors in 2010, and accounted for spending by non-local visitors of almost \$2 billion and supported over 27,000 jobs in local communities during 2009. In addition, 5 national trails have the potential to be impacted under the preferred alternative. Our national parks and trails are integral to the southwestern United States’ landscape and possess sensitive natural and cultural resources that fall under the legal protections of the NPS Organic Act of 1916, as amended.</p>	
Overall Comment 3		<p><b>The SEZ-only alternative with modifications should be adopted as the preferred alternative in the Final PEIS.</b> We strongly recommend that BLM select the SEZ-only alternative, with certain revisions, as its preferred alternative in the Final PEIS to ensure the protection of areas administered by the NPS in the six-state study area. Given that little on-the-ground data exists as to the full impacts associated with the utility-scale solar facilities, the SEZ-only approach with modifications reflects sound science and sound land use planning principles.</p> <p>The SEZ-only alternative would reduce the number of national parks potentially affected by the proposed program from 52 to 4, which are near 6 SEZs (please see “Comments Common to All SEZs”). While the NPS would still need to carefully evaluate proposed</p>	

		<p>projects to ensure protection of resources and values from solar energy development impacts, the potential risk for park impacts would be lowered. Further, the NPS requests that the area of the proposed Riverside East SEZ located west of the Palen Mountains be excluded from the proposed SEZ, or, that area be reclassified as restricted from solar energy development (see comment at 9.4-1). This is needed to protect sensitive visual, wilderness and wildlife resources within Joshua Tree National Park.</p> <p>As we recommended in our October 1, 2010 comments, the NPS urges BLM to develop a “phased approach” to development. While initial development would be limited to the SEZ’s, the BLM could continue to examine whether additional lands should be established as future SEZs or solar energy development areas. Once the solar energy program is established, careful analysis of the results of monitoring of existing SEZs and the employment of adaptive management strategies and landscape-level eco-regional assessments would inform future SEZ siting decisions. Resource-specific information provided by NPS regarding areas near parks that should be excluded from future development areas would also be included. We understand that the U.S. Fish and Wildlife Service is recommending a similar approach.</p> <p>Unlike the BLM’s preferred alternative of the Draft PEIS, we believe that a SEZ-only approach to development would help ensure adequate protection of national parks and other special areas administered by the NPS. For most of the 22 million acres proposed for solar energy development under the preferred alternative, the program relies on future project-by-project analyses of impacts through subsequent, tiered analyses. Because of the vast acreage involved, the locations of potential development are not certain. We can calculate however that about 27% (5,801,274 acres) of the proposed 22 million acres is located within 25 miles of 52 NPS units and about 14% (2,941,991 acres) is within 15 miles of NPS units.</p> <p>These facts are troubling to the NPS because the Draft PEIS does not evaluate the potential adverse impacts to national parks and other special status areas for the majority of the lands included under the preferred alternative (i.e., lands outside of the SEZs). The NPS believes that this lack of comprehensive analysis and the uncertainty about where development is likely to occur over the six-state area are inconsistent with the call for a</p>	
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ATTACHMENT 1

		<p>“smart from the start” solar energy program on the public lands. A project-by-project analysis of individual utility-scale facilities will be required for 22 million acres under the preferred alternative. We question the capability of the resource management agencies to handle the demands of this approach. We believe that such an application-driven approach should be replaced with sound planning whereby proposed applications are considered only in appropriate specified areas.</p>	
<p>Overall Comment 4</p>		<p><b>Existing, active applications for rights-of-way (ROW) for utility-scale solar energy facilities must fall under the protections set out in the PEIS in the new solar energy development program.</b> In footnote 3 on page 1-9, the bureau alludes to its intention to continue to process 104 active ROW applications outside the solar energy program ultimately selected under the PEIS. We recommend against such an approach. This is a significant number of pending applications, many of which are located in close proximity to national parks and national trails.</p> <p>We strongly suggest that existing ROW applications be required to conform to the policies, design requirements, and exclusion zones to be adopted in the PEIS. While we appreciate that these applications have been submitted before the completion of the PEIS, BLM has the discretion under its 43 CFR Part 2800 regulations to require conformity with the soon to be adopted new solar program that is being analyzed and vetted through this PEIS process – and even to determine that in light of the PEIS, action on some or all of the pending applications is not in the “public interest.”</p> <p>As part of our recommended SEZ-only approach, we believe that all pending solar applications, with the exception of the 2011 and 2012 priority projects, should either be returned to applicants or put in a “no action” category until the bureau has realized the benefit of data from development in the SEZs as the new solar energy program is implemented. This data would help ensure that pending applications are sited in appropriate locations and conform to applicable policies, including design standards and mitigation measures.</p>	
<p>Overall Comment 5</p>		<p><b>Further analysis of lands for exclusion from the proposed solar energy development program should be performed.</b> While most park protection concerns can be addressed through our recommended SEZ-only approach, under the DEIS preferred alternative the bureau will continue to allow solar energy applications on up 22 million acres.</p>	

		<p>If the 22 million-acre option is selected, we strongly recommend that a measure be adopted in the final PEIS and ROD that sets an interim exclusion area of 25 miles around national parks until additional resource-based analysis can be performed to ensure that the parks will not be adversely impacted by solar energy development. This 25-mile distance is based on the maximum distance analyzed in the Draft PEIS of visual resource impacts for the proposed SEZs (i.e., a 25-mile distance from the SEZ; see Sec. 5.12 Visual Resources, page 5-164). Putting such a requirement in place is consistent with the NPS Organic Act of 1916, the enabling statutes of the potentially affected individual parks, the Federal Land Policy and Management Act of 1976, bureau regulations and the “smart from the start” energy strategy.</p> <p>The additional resource-based analyses would examine public lands adjacent to parks and determine areas that would be permanently excluded from solar energy development. One approach that could be used is the visual resource-based evaluation used to establish exclusion areas in Utah – see page, 2-9 Table 2.2-2, footnote c (solar development is precluded in Utah in Visual Resource Management (VRM) Class III viewsheds to protect Capitol Reef NP, Arches NP, Zion NP, and Canyonlands NP, based primarily on natural viewsheds. Although the Utah analysis should also have included Glen Canyon NRA, the NPS fully supports using this approach as one example of defining additional exclusion areas near parks in the six-state study area.). This approach is one tool that could be broadly applied in the six-state study area to evaluate exclusion areas near parks.</p>	
		<b>EXECUTIVE SUMMARY</b>	
ES.2.3.1	ES-6 and Table ES.2-2	Please see our comments for sec. 2.2.2.2 regarding exclusions areas. Also please refer to our Overall Comments 2 through 5.	
ES.2.5	ES-29/14	<p>General comment regarding the Preferred Alternative Section.</p> <p>This section discusses the selection of the Solar Energy Development Program Alternative as the Preferred Alternative. The comparisons provided in Table ES.2-6 identify “increased pace of development” and “reduced costs to the government, developers, and stakeholders” with respect to the objectives for the agency’s action. The bases for these comparisons in the table should be supported in the associated text. Additional explanation and supporting rationale are needed to support the conclusions that the suggested outcomes of the action alternatives are likely to occur. A counter-argument can</p>	

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		<p>be made that the majority of lands considered under the preferred alternative are outside of the proposed SEZs and are not subjected to the same level of environmental analysis in the Draft PEIS as areas within the proposed SEZs. Because in-depth analyses of areas lying outside the proposed SEZs would be deferred to the project level, there is a tremendous uncertainty for where and how much development might occur. The NPS believes that a project-by-project approach to solar energy development under the preferred alternative could result in higher overall cost to government, developers, and stakeholders because of inherent uncertainties regarding project siting, environmental protection concerns, and site-specific mitigation requirements that could lead to delays in right of way approval and increase project costs. Please refer to our Overall Comments 2 and 3.</p>	
ES.2.5	ES-29/14-30	Please see our Overall Comments 2 through 5.	
		<b>CHAPTER 1</b>	
1.3	1-6	<p>General comments regarding BLM Requirements and Objectives for the PEIS Section. In Chapter 1, language needs to be added that makes clear that one of the objectives of the PEIS is to ensure that the deployment of utility-scale solar energy facilities and related infrastructure on the public lands will be done in a strategic way to meet the Secretary’s energy targets for solar energy while avoiding adverse impacts to nearby units of the National Park System and other special status areas administered by the NPS.</p> <p>As discussed in our Overall Comments 1 and 2, the legal authorities, including the NPS Organic Act of 1916, as amended, governing the protection of park units need to be presented in the PEIS. The NPS and the Secretary have an affirmative obligation to protect these resources from the potential adverse affects of energy development. The 1978 amendments to the NPS Organic Act make clear that “the authorization of activities shall be construed and the protection, management and administration of these areas shall be conducted in light of the high public value and integrity of the National Park System and shall not be exercised in derogation of the values and purposes for which these areas have been or shall be directly and specifically provided by Congress.” (16 USC§ 1a-1). In addition, approval of solar energy applications is a discretionary action similar to the subject matter of a Solicitor Memorandum dated April 16, 1998 that examined the legal duties to protect Ozark National Scenic Riverways, a unit of the National Park System, from the issuance of prospecting permits for lead in the Mark Twain National Forest</p>	

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		adjacent to the park.	
		<b>CHAPTER 2</b>	
2.2.2.2	2-6/42	<p>General Comment regarding the Lands Available Section.</p> <p>This section describes the environmental and technical screening process, termed “screening for success” to determine the lands potentially available for solar energy development using “screening out” criteria to determine BLM-administered lands that are potentially available for development. Unfortunately, this screening process did not consider the proximity of sensitive national park resources. We recommend that exclusion areas around parks be added to Table 2.2-2. NPS analysis of lands designated for solar energy development under the preferred alternative reveals that approximately 27 percent of the lands under this alternative are within 25 miles of NPS-administered units. Approximately 52 National Park System units, not including five national trails, are potentially at risk of adverse resource impact within this distance.</p> <p>We strongly recommend that BLM select the SEZ-only alternative, with certain revisions, as its preferred alternative in the Final PEIS to ensure the protection of areas administered by the NPS in the six-state study area. Given that little on-the-ground data exists as to the full impacts associated with the utility-scale solar facilities, the SEZ-only approach with modifications reflects sound science and sound land use planning principles.</p> <p>Please refer to our Overall Comments 2 through 5.</p>	
2.2.2.2	2-7/6-9	All exclusion areas must also apply to transmission corridors, associated roads and supporting infrastructure.	
2.2.2.2	2-8, Table 2.2-2	The NPS requests that this list include the following new exclusion to be added to this table, and that additional analysis of these areas be considered and included in the PEIS. “Areas where development would cause unacceptable impacts, as determined by the Director of the NPS or designee, to the resources and values of units of the National Park System and other special status areas administered by the NPS.” Please refer to our Overall Comment 5.	
2.2.2.2	Table 2.2-2/Item #18	This section and table describe the methods used to determine areas that would be excluded from solar energy development. In Table 2-2, criterion #18 [and Table ES.2.2, #18] describes areas of the National Historic and Scenic Trails to be excluded from solar energy development. Specifically, a ¼ mile corridor from the center line of the Trail is	



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		<p>excluded from proposed development (except where a different corridor width is established). In the West, where views and viewsheds are very important to the enjoyment of national trail corridors, this is an extremely inadequate corridor width and NPS recommends additional analysis for a wider corridor to protect these areas. For national historic trails, NPS recommends a 5-mile corridor from all known and documented high potential sites and segments (as defined in Section 12 of the National Trails System Act and outlined in each trail's planning documents). Many of these high potential sites and segments are equivalent to properties listed on, or eligible, for the National Register of Historic Places. NPS requests that item 18 in Table 2.2-2 and Table ES 2-2 be revised as follows: "18. National Historic and Scenic Trails, including a corridor of 0.5 mi (0.8 km) from the centerline of the trail, except where high-potential or extant trail segments, ruts, swales, or associated sites of a trail with National Historic Trail designation have been identified by the National Park Service and/or Bureau of Land Management for co-administered trails, lands within a corridor of 5 mi (8 km) from the centerline of the trail shall be excluded. If construction involves structures over 25 feet high within 15 miles of a National Historic Trail, a visual resources analysis shall be done to determine whether there are adverse effects to the settings of high potential trail segments and associated resources."</p>	
2.2.2.2	2-8, Table 2.2-2	<p>Please add an additional exclusion to address wind erosion-prone areas. We recommend that BLM use available soil data as an additional criterion for screening-out potentially available lands, i.e., to exclude the most erosion-prone lands from potential development, particularly where such lands are immediately upwind of Class I airsheds such as National Parks. The NPS suggests the following be added to Table 2.2-2: "Areas of moderately to highly erodible land, particularly where such lands are immediately upwind of Class I airsheds, such as national parks." See comment at 4.7.3.4, pag3 4-35 and Table 4.7-5.</p>	
2.2.2.2	2-9 Table 2.2-2, footnote c	<p>NPS requests that the approach undertaken in this footnote be broadly applied in the six-state study area to further inform exclusion areas near parks. This footnote states that the PEIS precludes solar development in Visual Resource Management (VRM) Class III viewsheds to protect Capitol Reef NP, Arches NP, Zion NP, and Canyonlands NP in Utah, based primarily on natural views and viewsheds. (The Utah analysis should have included Glen Canyon NRA, as there are many potential development areas adjacent to that park's boundaries). The NPS urges a similar type of analysis be applied to all parks in the six-state study area for the PEIS. We would like to work with BLM on identifying this</p>	

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		process.	
2.5.1	2-24/12	<p>General comment regarding Distributed Generation Section.</p> <p>Although addressed in the PEIS (Section 2.5.1) as out of the scope of this analysis, distributed generation of solar energy resources in addition to large-scale development projects should remain a viable approach to addressing future energy needs in the six-state study area. As defined under the mission of the DOE, the evaluation of distributed generation systems should progress through the Solar Energy Grid Integration Systems (SEGIS) program. Development of subsidy programs for private landowners to utilize existing or upgraded infrastructure may be possible through the combined effort of the DOE, other federal agencies, private companies and non-profit organizations. Large-scale operations should not hamper or replace the development of distributed generation. The PEIS should address nor analyze the potential benefits of implementation of solar energy generation from individual homes and businesses through incentive based programs. These could offset a portion of the potential solar power production, and resultant potential environmental impacts, from generation on sensitive public lands resources, including national parks.</p>	
2.5.5	2-26/39	<p>This section states that “there are no clear and well established definitions of what constitutes previously disturbed public lands.” Previously disturbed lands, or “brownfields” are well defined by EPA and delineated. The PEIS should consider this definition in determining previously disturbed lands available for solar siting and analysis.</p>	
3.2.2	3-16/29	<p>This section discusses site preparation activities that may occur with development of solar energy facilities under this proposal. One such activity includes site biomass removal. Page 3-18 states: “The biomass removed during site and road clearing would require disposal; it could be burned on-site if applicable permits could be obtained.” (lines 31-33). However, the air quality analyses in the Environmental Effects sections for the general analysis, and the SEZ-specific air quality impact analyses provided in Chapters 8 through 13 do not include an analysis of potential biomass burning. This analysis should be included in the final PEIS.</p>	
3.3	3-27/43	<p>EPA guidelines for outdoor noise levels are not appropriate for the protection of natural soundscapes. This bullet should be revised as follows: “Noise produced during construction, operation, and decommissioning of the solar energy facility should be assessed to assure compliance with all applicable regulations, statutory requirements, and the federally mandated policies of surrounding land management agencies.”</p>	

		<b>CHAPTER 4</b>	
4.3	4-4/1-6	<p>General comment regarding the Specially Designated Areas and Lands with Wilderness Characteristics Section.</p> <p>Review of Figures 4.3-1 through 4.3-7, as referenced on page 4-4, shows that it is apparent that there are a large number of units administered by the NPS in the six-state study area. However, the text is not clear about specifically where in the PEIS are included analyses on potentially affected areas administered by the NPS. For purposes of analyses in Chapters 4 and 5, the PEIS should include information regarding the location of sensitive resources on non-BLM administered lands, including units of the national park system and other special status areas (e.g., national trails, national historic sites, national natural and cultural landmarks). Specially designated areas administered by NPS, including wilderness areas and wilderness study areas, are not analyzed in the Draft PEIS. As noted above, NPS has determined that there are 52 NPS units, not including five national trails, in the six-state area that are within 25 miles of lands designated under the preferred alternative as potentially open for solar energy development. For purposes of determining the proximity of lands potentially available for solar energy development under the preferred alternative, NPS generated a map using the GIS datasets available from the Solar PEIS website, to depict areas administered by the NPS that may be susceptible to impacts of solar energy development. See Attachments 2 and 3. Because there is significant potential for both direct and indirect and cumulative effects of utility-scale solar energy development that may be sited in proximity to these non-BLM administered areas, NPS believes additional analysis is needed of the affected environments of specially designated areas located in the six-state study area.</p> <p>This may be accomplished through the inclusion of a separate section of the PEIS that considers impacts to the NPS-administered areas located within the six-state study area, and through establishing additional exclusions of BLM lands that are in proximity to areas administered by NPS. Please provide the full information on non-BLM administered specially designated areas, including wilderness areas and wilderness study areas administered by NPS.</p>	
4.7.3.4	4-35 and Table 4.7-5	<p>General comment regarding the Wind Erosion of Soils Section.</p> <p>Wind erosion is widely acknowledged throughout the PEIS as a likely impact of development-related activities, with further potential impacts on downwind air quality and</p>	

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		<p>related values. In this section, soil texture is identified as a key factor that determines soil susceptibility to wind erosion, and Table 4.7-5 refers to wind erodibility indices (WEI) and wind erodibility groups (WEG) that are used by the USDA Natural Resources Conservation Service (NRCS) to characterize the relative vulnerability of different soil types to wind erosion. WEI and WEG data are readily available for areas with published NRCS soil surveys, yet there is no evidence that these data were used in identifying lands that would be open to ROW applications under the preferred alternative. We recommend that BLM use available soil data as an additional criterion for screening-out potentially available lands, i.e., to exclude the most erosion-prone lands from potential development, <i>particularly where such lands are immediately upwind of Class I airsheds such as National Parks</i>. For example, an examination of soil data indicates that over 55,599 acres of moderately to highly erodible lands in WEGs 1 and 2 are open to development directly upwind of Canyonlands and Arches National Parks located just east of Hanksville, UT. Solar energy development-related disturbance of these highly erodible lands would potentially degrade air quality conditions far downwind. Measures may be required to mitigate project-specific and cumulative dust emissions, but NPS questions whether such measures would result in adequate abatement of dust emissions. We recommend that these lands be excluded from potential development to minimize risks to air-quality related values associated with downwind NPS units and associated Class I airsheds. Even in areas without highly erodible soils, fugitive dust emissions attributable to elevated traffic levels on unpaved roads and utility corridors have the potential to pose persistent risks to air quality far downwind throughout the operational life of the project.</p>	
4.11	4-115/14	<p>General comment regarding the Air Quality and Climate Section in Chapter 4 and all corresponding affected environment sections of SEZ reviews.</p> <p>This section and all corresponding analyses of the Affected Environment for Air Quality in the Draft PEIS reviews air quality data from the region and the applicable regulatory requirements. While these sections discuss visibility protection provisions under the CAA, visibility monitoring data are not discussed for the region and in the SEZ analyses. Windblown dust, both local and regional, has been found to be a significant contributor to visibility impairment on the 20% worst visibility days in the six state study areas. An attribution study found that on the majority of these “worst dust days,” the dust event</p>	

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		<p>mostly could be attributed to both local and regionally transported dust sources with some level of confidence (dust from Asian dust events made up a much smaller contribution)<sup>1</sup>. As fugitive/windblown dust emissions are the greatest air quality concern associated with solar energy development projects, visibility impairment from dust emissions should have been addressed in more detail in the Draft PEIS. The Affected Environment sections for Air Quality should be updated to include monitoring data from IMPROVE monitoring sites within the six state study area. The Draft PEIS should also include monitoring data from EPA’s Chemical Speciation Network of PM2.5 monitors, located in urban and rural areas within the 6 state study area. In particular, this should include information on the fine soil and coarse mass fractions that contribute to visibility impairment at these monitoring sites.</p> <p><sup>1</sup> Kavouras, I.G., Etyemezian, V., DuBois, D. W., Xu, J., Pitchford, M. 2009. Source reconciliation of atmospheric dust causing visibility impairment in Class I areas of the western United States, Journal of Geophysical Research, VOL. 114, DO2308, doi:10.1029/2008JD009923.</p>	
4.11.2.3	4-128/35-36	<p>This states “Even if PSD increments are met, if the Federal Land Manager determines that there is an impact on an AQRV, the permit may not be issued”. This statement is not technically correct in terms of the FLM role for PSD permitting under the Clean Air Act. We offer the following technical corrections: “In cases where the PSD increments are met, if the Federal Land Manager determines that there is an <i>adverse</i> impact on an AQRV, <i>and the permitting authority agrees</i>, the permit may not be issued” [emphasis added]. The CAA gives the permitting authority the latitude to issue a permit despite an adverse impact made by an FLM if they disagree with the FLMs conclusion. The “increment test” simply shifts the burden of proof for the AQRV determination. Please review and correct as recommended all related discussion throughout the Draft PEIS.</p>	
4.12	4-132/32	<p>General comment regarding the Visual Resources Section.</p> <p>The NPS believes the approach used for consideration of scenic resources falls short when assessing scope and significance of impacts to scenic quality of national parks and other special areas administered by NPS. As discussed in the inset box on page 4-134, the Distance Zone Delineation does not take into account the scale of solar generating facilities. Thus, large-scale facilities are treated no differently as a visual impact than other, smaller-scale facilities. This may incorporate an unintended bias in the VRI for</p>	

		<p>measuring the scale of visual impact. From high elevation viewpoints, which exist in many of the 52 national parks located within 25 miles of lands potentially available under the preferred alternative for solar development, solar generating facilities that would be considered to occupy the background zone would have extensive perceptible contrast against the landscape, and their visual intrusion is even further accentuated because of potential for reflected glare.</p> <p>The Sensitivity Level Analysis, as defined on page 4-134, does not define lands such as national parks and wilderness areas, or whether observation points within sensitive, non-BLM administered scenic areas are taken into account to determine impacts of development. In some cases, potentially available lands abut or lie immediately adjacent to the boundaries of national parks and wilderness areas. The NPS is concerned that visitors to national parks have an expectation of seeing sweeping uncluttered landscapes, of photographing unblemished landscapes beyond park boundaries, and of enjoying the absence of the hand of man on these viewsheds.</p> <p>To illustrate, we use Great Basin National Park as an example of the importance of viewsheds beyond park boundaries. This park was designated primarily to preserve a selected example of distinctively unique Great Basin physiography, which consists of numerous linear mountain ranges separated by elongate dividing valleys. While the park does not encompass the flanking valleys, their importance is clearly recognized within the park’s General Managements Plan as integral elements of this classic example of the Basin and Range geographic province. Thus, the scenic qualities of the valleys to the east and west of the park are of prime importance to NPS management and their importance to the scenic experiences from within Great Basin NP cannot be overemphasized. The NPS believes that additional analysis of VRM Class III lands near certain parks, as was applied to determine exclusions near several parks in Utah, would further inform the BLM about the level of exclusions needed near parks throughout the six-state study area (see comment at 2-6/42.</p> <p>The use of ecoregion descriptions relying upon EPA Ecoregions, as discussed on page 4-135, for the general classification of visual resources in the six-state study area is not sufficiently justified as a proxy method for characterizing the quality of scenic resources</p>	
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		in the study area. Maps are needed of VRI area classifications, especially in the vicinity of areas that may have important scenic qualities or sensitivities such as national parks and other special status areas administered by the NPS. Without this information, it is not possible to determine where additional exclusions of lands should be made to protect sensitive visual resources.	
4.12.1	4-134	The last two sentences of the inset describing the Visual Resource Inventory Classification on page 4-134 are a concern. These state, “Inventory classes are informational in nature and provide the basis for considering visual values in the RMP process. They do not establish management direction and are not intended to be used as a basis for constraining or limiting surface-disturbing activities.” The last sentence appears to be contradictory with determinations identified in Table 2.2.-2, Item #16, where proposed exclusions under the solar energy development program were determined on the basis of VRM Classes I and II (and, in some areas of Utah, Class III). The NPS agrees that sensitive viewsheds should be removed from the program to avoid compromising scenic values in the vicinity of national parks and other special places administered by NPS. If it is the intent of the proposed program to use visual resource inventory and management classifications to identify where lands should excluded for solar energy development, these contradictory statements need to be resolved.	
		<b>CHAPTER 5</b>	
5.3	5-8/13-18	Drawing on the Great Basin NP example cited at comment 4-132/32, a significant amount of adjacent BLM-administered lands in Snake and Spring valleys are indicated as being available for solar development (see Attachment 2). At the project level, mitigation through appropriate facility siting may be possible, however, it is less likely that sensitive vistas for which the park is known would be protected from cumulative development impacts in Spring and Snake valleys. Park visitors, particularly those using hiking trails and using observation points could not avoid viewing solar development in the valleys below. In this example, the only way to protect the high quality visual resources is to exclude lands within the vicinity of the park from development. One approach for parks in six-state study area is to exclude lands from solar energy development that are situated in the foreground-middleground and background distance zones, confining development to the areas classified in the VRM system as the “seldom-seen zone” relative to all vistas within any national park, national historic site, national trail, Tribal cultural resource, or other especially sensitive scenic area. Avoidance of classic scenic areas should be the	

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		<p>norm for the solar energy development program.</p> <p>As noted above, the PEIS states (2-9 Table 2.2-2, footnote c) that solar development is precluded in Visual Resource Management (VRM) Class III viewsheds to protect National Parks in Utah, based primarily on natural viewscales. The NPS recommends that a similar type of analysis be applied to all parks in the six-state study area for the PEIS. We would like to work with BLM on identifying this process to achieve this analysis.</p>	
5.3	5-8/13-18	<p>Due to the wide scope of the Draft PEIS and the lack of detailed analysis, it is not possible for the NPS to fully evaluate the potential impacts to the NPS administered units that could be impacted under the preferred alternative. Given the significant number of national parks, wilderness areas and other special status areas administered by NPS that have the potential to be impacted under the preferred alternative, a more in depth analysis is required to determine areas that are best-suited for solar energy development.</p> <p>Line 16 states these special areas “could be indirectly affected by development of utility-scale solar energy development on public lands adjacent to or near these areas”. NPS believes there is great potential for both <i>direct</i> and indirect impacts to the quality of natural, historical and cultural resources under NPS protection.</p>	
5.3.2	5-9/21-36	<p>See our Overall Comment #5.</p> <p>The NPS believes additional resource-based analyses to be performed that would examine public lands adjacent to parks that should be permanently excluded from solar energy development.</p> <p>The NPS agrees with the statement in line 29, that visual resource impact is a primary impact that may occur on other specially designated areas and that additional exclusions of lands are warranted to fully protect park resources. For example, national trails under NPS administration should have a greater minimum separation from lands proposed for solar energy development.</p> <p>A separation of ¼ mile is inadequate minimum separation to protect sensitive trail resources from the indirect effects of solar energy development. NPS believes a separation of 1 mile is appropriate, in some cases this distance should be greater. See</p>	

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		comment at ES-6 and Table ES.2-2.	
5.3.3	5-10/3-4	This states: “Solar facilities should be located and designed to minimize impacts on specially designated areas and lands with wilderness characteristics.” The NPS recommends this statement be modified as follows: “Solar facilities should be located and designed to avoid impacts on specially designated areas and lands with wilderness characteristics including specially designated areas not administered by BLM that would subject to direct and indirect impacts from development of solar energy facilities, including units of the National Park System and other special status areas administered by the NPS. ”	
5.4.3	5-13	Any discussion of fire, even increased incidence due to proposed activities, should be grounded in the natural role of fire in these ecosystems. The PEIS should discuss the role of alien invasive grasses as an additional hazard to energy facilities and adjacent natural areas in the event of anthropogenic or natural ignitions.	
5.5	5-16	<p>General comment regarding the Recreation Section.</p> <p>The PEIS needs to include an analysis of recreation experiences that are near lands under the preferred alternatives, including national parks and other special areas administered by NPS is important. Visitor experience has the potential to be affected in many ways by utility-scale solar energy development, such as increased vehicular traffic during construction and operations phases of projects, changes to the visual landscape viewed from within the parks, and diminished recreational experiences in wilderness areas.</p> <p>The recreation resource of areas administered by NPS is a significant resource in the six-state study area and impacts from utility-scale solar energy development should be addressed in light of the significant contributions of parks and other special status areas. Please refer to our comment at Section 5.17, page 5-227.</p> <p>In addition, this section should evaluate the impacts to visitor experience for national parks that are in isolated areas with limited roadways leading to and from the area. These impacts are not addressed in this section, and the potentially applicable mitigation at lines 24 and 25 on page 17 gives no indication of the severity of this potential impact.</p>	
5.5.3	5-17/27	The NPS agrees with this statement however, it should be revised as follows: “Solar facilities should not be placed in or near areas of unique or important recreation resources.” Please refer to our comments on Section 2.2.2.2 .	

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<p>5.7</p>	<p>5-19</p>	<p>General comment regarding the Geologic Setting and Soil Resources section.</p> <p>The NPS is concerned that large expanses designated as potentially available for solar energy development occur where soils are highly vulnerable to erosion by wind. For example, an extensive block of land potentially available for development immediately west of Canyonlands NP (within 7 miles of the Horseshoe Canyon unit). Approximately 55,559 acres of this block is characterized by soils that are moderately to highly vulnerable to erosion by wind. Because of the presence of these soils, development of solar facilities, access roadways, supporting and delivery utility lines, and ongoing facility maintenance in this area would have high potential for long-term generation of fugitive dust emissions. The direct and cumulative effects of these emissions could impact downwind Class I airsheds in both Canyonlands and Arches National Parks.</p> <p>As discussed in our previous comments on Chapter 4, the NPS believes that lands where soils that are highly susceptible to wind erosion are present should be excluded from solar energy development and asks BLM to reevaluate these areas to determine the appropriateness of additional exclusions under the new solar energy program.</p>	
<p>5.7.4.1.1 , A.2.2.8.1. and A.2.2.12</p>	<p>5-31 and A-73</p>	<p>General comment regarding Siting and Design Section.</p> <p>In addition to soil texture, vegetation structure, and degree of crusting, major factors affecting risks of wind erosion are the shape and orientation of disturbed areas in relation to the prevailing wind direction (“field length” in soil conservation terminology). We recommend (where possible) that, disturbances should be aligned perpendicular to prevailing winds as an additional mitigation measure – particularly in landscapes composed of soils that are highly sensitive to wind erosion. (Please see Blanco, H. and R. Lal. 2008. Principles of soil conservation and management. Springer, The Netherlands.)</p> <p>As discussed in our comment at 4.7.3.4, page 4-35 and Table 4.7-5, an additional mitigation measure would be to use NRCS soil data to identify soils that are most vulnerable to wind erosion and to exclude them from development, especially where they occur upwind of Class I airsheds.</p>	
<p>5.7.4.1.3</p>	<p>5-34/33-35</p>	<p>The use of water to mitigate for construction-related soil disturbance may be a limiting factor in large scale development in dry, wind-prone climates, and where highly erosive soils are present. To conserve water and to protect air quality, areas of highly erosive soils should be excluded from solar energy development. Performance and use of other</p>	

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		stabilizing agents should be demonstrated as being adequate and suitable for stabilizing soils and roads.	
5.9	5-37/22-37	<p>General comment regarding Water Management Section.</p> <p>Water resources are a limiting factor for development of large-scale solar facilities in arid environments. The NPS agrees that water resource availability is a significant challenge for all forms of energy development in the West, and sound water management practices are required for sustainable energy development. Section 5.9.3.1 outlines numerous effective requirements as potentially applicable mitigation measures to achieve sustainable water use practices for solar energy development. However, these measures are to be applied on a project-by-project basis and the cumulative impacts of water use on surface or groundwater resources are not addressed. For this reason, an overall water use policy for solar energy development is needed. The NPS recommends adoption of stringent water use policies for the proposed solar energy development program. This policy should direct that solar development technologies that use the least amount of water necessary for construction and operation, such as dish engine and photovoltaic systems, should be prioritized as the preferred method in the desert southwest. And as discussed below, comprehensive water management plans should be developed as part of the solar energy program.</p>	
5.9.3.1	5-50/1-5	<p>The NPS supports the concept of managing water use within the sustainable yield of hydrologic systems (surface and groundwater) for all lands included under the preferred alternative. However, this design feature requirement places the responsibility of determining sustainable water yield, e.g. aquifer safe yield, on the individual project proponent, and such analysis is to be performed on a project-by-project. This approach likely will lead to biased and/or conflicting technical interpretations of hydrologic information and will promote multiple safe- or sustained-yield projections. NPS urges that water management plans be adopted for all areas potentially available for solar development under either of the action alternatives of this PEIS. Such a plan may be completed for individual SEZs and/or at the land-use plan scale. The plan should adopt water availability targets for solar energy development, including any safe yield targets established in over-allocated basins by the appropriate regulatory agency. Areas where sensitive, groundwater-dependent resources occur would also be identified in the plan. The plan may adopt existing estimates based on peer-reviewed science or require the completion of a water availability study to be completed as independent, peer-reviewed</p>	

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		science. The safe yield and other SEZ-specific or land use plan-specific water management measures would then be followed as a guide for reviewing project-specific water use requirements and the developer’s description of water availability. NPS suggests that this planning requirement be incorporated as a separate solar energy policy statement in Appendix A and discussed in other chapters of the Draft PEIS.	
5.9.3.1	5-50/24-27	Please revise the PEIS as follows: “Project developers shall choose available water sources and water rights, and implement water management practices that protects aquatic, riparian, and other water-dependent natural resources.”	
5.9.3.1	5-50/29-35	NPS recommends that groundwater monitoring be performed on lands identified as available for solar energy development under a single comprehensive program within a water management plan. Such a plan could be scaled at the SEZ- or land-use plan levels. Project-specific monitoring and mitigation, as described in this section, would support the objectives of the plan, including the location of project-specific monitoring wells, monitoring frequency, data analysis and coordination with federal, state and local agencies that manage or have groundwater resource protection interests in the region. This would avoid potential duplicative monitoring and data analyses and improve capability to assess cumulative impacts of water resource development due to solar energy projects. The above-described monitoring plan should establish data-sharing protocols, and all project developers should be required to share all groundwater monitoring data with the interested federal, state, and local agencies and stakeholders.	
5.9.3.1	5-51/10-16	See comment at 5-51/29-35.	
5.10	5-55	The analyses in this section do not recognize that ecological resources occur and function at different spatial scales, levels of organization, and time periods. Given that this is a programmatic six-state analysis, the PEIS must include metrics and measures for ecosystems and landscapes, including fragmentation, connectivity, and food web and nutrient dynamics.	
5.10	5-55	General comment regarding Adaptive Management in the Ecological Resources Section. The term “adaptive management” is used sparingly in this section. We believe the principles of adaptive management as outlined by DOI Policy (522 DM 1) should be applied to the new solar energy program. An Adaptive Management Plan, including applied research and monitoring, would be an important element for phasing in development to areas other than those inside the SEZs.	
5.10.1	5-55	General comment regarding Vegetation (Plant Communities and Habitats) Section.	



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		Invasive/noxious species management is a continual concern for national parks in the six-state study area. Disturbing large landscapes for solar energy development can accelerate the spread of non-native species and have negative impacts on plant communities surrounding the developed areas. The PEIS should address the potential for solar energy development to accelerate the occurrence of invasive species, particularly in national parks and other special status areas,	
5.10.1	5-56 / Table 5.10-1	This table is misleading. By not applying some structure to plant communities by using the National Vegetation Classification System, “plant communities” as listed are inappropriately scaled. Categories of terrestrial and wetland are too generic to make the analyses presented meaningful. Along with the inclusion of G1-G2 species (see page 5-113) this analysis would benefit from inclusion of similarly ranked communities. These are easily obtained from state natural heritage programs or NatureServe. With this, it is clear that any G1 or G2 community could suffer a “large” impact from most activities. BLM’s Rapid Ecoregional Assessments can provide information for BLM to avoid these types of impacts. This seems to be what the PEIS says in section 5.10.4.1 (5-114 / 7-16).	
5.10.1.1.2	5-65/19-25	The PEIS implies that most rare plants and communities are “water-dependent” rather than upland dependent. Please correct the text to reflect that rare upland plants and communities occur throughout the region.	
5.10.1.1.2	5-67 / 7	Authorities and permits required to address the use of biological control of invasive species should be cited. Also, the following text is recommended for inclusion: “Species identified as invasive and designated for control should be coordinated with regional BLM officials to determine if some species shifts are climate-related impacts to native species elsewhere. Also, some species that are extremely damaging to native plant communities may not be on state noxious species lists.”	
5.10.1.1.2	5-65/20	Impacts to rare communities are mentioned in the PEIS, but no listing is cited for rare communities. This can be obtained from state natural heritage programs or NatureServe.	
5.10.2	5-73	General comments regarding the Wildlife (Amphibians, and Reptiles, Birds, and Mammals) Section. The disruption of wildlife migration corridors and habitat fragmentation/loss are issues of concern for the NPS because disturbance of wildlife habitats surrounding parks may have a profound effect on species found in parks. NPS agrees with the statement on page 5-81, line 7, that areas of high use will become areas of low use. The potential for solar energy facilities to occupy formerly large expanses of undeveloped land would promote impacts	

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		<p>to ecosystem functioning and health on a large-scale. The PEIS should fully analyze the potential effects of large-scale solar energy development on wildlife migration corridors and special status species habitats that are linked to national parks and other special areas administered by NPS.</p> <p>The new solar energy program should take a holistic ecological approach in defining solar energy development areas and policies. Core habitat, wildlife travel corridors, and gene flow between populations should be fully considered. Key species in the desert southwest, such as the endangered desert tortoise, flat-tailed horned lizard, Mohave ground squirrel and bighorn desert sheep reside in and around National Parks. Crucial linkages for these species to habitat outside parks should be considered in the solar energy development program.</p>	
5.10.2.1.2	5-76 / 43	<p>General comment regarding the Wildlife Disturbance Section.</p> <p>This section is missing key information on bighorn sheep, including: Bighorn sheep naturally recolonize empty habitats in the southwestern U.S. and this may offset extirpation if connectivity is maintained; lower elevation herds have reduced genetic diversity and connectivity is important to maintain these herds and mitigate effects of climate change (Epps. et al. 2006); and, developed areas (even those that are 'linear' - e.g., highways, canals, etc.) eliminate gene flow (Epps. et al. 2005, 2007). Epps et al. (2007) provides connectivity maps for Southern California. The NPS is currently working on bighorn sheep connectivity maps for approximately 10 NPS units from Lake Mead NRA to Arches NP.</p>	
5.10.2.1.2	5-79/1-12	<p>The paragraph on chronic noise exposure is better suited for section 5.10.2.1 common impacts than for 5.10.2.1.2, which addresses temporary construction noise impacts. We recommend moving the paragraph on chronic noise exposure to section 5.10.2.1 and another other similar paragraphs which may be better suited there.</p>	
5.10.2.1.2	5-80 / 12	<p>General comment on Habitat Disturbance Section.</p> <p>Any discussion of fire, even increased incidence due to proposed activities, should be grounded in the natural role of fire in these ecosystems.</p>	
5.10.4.1	5-113 / 25-28	<p>The NPS supports inclusion of G1-G2 species as a positive step towards recognizing landscape cumulative impacts in this analysis.</p>	
5.10.5.2	5-132/35	<p>Authorities and permits required to address the use of biological control of invasive species should be cited. Also, the following text is recommended for inclusion: “Species</p>	

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		identified as invasive and designated for control should be coordinated with regional BLM officials to determine if some species shifts are climate-related impacts to native species elsewhere. Also, some species that are extremely damaging to native plant communities may not be on state noxious species lists.”	
5.10.5.2	5-133/23	The suggestion to contribute \$100.00 USD per acre to the BLM Native Plan Materials Program should not be confused with Bond requirements for site reclamation / restoration (section 5.10.5.6) unless this is agreed to in a legally binding document with BLM/DOI.	
5.10.5.6	5-141/1	General comment regarding Decommissioning/Reclamation Section. The PEIS should adopt Ecological Restoration as its goal for decommissioning, instead of traditional reclamation concepts taken from the oil and gas industry. Ecological restoration standards, including specific metrics and measures for ecological integrity, will ensure compatibility with BLM’s other land management goals and will likely reduce the cost for future restoration work.	
5.11	5-145/1 (#1)	General comment regarding Air Quality and Climate Section and all corresponding affected environment sections of SEZ reviews. Because some of the technologies under consideration require limited use of fossil-fuel-fired boilers and varying degrees of land disturbance, the PEIS environmental analyses should provide an air quality comparison between all technologies under consideration. This type of information would be useful to land managers when considering a solar energy proposal. For instance, technologies that require greater land disturbance in a PM <sub>10</sub> or PM <sub>2.5</sub> nonattainment area may be less preferential to technologies that minimize land disturbance. Alternatively, facilities that require use of auxiliary boilers may not be desirable in an ozone nonattainment area. A technology comparison for the purposes of air quality should be included in the PEIS.	
5.11	5-145/1 (#2)	General comment regarding Air Quality and Climate Sections and all corresponding affected environment sections of SEZ reviews. Several of the SEZs are located in a county that is either currently fully or partially designated as nonattainment for PM <sub>10</sub> or PM <sub>2.5</sub> , or that may become a nonattainment area once areas are re-designated under a recently revised standard (e.g., Imperial SEZ, Iron Mountain SEZ, Gillespie SEZ). While the general air quality analysis in section 5.11 mentions General Conformity sections of the CAA, the specific analyses for each of these SEZs never addresses General Conformity requirements that may apply, despite air quality modeling results that suggest NAAQS violations. In these instances, General	

		<p>Conformity, as it may apply to a particular SEZ, should be addressed in the PEIS.</p>	
<p>5.11</p>	<p>5-145/1 (#3)</p>	<p>General comment regarding the Air Quality and Climate Section and all corresponding affected environment sections of SEZ reviews.</p> <p>The Environmental Effects section for each SEZ reported modeled PM<sub>10</sub> and PM<sub>2.5</sub> air quality impacts from construction activities associated with development of the SEZ. Downwind PM concentrations were calculated using AERMOD, the EPA-approved air quality model for evaluating near-field impacts (i.e., less than 50 km). While we support the use of air quality modeling to evaluate impacts from a proposed project, we have several concerns associated with analyses completed in support of the PEIS:</p> <p>The AERMOD modeling should include both wet and dry particle deposition.</p> <p>The analysis did not estimate or model emissions associated with construction equipment. These emissions should have been included. This would include emissions from mobile sources such as bulldozers, graders, and haul trucks. The emissions from the mobile sources include nitrogen oxide (NO<sub>x</sub>), sulfur dioxide (SO<sub>2</sub>), and primary sulfates (SO<sub>4</sub>). The PM emissions from the mobile sources should be speciated into elemental carbon, organic carbon and primary PM<sub>2.5</sub>.</p> <p>Along with other references in the Draft PEIS, page 5-147 states that “Parabolic trough and power tower technologies may combust some fossil fuels during start-up to prevent freezing the HTF”. However, we did not find an analysis of potential emissions associated with auxiliary boilers at these types of facilities. A “typical” estimate of these emissions should have been provided in the effects sections. These potential emissions should be included in all air quality modeling analyses and disclosed in the Draft PEIS. The emissions to model from the auxiliary boilers should include NO<sub>x</sub>, SO<sub>2</sub>, and SO<sub>4</sub>. The PM emissions from the auxiliary boilers should be speciated elemental carbon, organic carbon and primary PM<sub>2.5</sub>.</p> <p>The analysis only modeled impacts associated with each SEZ. The preferred alternative opens a vast acreage to solar energy development in addition to the specific SEZs. The general air quality analysis in section 5.11 should have included a range of modeled impacts associated with development of a “typical” solar energy project.</p>	

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		<p>Although the various analyses recognize that there are Class I areas within the vicinity of many of the SEZs, if they were located greater than 50 km from the particular SEZ, direct impacts in the Class I area were not modeled due to the distance limitations in the AERMOD model. As the comments on visibility at page 4-115 indicate, dust, including regional transport, is a significant concern for visibility impairment in this region. The EPA-approved long-range transport model, CALPUFF should have been used to evaluate impacts in these Class I areas. This includes modeling pollutant concentrations, as well as an AQRV analysis. Contributions to visibility impairment and total deposition of sulfur and nitrogen deposition, as well as PSD increments from emissions of all fossil-fuel combustion at the site (i.e., construction equipment, auxiliary boilers, pumps etc.) should be modeled using CALPUFF. Additionally, CALPUFF should be used to evaluate the impacts of regionally transported emissions from each SEZ on visibility in these Class I areas. The emissions from these sources should include PM, NO<sub>x</sub>, SO<sub>2</sub>, and SO<sub>4</sub>. The PM emissions from the above sources should be speciated into elemental carbon, organic carbon and primary PM<sub>2.5</sub>.</p> <p>When a Class I area is located less than 31 miles from a particular SEZ, the analysis should include a near-field AQRV impact analysis in addition to the AERMOD analysis. This includes using VISCREEN and/or PLUVUE to assess near-field impacts to visibility from combustion of fossil fuels (i.e., construction equipment, pumps, auxiliary boilers, etc.) and windblown dust. The VISCREEN visibility analysis should model NO<sub>x</sub>, primary SO<sub>4</sub>, and the PM emissions should be speciated into elemental carbon and primary PM<sub>2.5</sub>. The PLUVUE visibility analysis if warranted should include the NO<sub>x</sub>, SO<sub>2</sub>, and the PM emissions. Near-field acid deposition modeling should be performed with the CALPUFF model. The use of AERMOD for near field acid deposition is discouraged as the model vastly overestimates the total deposition of sulfur and nitrogen.</p>	
5.11	5-145/1 (#4)	<p>General comment regarding the Air Quality and Climate Section and all corresponding affected environment sections of SEZ reviews.</p> <p>Section 118 of the Clean Air Act requires NPS units to meet all federal, state, and local air pollution standards. National parks in the six-state area are designated as Class 1 areas under the Clean Air Act. This means the parks' air quality is among the best in the nation with occasional periods of regional haze, forest fire smoke or widely dispersed industrial</p>	

		<p>pollution. The ability to have a clear view of the night sky in the absence of artificial lighting is a valuable resource for the parks. These areas are also some of the best areas in North America for night sky viewing.</p> <p>Fugitive dust and vehicle emissions from solar development projects in the vicinity of parks could impact air quality and night sky viewing during construction operations as well as post construction from soil disturbance as a result of vegetation removal at the site. Studies have shown that fugitive dust emissions from industrial activities and development have a significant effect on visual acuity within short and long-range vistas. Air quality impacts attributable to fugitive dust emissions are described as unavoidable but localized (page 5-146/30-46). Yet such emissions have the potential to be significant contributors to regional-scale air quality issues – as acknowledged in the cumulative impacts section (6.5.2.6, page 6-96). The NPS is concerned that the cumulative effects of fugitive dust generated in the construction and operation phases could impact national park vistas. We agree with the statement on page 5-147, lines 31-34 that stabilization is never fully effective. However, this is a regional-scale airshed management issue and the NPS is concerned that the Draft PEIS over-emphasizes the management of fugitive dust at the project level, while neglecting to provide information on how this impact would be managed at the regional level.</p> <p>We recommend that the wording in Section 5.11 and other relevant sections be revised to ensure the regional consideration of downwind impacts of dust emissions on sensitive vistas. The NPS needs assurance that sensitive vistas will be fully protected under the solar energy development program from the cumulative effects of numerous projects that could be located upwind from parks.</p>	
5.11	5-145/1 (#5)	<p>General comment regarding the Air Quality and Climate Section and all corresponding affected environment sections of SEZ reviews.</p> <p>Throughout the Draft PEIS, there is discussion of the displacement of electricity generated by fossil-fuel-fired power plants with that generated by solar energy facilities. A relatively simple comparison of air pollution generated on a per MW-hr basis for the six state study area was conducted; emissions for solar facilities were considered to be negligible as compared to composite emissions for all types of fossil-fuel-fired facilities in each state. Although this information is useful in demonstrating the distinct air quality</p>	



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		<p>advantages of producing power through solar energy, we find it is somewhat misleading to use the term “displace”. The Draft PEIS leads the reader to believe that an actual replacement of existing emissions will occur, however, there is no clear indication that a solar facility constructed in accordance with the solar energy development program will replace existing fossil-fuel fired energy infrastructure. While we agree that it is likely new solar energy facilities will help meet increasing future electricity demands, based on current information, it does not appear that a one-for-one MW-hr replacement of fossil-fuel-fired electricity generation can be assumed. In fact, in the most recent <i>Energy Perspectives 1949 -2009 Overview</i>, the Department of Energy states: "The reference case from the U.S. Energy Information Administration’s <i>Annual Energy Outlook 2010</i>, which assumes current laws and regulations remain unchanged, projects that fossil fuels continue to provide most of the energy consumed in the United States over the next 25 years. The fossil-fuel share of overall energy use declines, however, as the role of renewable forms of energy grows.” Associated growth charts do not show a significant decline in fossil-fuel-fired power generation. While this information recognizes that the renewable energy sector will continue to grow at a faster rate, it does not support the assumption that fossil-fuels will be phased out and replaced by renewable energy sources <i>on a one-for-one basis</i>. Unless specific commitments from utility operators to replace their fossil-fuel infrastructure with solar powered facilities can be provided in the analysis, this type of language should be corrected in the Draft PEIS. As an example, with the exception of the use of the term “displace,” we believe the text on page 5-157, lines 22 through 27 adequately captures the role of solar energy within the regions current energy portfolio given the complexity of factors influencing electricity generation and distribution.</p>	
5.12	5-158/33	<p>General comment regarding Visual Resources Section and all corresponding visual resources sections in SEZ reviews.</p> <p>The Draft PEIS indicates that “potentially sensitive visual resource areas” lying within 25 miles of a project area may be impacted and that “viewers in these areas would be likely to perceive some level of visual impact from the project.” The Draft PEIS also states “Site-specific impact assessment is needed to systematically and thoroughly assess visual impact levels for a particular project. Without precise information about the location of a project, a relatively complete and accurate description of its major components, and their layout, it is not possible to assess the visual impacts associated with the facility” at page 5-163/1-5). The NPS requests that site-specific analysis be applied for projects within 25</p>	

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		<p>miles of all national parks and other areas administered by NPS in the six-state study area. Site-specific reviews would include identification of appropriate mitigation measures for facility construction, including all related infrastructure to reduce or avoid glint and glare-related visual intrusions as well as secondary effects caused by haze from soil displacement. As noted in Table 2.2-2, BLM lands classed in VRM as Class I, II (and Class III for areas near certain national park units in Utah) are excluded for consideration under the preferred alternative. We ask that BLM consider applying the VRM Class III analysis to determine additional exclusions near parks and other special status areas in the six-state study area. The PEIS should assess the important viewsheds for national park units located within 25 of all lands potentially available for solar energy development.</p>	
5.12	5-158/33	<p>General comment regarding Visual Resources Section and all corresponding visual resources section in SEZ reviews.</p> <p>The Draft PEIS relies on BLM Visual Resource Management strategies to reduce the impact to the visual environment. The protection of natural darkness and night skies is incorporated into the treatment of aesthetic issues; however, the strategies do not include guidance on nighttime lighting mitigation. BLM VRM Handbooks H-8410 and H-8431 are mute on the subject of the nighttime visual environment.</p> <p>The BLM Visual Classification method does not examine nighttime visual quality. In many cases, high quality nighttime visual environments exist in landscapes deemed of lower visual class during daytime analysis. This is particularly relevant to sites such as Gold Point and Amargosa Valley in Nevada and adjacent to Death Valley National Park. Such nighttime visual environments are prized by local residents and visitors to public lands who frequently stargaze there. The BLM should consider nighttime visual environments as poorly classified due to the limited inventory the BLM has on such resources. As a general comment, the PEIS should be cautious when describing visual classifications derived in the daytime and applying such classifications to all visual aesthetic resources, including night skies.</p> <p>The Draft PEIS states that the "primary visual impacts associated with solar energy development would occur during daylight hours...". Empirical evidence however refutes this claim under various circumstances. Daylight visibility is dependent on direct line-of-sight visibility of large high contrast structures. The visual perception can be controlled by</p>	

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		<p>terrain shielding, screen, and choice of colors. At night, lights are usually seen from much larger distances than during the day. Contrast between light sources and the background is extremely high (high contrast ratio), and the physiology of human night vision enhances the noticeability of such point sources of light. Even a modest industrial light fixture will appear brighter than the brightest stars at distances up to 20-40 kilometers. Lights high on poles or on structures are more easily seen directly and more difficult to screen. Additionally, light scattered in the atmosphere (skyglow) is readily seen at night, and is not as readily blocked by terrain. In some cases, the primary visual impact may indeed be at night, not the daytime as stated. The NPS recommends that the PEIS provide additional analysis of night sky impacts, especially in specially designated areas, areas with wilderness characteristics, and other public lands where night time viewing is important.</p>	
5.12.1	5-166/1	<p>General comment regarding the Visual Resources Section. The NPS recommends further discussion regarding the impact on night skies from the siting of solar energy facilities in remote environments. This is not addressed in the Draft PEIS. Many of the lands designated as potentially available for solar energy development under the preferred alternative, including the areas encompassing the proposed SEZs, are in remote areas and will require a supporting workforce and residential, commercial, and industrial development near the site. The impact of such ancillary facilities upon the nighttime visual environment could be as great or greater than the impact of the SEZ alone.</p>	
5.12.1.3.4	5-171/ 44	<p>There are numerous references in the Draft PEIS to obstruction marker lights on towers over 200' height, such as this statement found as this location. The statement gives the impression that this would be the principle impact to the nighttime visual environment. In examining proposed technologies and the rare instances when solar facilities are in current operation, we believe a far greater potential impact is from area lighting and lighting for industrial safety. While PV technology facilities appear likely to have less need for outdoor lighting, thermal solar technologies are similar to conventional power-plant operations. Such facilities have larger, more complex mechanical facilities, and need a substantial number of vehicles and staff on-site. This impact from general outdoor lighting, especially from facilities solar thermal turbine electrical generation, should be disclosed in this section, and all other related discussions in the PEIS.</p>	
5.12.1.3.4	5-171/16-5	<p>Modeling has shown that light emitted toward and slightly above the horizon is the most damaging to the nighttime visual environment. We suggest this be rewritten to state</p>	

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		"Outdoor artificial lighting contributes to skyglow by emitting light directly upward or scattered off the ground and other surfaces upward. Light emitted toward the horizon or slightly above the horizon is by far the most apt to cause skyglow and glare."	
5.12.1.3.4	5-171/ 28	Both modeling and on-the-ground field tests have shown substantial mitigation is possible with outdoor lighting. The tone of this paragraph is somewhat pessimistic. We suggest this be rewritten to state "These light pollution impacts from solar facilities can be substantially reduced by shielding so that no light escapes above a horizontal plane through the light fixtures and reduced with other mitigation measures." Darker ambient environments, as are often found in the six-state-study area, are particularly prone to impacts to the night sky and natural visual character of the night. Such mitigations reduce impacts to nocturnal wildlife species as well as protecting aesthetics.	
5.12.1.3.4	5-171/ 33-42	This paragraph should mention that red marker lighting is often perceived as less intrusive at night than white lighting. Many standard FAA compliant obstruction markers are dual-mode with white in the day and red at night, and this is the preferred approach for solar facilities in dark ambient environments.	
5.12.3	5-191/25	General comment regarding the Potentially Applicable Mitigation Measures Section and all corresponding visual resources sections for SEZ reviews. The NPS requests that the following mitigation measure be considered for the assessment of impacts with transmission lines associated for any solar energy facility: "All transmission lines should be routed and constructed in such a way as to minimize visual impacts on specially designated areas such as lands managed by the National Park Service."	
5.12.3.1	5-193/5-37	The NPS is pleased with the recognition of the significance of national historical trails and the potential impacts to the cultural landscape and visitor experience, and with the specific recommendations in this section regarding National Historic Trails. However, specific requirements as noted in our comment at 2.2.2.2, Table 2.2-2/Item #18, should be imposed to require visual impact assessments from affected trails. As this section is phrased, these are only recommendations, we suggest that they be requirements.	
5.12.3.1	5-195/9-21	The solar energy development program should require visual impact analysis with simulations from the perspective of National Scenic Trails and National Historic Trails for all projects within 25 miles of all national parks and other areas administered by the NPS. Number and location of viewpoints from NPS-administered areas would be determined in consultation with NPS. See Overall Comment 5, and comments at 2.2.2.2 and Table 2.2-	

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5.12.3.2	5-198/38	See General Comment for Chapters 8-13, Visual Resources regarding night sky protection.	
5.13.1	5-204	General comment regarding the Acoustic Environment (Noise) Section. This section primarily limits its discussion to noise impacts on traditional sensitive receptors (nearby residential uses). Preliminary sociological data suggests that impacts to the natural soundscape can lead to a negative national park visitor experience. The NPS is also concerned with the impact of non-natural sounds on wildlife. This chapter of the PEIS should acknowledge that increases in the ambient noise level contributed from solar energy facilities would have a negative effect on recreational uses, such as visitors to national parks and trails. The PEIS should assess the need for additional exclusion areas to protect sensitive acoustical environments in national parks, including wilderness, and other specially designated areas.	
5.13.2.2	5-211/28-29	The NPS agrees with the statement that siting for a dish engine facility to minimize noise impacts is very important. However, due to the combined sound level and difficulty of mitigating a large geographically distributed array, direct mitigation of the source using noise control engineering methods is strongly recommended. For the reasons given above and especially since noise control measures are being considered for wet-cooling tower systems, a sentence should be added to section 5.13.2.2 stating that “Due to the combined noise level from the tens of thousands of dish engines and the difficulty of mitigating noise from a large geographically distributed array, noise control engineering measures should be considered for individual dish engine components such as the engine, electric generator, cooling system, and air compressor before the dish engines are mass manufactured and/or assembled on site.”	
5.17	5-227	General comment regarding the Socioeconomics Section. The PEIS should address the importance of park tourism to the areas potentially available for solar energy development. The 52 NPS units located within 25 miles of lands designated as potentially available for solar energy development experienced 37 million visitors in 2010. These visitors come to parks and other special areas administered by the NPS to enjoy the outstanding visual, recreational, and resource values of the area which include scenic viewsheds, natural sounds and dark night skies. For some local governments and counties, tourism in parks represents a major part of the economic base of the region. The 52 parks accounted for spending by non-local visitors of almost \$2 billion and supported over 27,000 jobs in local communities during 2009.	

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5.19	5-253/1	<p>General comment regarding the Transportation Section.</p> <p>The PEIS should acknowledge and evaluate the transportation effects of solar energy development near national parks and other special areas administered by the NPS on the ability to manage ingress and egress from these special places to accommodate the park visitors. Impacts on local road systems and traffic flow due to solar energy facilities could have a negative impact on local tourism for the region and may be difficult to mitigate. An Access Road Siting and Management Plan may be able to address some issues related to transportation impacts. However, in the more remote locations of national parks there will be considerable challenges in addressing transportation system impacts.</p> <p>The potential increased access to areas of solar power near national parks and other special areas administered by NPS could also make these areas more accessible for other forms of energy development.</p> <p>The cumulative effects of increased construction of roads, power lines and other associated developments could increase the potential for impacts on known and unrecorded properties eligible for the National Register, such as archeological sites. Cumulative secondary impacts such as vandalism may occur after the solar power construction phase, from unauthorized and uncontrolled visitors having easier access to the cultural resources in the area. This section reviews the management of potentially increased vehicular traffic flow, but it does not acknowledge the potential for increased transportation networks to also promote other forms of development that could adversely affect sensitive resources. The PEIS should address these potential impacts.</p>	
6	6-17-18, Table 6.1-3	<p>We recommend inserting the following statement under the “Riverside East” heading: “Development/operation in this SEZ should consider mitigation of noise impacts to Joshua Tree NP.” Additionally, the column entitled “Amount of SEZ with Possible Development Restrictions” should contain the acreage that would be restricted from the development certain types of technology, such as “dish engine, cooling towers, boilers, and turbines” to avoid noise impacts on Joshua Tree National Park.</p>	
6	6-19 -20, Table 6.1-3	<p>We recommend inserting the following statement under the “Riverside East” heading: “Development/operation in this SEZ should consider mitigation of noise impacts to Joshua Tree NP.”</p>	
6.4	6-48/36 and	<p>This section discusses the selection of the Solar Energy Development Program Alternative</p>	



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	continuing on 6-52/1-4, and Table 6.4-1	as the preferred alternative. The comparisons provided in Table 6.4-1 identify “increased pace of development” and “reduced costs to the government, developers, and stakeholders” with respect to the objectives for the agency’s action. The bases for these comparisons in the table should be supported in the associated text. Additional explanation or supporting rationale is needed to support the conclusions that the suggested outcomes of the action alternatives are likely to occur. A counter-argument can be made that the majority of lands considered under the preferred alternative are outside of the proposed Solar Energy Zones and are not subjected to the same level of environmental analysis in the Draft PEIS as areas within the proposed SEZs. Because in-depth analyses of areas lying outside the proposed SEZs would be deferred to the project level, there is a tremendous uncertainty for where and how much development might occur. The NPS believes that a project-by-project approach to solar energy development under the preferred alternative could result in higher overall cost to government, developers, and stakeholders because of inherent uncertainties regarding project siting, environmental protection concerns, and site-specific mitigation requirements that could lead to delays in right of way approval and increase project costs.	
6.5.1	6-57, Table 6.5-1	We recommend inserting the following under the “Transportation” heading: “Aircraft operations (i.e., commercial and general aviation)”. These operations have the potential to contribute significant noise impacts, so should be considered in the cumulative impacts analysis.	
6.5.1.2.1	6-81/13	We recommend that some information about commercial and general aviation flights be provided under the “Transportation” section.	
6.5.2.2	6-90/12, and 6-90/36-43	General comment regarding the Specially Designated Areas and Lands with Wilderness Characteristics Section. This section provides little information about the overall impact that could occur to non-BLM administered specially designated areas and wilderness, including areas administered by the NPS in the six-state area. We believe specially designated areas are critically important to the visitors and economies that have been developed around these areas. Yet, this analysis paints a relatively different picture of the cumulative effects of solar energy development in the six-state area. As previously stated, we know that about 27 percent, or 5,801,274 acres, of the 22 million acres under the preferred alternative are located within 25 miles of 52 national parks and other special places administered by the NPS. And, within just 15 miles of NPS administered areas, 14 percent, or 2,941,991 acres	

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		<p>are identified for possible solar development. These parks and special status areas received over 37 million visitors in 2010, and accounted for spending by non-local visitors of almost \$2 billion and supported over 27,000 jobs in local communities during 2009. These places are integral to the southwestern United States’ landscape and possess sensitive natural and cultural resources that fall under the legal protections of the NPS Organic Act of 1916, as amended.</p> <p>The statements at lines 36-43 suggest that cumulative effects over the six-state study area from solar energy development impacts will be small and that implementation of the design features required under the BLM action alternatives will minimize these impacts. The NPS is concerned that the PEIS suggests that the project-by-project approach to facility siting, design and mitigation will adequately protect specially designated areas, particularly national parks and other special areas administered by NPS, even though no specific cumulative effects thresholds are applied or analyzed.</p>	
6.5.2.2	6-90/17-20	<p>We recommend adding “noise impacts” to the following statement: “Potential effects of nearby solar facilities on these sensitive areas include visual impacts, noise impacts, reduced access, impacts on wildlife that use the developed areas, and fugitive dust during construction, which may affect visibility.”</p>	
6.5.2.4	6-91/25	<p>General comment regarding the Recreation Section. See comment at Section 6.5.2.2, 6-90/12, and 6-90/36-43.</p> <p>The PEIS presents an incomplete characterization of recreation uses, and is not consistent with how recreation uses are characterized in Chapter 5.5. This section emphasizes cumulative effects of solar energy development on recreation use of BLM-administered lands, and ignores the potential cumulative impacts to recreation uses in specially designated areas and wilderness, non-BLM administered lands, adjacent to lands potentially available for solar development. It also needs to recognize potential impacts to National Historic Trails, which are commonly located in the terrain that is easiest to travel such as across valleys and through passes.</p>	
6.5.2.6	6-92/32-33	<p>In this section and other places in the Draft PEIS (for example, see A.2.2.8.1), wording indicates that areas with biological soil crusts are of particular concern with respect to disturbance-effects on soil erosion, fugitive dust emissions, and air quality. Such emphasis is warranted for purposes of protecting biological crust, but it implies that</p>	

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		disturbance of sites without biological crust will not result in accelerated wind erosion. If a site is to be graded for development, risks of wind erosion would be more related to soil texture and landscape setting than to whether the site did or did not have biological crust prior to grading. We recommend that BLM revise the wording in this section and in other related sections to clarify this issue.	
6.5.2.11	6-98/15	See comment at 5.12.1, 5-166/1.	
6.5.2.11	6-98/17-22	The NPS recommends that this section be revised to indicate the dramatic landscape changes likely to occur under the solar energy development program. One example of how this concern may be addressed is in the Imperial Valley Solar Project Draft EIS, which we believe provides a better characterization of the cumulative effect of landscape change. It might be worth reviewing and recommending that some of the language in that document be included in the PEIS. See attached link to access VSP Staff Assessment and DEIS, p.C.13-36-37. <a href="http://www.energy.ca.gov/sitingcases/solartwo/documents/staff_assessment/index.php">http://www.energy.ca.gov/sitingcases/solartwo/documents/staff_assessment/index.php</a>	
6.5.2.12	6-98/37	The NPS believes this section should acknowledge the significant change to the acoustic environment of remote areas that would occur as a result of these projects. The value of the quiet natural soundscape should be recognized, and increases to that soundscape should be recognized as significant.	
6.5.2.12	6-98/45-46	We recommend adding “specially designated areas such as national park units and wilderness areas” to the list of sensitive noise receptors and areas that might be affected during construction.	
6.6.1	6-102/27-32	We interpret this statement to apply to specially designated areas (including national parks and other special areas administered by NPS such as national trails) as significant unavoidable adverse effects. Noise impacts are also recognized as significant long-term impacts. However, recreation impacts are not identified as unavoidable adverse impacts, despite the recognition in section 5.5 that these facilities are not compatible with recreation uses. We believe the PEIS should identify unavoidable adverse recreation impacts to specially designated areas including non-BLM administered areas.	
		<b>COMMENTS COMMON TO CHAPTERS 8 TO 13</b>	
General Comment for Chapters 8 to 13		See our Overall Comment #3. The following table identifies proposed SEZs and general resource impact concerns associated with national parks and a national historic trail.	

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		<b>Proposed SEZ</b>	<b>NPS-Administered Unit</b>	<b>Resource Concern</b>
		Riverside East (CA)	Joshua Tree NP	Viewsheds Noise effects Wilderness Groundwater quantity Night sky viewing Soil erosion Air quality (fugitive dust) Cumulative effects
		Iron Mountain (CA)	Joshua Tree NP	Noise effects Night sky viewing Viewsheds Air quality Cumulative effects
		Red Sands (NM)	White Sands NM	Viewsheds Groundwater quantity Groundwater-dependent biota, wildlife and dune structure Night sky viewing
		Amargosa Valley (NV)	Death Valley NP	Groundwater quantity Viewsheds Noise effects Wilderness Air quality (fugitive dust) Night sky viewing
		Gold Point (NV)	Death Valley NP	Viewsheds Night sky viewing Noise effects
		Fourmile East (CO)	Great Sand Dunes NP&P Old Spanish NHT	Viewsheds Night sky viewing

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<p>General Comment for Chapters 8 to 13 Water Resources</p>		<p>The use of water for dust suppression on service roads needs to be addressed in the PEIS as there is a significant potential for the generation of fugitive dust during the operational phase of solar facilities. Either service road paving or stabilization will be required, or dust abatement will have to be accomplished through continued watering or use of other dust palliatives. Paving or stabilization of service roads is not discussed in sections on “SEZ-Specific Design Features and Design Feature Effectiveness.” Please reevaluate operational water demands to reflect continued use of groundwater for dust abatement or, indicated in SEZ-Specific Design Features and Design Feature Effectiveness specific requirements to stabilize road surfaces against fugitive dust without the use of water.</p>	
<p>General Comment for Chapters 8 to 13 Water Resources</p>		<p>Given the emerging issues surrounding sufficient quantities of fresh water supplies to support human residents and the economic stability of the Desert Southwest, it would be best to simply not permit right-of-way authorizations for construction of water-cooled solar generating facilities. The Draft PEIS clearly articulates that surface and groundwater resources are limited in the six-state area, and states that water for power-plant cooling purposes <u>should</u> be prohibited. The NPS recommends that the solar energy development program be more explicit and prohibit the use of water for power plant cooling purposes. It would be irresponsible to allow the use of water for cooling purposes when better design alternatives are readily available.</p>	
<p>General Comment for Chapters 8 to 13 Air Quality and Climate</p>		<p>General comment regarding all Air Quality- Affected Environment Sections. See comment at 4.11, 4-115/14.</p>	
<p>General Comment for Chapters 8 to 13 Air Quality and Climate</p>		<p>General comment regarding FLM role for PSD permitting in Air Quality Sections. See comment at 4.11.2.3, 4-128/35-36.</p>	
<p>General Comment for Chapters 8 to 13 Air Quality and Climate</p>		<p>General comment regarding Air Quality and Climate Sections. See comment at 5.11, 5-145/1 (#1).</p>	

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<p>General Comment for Chapters 8 to 13 Air Quality and Climate</p>		<p>General comment regarding Air Quality and Climate Sections. See comment at 5.11, 5-145/1 (#2).</p>	
<p>General Comment for Chapters 8 to 13 Air Quality and Climate</p>		<p>General comment regarding Air Quality and Climate Sections. See comment at 5.11, 5-145/1 (#3).</p>	
<p>General Comment for Chapters 8 to 13 Air Quality and Climate</p>		<p>General comment regarding Air Quality and Climate Sections. See comment at 5.11, 5-145/1 (#4).</p>	
<p>General Comment for Chapters 8 to 13 Air Quality and Climate</p>		<p>General comment regarding Air Quality and Climate Sections. See comment at 5.11, 5-145/1 (#5).</p>	
<p>General Comment for Chapters 8 to 13 Visual Resources</p>		<p>General comment regarding Visual Resources Sections. The NPS believes that the PEIS should include in all SEZ-specific design features sections a requirement to minimize the impact upon the nighttime visual environment. In the Draft PEIS, this is only succinctly stated for certain SEZs such as the Amargosa Valley SEZ. The night sky mitigation measures for each SEZ should be consistent given that lands with wilderness characteristics are likely to occur within 25 miles of each SEZ. Suggested language modified from the Amargosa Valley SEZ mitigations could be used for each occurrence: "The design features for visual resources should be adopted to minimize impacts upon wilderness characteristics for both daytime and nighttime."</p>	
<p>General Comment for Chapters 8 to 13 Visual</p>		<p>General comment regarding Visual Resources Sections. The NPS has evaluated the impact of a theoretical large solar energy facility upon an otherwise dark nighttime environment. Even with very low lumen densities of 10,000 lumens per acre (industrial facilities often have 100,000 to 500,000 lumens per acre), a</p>	



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<p>Resources</p>	<p>5,000 acre facility could have a light footprint of 50,000,000 lumens. This has roughly the equivalent impact of a city of 15,000 people. Based on our experience with monitoring nighttime sky quality in over 85 NPS units, such a footprint would be easily visible in a dark environment at distances of approximately 25 miles.</p> <p>The NPS proposes that a standard set of outdoor lighting mitigations be implemented for all SEZs, regardless of location. In addition, an enhanced level of mitigation should be required for sites within 25 miles of all NPS administered areas. Such enhanced mitigation would address site-specific concerns of both aesthetic and ecological resources. A project may avoid enhanced mitigation if it can be shown through modeling that standard mitigations would produce less than 0.10 millilux of vertical illumination at a point within the park boundary and nearest to the facility, and at a point overlooking the facility. This modeling must describe both the impacts of direct light and light scattered through the atmosphere.</p> <p>This requirement should be appended to the section on Night-Sky Protection found in Appendix A, page A-84. This section is mirrored again in on pages 5-198-199 and the requirement should be included in that section, as well.</p> <p>A threshold of 0.10 millilux is chosen since it is equivalent to the brightest natural light source in a moonless night sky— the planet Venus at peak annual illumination under astronomical twilight (-4.0 astronomical magnitude). Such brightness is above the threshold where it would impede full dark adaptation and cast shadows on the ground. A lower threshold may be prudent to protect wilderness values or areas of high quality stargazing, however the NPS is comfortable with this standard as a general level of protection for both visual and ecological resources.</p> <p>There are several proposed SEZs that should be tested for enhanced night-sky mitigation measures, including: Iron Mountain, Riverside East, and Pisgah in California; Fourmile East and DeTilla Gulch in Colorado; Amargosa Valley, Gold Point, and East Mormon Mountain in Nevada; and Red Sands in New Mexico.</p>	
<p>General Comment for</p>	<p>General comment regarding Visual Resources Sections. See comment at 5.12, 5-158/33</p>	

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Chapters 8 to 13 Visual Resources			
General Comment for Chapters 8 to 13 Visual Resources		General comment regarding the Potentially Applicable Mitigation Measures Sections. See comment at 5.12.3, 5-191/25.	
General Comment for Chapters 8 to 13 Transportation		Please see our comment above on the Socioeconomics Sections. See comment at 5.19, 5-253/1.	
		<b>CHAPTER 9</b>	
9.1.5.2	9.1-35/42-43	The Imperial East SEZ is adjacent to the Juan Batista de Anza Historic Trail Auto Route, which generally follows the historic route on paved highways. The NPS expects there would some impacts to travelers on this route from solar energy development.	
9.2 and 9.3		General comment regarding the proposed Pisgah and Iron Mountain SEZs. The proposed Pisgah SEZ and Iron Mountain SEZ lie closest in proximity to Mojave National Preserve, to the west and south of the park. The Pisgah SEZ lies west of the Kelso Dunes and Devils Playground. The Iron Mountain SEZ lies south of the Copper Mountain and Piute Mountain Wildernesses. While Mojave National Preserve is not located immediately adjacent to the proposed SEZs (and the park is not addressed in the corresponding chapter), the NPS is concerned about the implementation of the solar energy development program in areas outside these SEZs, near the park’s boundary. Primary concerns include impacts to desert tortoise and desert tortoise critical habitat, wilderness, and desert bighorn sheep. The Mojave population of desert tortoise ( <i>Gopherus agassizii</i> ) is federally listed as Threatened, and desert tortoise critical habitat is designated in Mojave National Preserve. Moreover, the desert tortoise population extends beyond the boundaries of critical habitat; the NPS manages for desert tortoise protections throughout both critical and potential habitat in Mojave National Preserve.	
9.2.1.1	9.2-1/25	The designated transmission corridor that is assumed to be able to provide access from the Iron Mountain SEZ to the transmission grid (passes east of and through Joshua Tree National Park) is not authorized for those portions traversing the park. Alternative	

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		transmission corridors outside the park will need to be identified and developed.	
9.2.1.1	9.2-1/26	The statement is made that five solar project applications are “pending” in the SEZ. However, the map only shows that one is active in the SEZ; the others are outside of that SEZ. If the five solar applications are to be referenced, please include a map of those.	
9.2.1.2	9.2-4/11 and Table 9.2.1.2-1, note “e”	The transmission corridor is inaccurately referenced as a Section 368 corridor. The corridor is more accurately described as a locally developed planning corridor designated by BLM through the California Desert Conservation Area Plan of 1980.	
9.2.1.3	Page 9.2-6, Table 9.2.1.3-1, Specially Designated Areas and Lands with Wilderness Characteristics	The following two comments apply to Table 9.2.1.3-1, in the “Resource Area” column, under the “Specially Designated Areas and Lands with Wilderness Characteristics,” heading: 1. We recommend replacing “None” with the following SEZ-specific measure: “Application of SEZ-specific design features for visual resource impacts may reduce the visual impact on Specially Designated Lands and Lands with Wilderness Characteristics” (as stated in Table 9.4.1.3-1, Riverside East SEZ). 2. Please refer to our comment for Section 9.2.15.1, Page 9.2-237/ 27-31. The NPS believes that noise impacts from Iron Mountain SEZ will reach Joshua Tree NP. We recommend that SEZ-specific mitigation measures identified for the Acoustic Environment in this table should apply to this section.	
9.2.1.3	9.2-15-16, Table 9.2.1.3-1, Visual Resources	The SEZ-Specific Design Features should be clarified here. The first feature listed indicates that visual impacts should be consistent with VRM Class II management objectives for certain areas. The second feature indicates that visual impacts should be consistent with VRM Class III management objectives, but is not specific for area. Clarify if this last sentence applies to the remainder of the area. The NPS supports the application of the first measure throughout the proposed SEZ, i.e., visual impacts should be consistent with VRM Class II management objective throughout the SEZ in order “to retain the existing character of the landscape.” In proximity to both BLM and NPS Wilderness, the preferred goal would be VRM Class I management objective: “To preserve the existing character of the landscape.” This would seem to be a more consistent objective given the proximity of these protected areas to the proposed SEZ.	
9.2.1.3	9.2-16, Table 9.2.1.3-1, Acoustic Environment	The NPS recommends that impacts to natural soundscapes also be considered in the PEIS. No such analyses appear in the draft. Impacts as a result of noise should not be limited to noise ordinances.	

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9.2.3.2.1	9.2-30/12-16	<p>NPS does not agree that the impact to the wilderness characteristics within Joshua Tree NP would be “minor”, as characterized for the other 3 wilderness areas. Please change this to read: “It is anticipated that wilderness characteristics within areas of Joshua Tree National Park with views of the SEZs have a potential to be adversely impacted”. Please refer to our comment at 9.2.14.3 recommending a specific design feature for Joshua Tree NP and Wilderness.</p>	
9.2.3.2.1	9.2-30/33	<p>NPS disagrees with the statement “...it is anticipated that solar development would have a minimal impact on the park.” This sentence should be revised to say: “Based on visual analysis of the potential impacts of development of the SEZ, it is anticipated that solar development has a high potential to adversely affect the visual resources, including night sky viewing, of Joshua Tree NP and Wilderness.”</p> <p>As referenced in Table 9.2.3.2-1, 14,606 acres within Joshua Tree NP lie within the 25-mile viewshed of the proposed SEZ. To protect Joshua Tree NP viewsheds, the NPS requests that a specific design feature be added to the PEIS that excludes solar energy facilities with a height greater than 7.5 meters that are within 25 miles of the Joshua Tree NP. Please refer to our comments on the specific design features at 9.2.14.3, 9.2-232 through 234.</p>	
9.2.3.3	9.2-32/14 and 18-20	<p>NPS requests that a reference to Joshua Tree Wilderness be added. As noted in our comment at page 9.2-6, Table 9.2.1.3-1, we request that the design feature noted on lines 18-20 be added for Joshua Tree NP.</p> <p>Projects will be visible from Joshua Tree NP, as shown in Figure N.3.2-1, even with the lowest development height target height of 7.5 meters. The NPS is concerned that projects within 25 miles of this park may adversely affect wilderness values. Please refer to our comments on the specific design features at 9.2.14.3, 9.2-232 through 234.</p> <p>Consistent with BLM Instruction Memorandum 2011-061, and with the proposed policies in Appendix A, potential impacts to wilderness in the park should be assessed for each project prior to permitting, as part of pre-application meetings, to determine if projects could have an adverse impact and to identify possible mitigation strategies.</p>	
9.2.9.2.4 and 9.2.9.3	9.2-69/16-20, 29-37 and 9.2-	<p>The NPS agrees that further quantification of the groundwater safe-yield for the Ward Valley is needed prior to the analysis of project-specific applications. However, the SEZ-</p>	

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	70/6-42	specific design features in 9.2.9.3 contain no commitment to conduct such quantification and the Design Features provided in Appendix A.2.2.10 imply that such analysis would be performed by applicants, on a project-by-project basis. The analysis of safe-yield of aquifers within the SEZ on a project-by-project basis will likely result in numerous conflicting estimates of sustainable groundwater development for this SEZ. According to Table 9.2.9.2-2, the water use requirements estimated at full build-out for all technologies except PV exceed the current estimated natural recharge for Ward Valley of 2,700 acre-feet per year. Until groundwater storage, safe-yield, and transport processes are better understood in this area, NPS recommends that BLM adopt as a SEZ-specific design feature such as the following: “The natural recharge value of 2,700 acre-feet per year for Ward Valley will be considered to be the safe-yield until an independent, peer reviewed study for the purpose of describing groundwater availability and quantification of safe-yield against which all development would be analyzed is completed for this SEZ.”	
9.2.9.3	9.2-70/33-35	NPS recommends that groundwater monitoring be performed within the proposed SEZ as a single comprehensive program. The location of monitoring wells should be consistent with such program. This would avoid potential duplicative monitoring efforts and data analyses. The NPS also recommends the inclusion of the following in the list of proposed SEZ-specific design features: “Prior to the evaluation of any project-specific groundwater withdrawals within the SEZ, the BLM and DOE will develop a large-scale groundwater monitoring and management strategy for the SEZ that will be coordinated with all appropriate stakeholders. At least one full year of groundwater monitoring should be conducted prior to any solar energy-related groundwater withdrawals within the SEZ.”	
9.2.14.1	Figure 9.2.14.1-4 and associated text on page 9.2-186	Designated wilderness in Joshua Tree NP should be delineated as a VRI Class I area on this figure. The figure does not fully represent the amount of VRI Class I viewshed that is present. The associated text states that only BLM-administered lands were addressed, but the text also indicates that Class I is reserved for “national wilderness and other congressionally and administratively designated areas, for which decisions have been made to preserve a natural landscape.” This includes Joshua Tree NP, and the NPS requests that the text and figures be modified to show this. Inclusion of this would more fully represent the potential viewshed impacts.	
9.2.14.3	9.2-232 through 234	General comment regarding SEZ-Specific Design Features and Design Feature Effectiveness Section. The NPS believes that the SEZ-specific design features noted in this section do not	

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		<p>adequately protect the viewsheds from Joshua Tree NP. As noted on page 9.2-232, lines 32-34, moderate visual contrast levels would be expected in Joshua Tree NP. To protect Joshua Tree NP and Wilderness viewsheds, the NPS requests that a separate design feature be added to this section, as follows: “Solar energy facilities within 25 miles of the Joshua Tree NP with a height greater than 7.5 meters will be excluded.”</p> <p>Based on the analysis in the Draft PEIS, facilities at this height could still be detected by national park and wilderness area visitors. With the requested exclusion, the visual resource impacts, including impacts to night sky viewing, may be reduced but they would not be eliminated. Consistent with BLM Instruction Memorandum 2011-061, and with the proposed policies in Appendix A, potential impacts to wilderness in the park should be assessed for each project prior to permitting, as part of pre-application meetings, to determine if projects could have an adverse impact and to identify possible mitigation strategies.</p>	
9.2.15.1	Page 9.2-237/27-31	<p>This states that “No sensitive receptors (e.g., hospitals, schools, or nursing homes) exist around the Iron Mountain SEZ.” The NPS recommends that Units of the National Park System be added to the list of sensitive noise receptors. The revised language would read: “One sensitive receptor (e.g., hospitals, schools, wilderness, areas, national parks, or nursing homes) exists near the Iron Mountain SEZ; Joshua Tree NP. The park is located approximately 10 miles from the proposed Iron Mountain SEZ. We believe that noise (from dish engines for example) can travel that distance. We recommend that noise impacts from the Iron Mountain SEZ to Joshua Tree NP be included in 9.2.15.2, Impacts.</p>	
9.2.22.2.1	Table 9.2.22.2-1 and associated text, 9.2-308	<p>Please include a discussion in the associated text and identify on Table 9.2.22.1-1 about the proposed Eagle Crest Hydroelectric Plant.</p>	
9.4	9.4-1	<p>General comments regarding solar energy development near Joshua Tree NP in the proposed Riverside East SEZ and other lands identified for solar energy development in the PEIS.</p> <p>In accordance with the February 24, 2011 agreement between NPS and BLM, the NPS requests that the PEIS specifically preclude any additional renewable energy development projects on those lands excluded from the proposed Desert Sunlight and enXco Eagle Mountain Soliel application footprints, in or adjacent to the Riverside East SEZ.</p>	



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		<p>The potential impacts to Joshua Tree NP from development within the proposed Riverside East SEZ pose great risk to the park’s wilderness, visual (including both daytime and night sky viewing), air and acoustic resources. The NPS believes these impacts are largely unavoidable and unmitigatable and requests that all lands within the proposed Riverside East SEZ, and lands lying adjacent to the proposed SEZ near Joshua Tree NP, located west of the Palen Mountains be excluded from solar energy development. If this request is not accommodated, then NPS would like to work with BLM to develop appropriate exclusions or design features within the proposed SEZ that protect sensitive wilderness, visual, air and acoustic resources within Joshua Tree NP.</p>	
9.4.1.1	9.4-1/38	<p>The 230-kV transmission line that passes through the far western section of the SEZ (passes east of and through Joshua Tree NP) is not available for those portions traversing the park. Alternative transmission corridors will need to be identified and developed.</p>	
9.4.1.2	9.4-4/8	<p>The 230-kV transmission line that passes through the far western section of the SEZ (passes east of and through Joshua Tree NP) is not available for those portions traversing the park. Alternative transmission corridors will need to be identified and developed.</p>	
9.4.1.3	9.4-7, Table 9.4.1.3-1, Specially Designated Areas and Lands with Wilderness Characteristics	<p>The environmental impacts summary states “Solar facility development could adversely affect the scenic view from Joshua Tree National Park, the natural soundscape, and the quality of the night sky environment as viewed from the NP and wilderness areas in the region.” There are no corresponding SEZ-specific Design Features identified in this section to address these impacts. If the lands within the area of the proposed Riverside East SEZ located west of the Palen Mountains are not removed from the proposed SEZ, as requested in our comment at 9.4-1, the NPS requests that “None” be replaced with the following mitigation measure to address these impacts:</p> <p>1. “Areas of Joshua Tree NP nearest to the proposed Riverside East SEZ, including the Coxcomb and Eagle Mountains are classified as wilderness and should be regarded as VRI Class I lands, similar to the Palen and Chuckwalla Mountains Wilderness Areas. With these VRM Class I and/or II objectives applied for all lands in the western half of the proposed SEZ, it is likely that impacts from solar energy development in the western half of the proposed SEZ would not be completely mitigated. Exclusion of areas from solar energy development where unmitigated impacts are likely is recommended.</p>	

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		<p>2. “Application of SEZ-specific design features for visual resource impacts (Sec. 9.4.14) may reduce the visual impacts on wilderness characteristics, scenic resources, and on night sky viewing opportunities.” See comment at 9.4-296 through 299.</p> <p>The NPS believes that development in the Riverside East SEZ has the potential to cause adverse impacts to the visual resources of Joshua Tree NP including the Joshua Tree Wilderness. Please refer to our comments at 9.4.3.2.1, page 9.4-34/11-21, and 9.4.14.3, pages 9.4-296 through 299.</p>	
9.4.1.3	Table 9.4.1.3-1, 9.4-16, Visual Resources	To protect sensitive park viewsheds, the NPS recommends that SEZ-specific mitigation should, at a minimum, be consistent with VRM Class II management objectives in order “To retain the existing character of the landscape”, as discussed in Table 9.4.14.3-1, page 9.4-298. In proximity to both BLM and NPS-administered wilderness areas, the design requirement should be elevated to the VRM Class I management objective: “To preserve the existing character of the landscape.” This would be a more consistent objective given the proximity of numerous wilderness areas to the proposed SEZ.	
9.4.1.3	Table 9.4.1.3-1, 9.4-18, Acoustic Environment and associated text	Please refer to our comment at 9.2.1.3, Table 9.2.1.3-1.	
9.4.2.3	9.4-25	This section provides no SEZ-specific design features. The NPS requests the following design feature be included for the proposed SEZ: “New transmission lines should be routed and constructed in such a way as to minimize visual impacts on specially designated areas such as lands managed by the National Park Service.”	
9.4.3.2.1	9.4-34/11-21	The NPS is concerned that extensive areas of Joshua Tree NP, including wilderness, are located within the viewshed of the proposed SEZ. We concur with the statement on page 9.4-34 “...the potential development of the SEZ would result in large adverse effects on wilderness characteristics in the park.” Because impacts to the park’s scenic views and night sky viewing would not be fully mitigated, we believe more restrictive measures must be implemented to protect these park resources. See our comment at page 9.4-296 through 299.	
9.4.3.3	9.4-35/23	NPS requests that a reference to Joshua Tree Wilderness be added. As noted in our comment at page 9.4-7, Table 9.4.1.3-1, we request that a design feature be added to this section for Joshua Tree NP.	

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		<p>Projects will be visible from Joshua Tree NP, as shown in Figure N.3.4-1, even with the lowest development target height of 7.5 meters. The NPS is concerned that projects within 25 miles of this park may adversely affect wilderness values. Please refer to our comments on the specific design features at 9.4.14.3, 9.4-296 through 299</p> <p>Consistent with BLM Instruction Memorandum 2011-061, and with the proposed policies in Appendix A, potential impacts to wilderness in the park should be assessed for each project prior to permitting, as part of pre-application meetings, to determine if projects could have an adverse impact and to identify possible mitigation strategies.</p>	
9.4.7.1.2, 9.4.7.2 and 9.4.7.3	9.4-57-61	<p>General comment regarding the Soil Resources Section.</p> <p>The NPS requests greater consideration be given to the presence, potential impacts to, and mitigation of the potential disturbance of desert pavements. Desert pavements are underlain by the some of the finest soil particles where more than 50% will pass through a 250 micron filter. Once disturbed by any grading activity these areas are subject to erosion and transport by wind. Any development that involves removal or disturbance of the desert pavement (overlying gravel) will generate large amounts of fine material and dust. The western portion of the proposed Riverside East SEZ (adjacent Joshua Tree NP) has numerous pavement areas. Development areas that disturb desert pavement need specific mitigations and engineering design specifications to prevent erosion and generation of windborne dust. Numerous environmentally compatible products are available for stabilizing soil. The NPS is not in a position to recommend any specific product or manufacturer. However, examples of soil stabilization products can be found at the following sites: <a href="http://www.soil-tech.com/">http://www.soil-tech.com/</a> <a href="http://soilworks.com/">http://soilworks.com/</a> <a href="http://www.enssolutionsaz.com/">http://www.enssolutionsaz.com/</a> <a href="http://soil-loc.com/">http://soil-loc.com/</a>.</p>	
9.4.9.2.4 and 9.4.9.3	9.4-77/43-45 and 9.4-78 and 79	<p>The NPS agrees that further characterization of the groundwater safe-yield for the Chuckwalla Valley is needed prior to the analysis of project-specific applications. However, the SEZ-specific design features in 9.4.9.3 provide no commitments to conduct such quantification and the Design Features provided in Appendix A.2.2.10 imply that such analysis would be performed by applicants, on a project-by-project basis. The analysis of safe-yield of aquifers within the SEZ on a project-by-project basis will likely result in numerous conflicting estimates of sustainable groundwater development for this SEZ. According to Table 9.4.9.2-2, the water use requirements estimated at full build-out</p>	

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		for all technologies except PV exceed the highest estimated groundwater extraction rate in the Chuckwalla Valley, 9,100 acre-feet per year. Safe yield may be less than 9,100 acre-feet per year, which may further constrain water use to PV-only systems. Until groundwater storage, safe-yield, and transport processes are better understood in this area, the NPS recommends that BLM adopt as a SEZ-specific design feature such as the following: “An independent, peer-reviewed study for the purpose of characterizing the groundwater availability and quantification of safe-yield for the Chuckwalla Valley and Palo Verde Mesa Basins will be completed prior to the consideration of project-specific groundwater withdrawals for this SEZ.”	
9.4.9.3	9.4-79/1-3	The NPS recommends that groundwater monitoring be performed within the proposed SEZ as a single comprehensive program. The location of monitoring wells should be consistent with such program. This would avoid potential duplicative monitoring efforts and data analyses. The NPS also recommends the inclusion of the following in the list of proposed SEZ-specific design features: “Prior to the evaluation of any project-specific groundwater withdrawals within the SEZ, the BLM and DOE will develop a large-scale groundwater monitoring and management strategy for the SEZ that will be coordinated with all appropriate stakeholders. At least one full year of groundwater monitoring should be conducted prior to any solar energy-related groundwater withdrawals within the SEZ.”	
9.4.13.2	9.4-207	General comment regarding the Impacts Section (Air Quality). See comment at 9.4-57-61 regarding disturbance of desert pavements. Impact to air quality from fugitive dust includes dust from the construction phase and dust from the operational phase of the project (i.e., long term stability of soils below disturbed desert pavements). Joshua Tree NP collects standard meteorological data including: air speed, direction, temp, RH precipitation and ozone. The collection point is less than three miles west of the western boundary of the proposed SEZ. Based on seasonal data collected from April through October (2008 to present), the wind direction exhibits a bi-modal distribution (predominantly from the south or the north). Mitigations that are specifically designed to prevent fugitive dust from entering the park are needed to address transport fine particulate fugitive dust from southerly winds directly into the wilderness area of Coxcomb Mountains.	
9.4.14.1	Figure 9.4.14.1-5 and associated text on 9.4-218/34 through	Please delineate designated wilderness in Joshua Tree NP and VRI Class I classification on this figure. The figure does not fully represent the amount of VRI Class I viewshed that is present. The text states that only BLM-administered lands were addressed, but the text	

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	p. 9.4-220/8	also indicates that Class I is reserved for “national wilderness and other congressionally and administratively designated areas, for which decisions have been made to preserve a natural landscape.” (page 218, line 34). This includes Joshua Tree NP, and the NPS requests that the text and figures be modified to more fully represent the potential viewshed impacts.	
9.4.14.3	9.4-296 through 299	<p>General comment regarding SEZ-Specific Design Features and Design Feature Effectiveness Section.</p> <p>See our comments at 9.4-7, Table 9.4.1.3-1, and 9.4-16, Table 9.4.1.3-1.</p> <p>The NPS believes that the SEZ-specific design features noted in this section do not adequately protect the viewsheds from Joshua Tree NP. As noted on page 9.4-296, lines 23-27, moderate to strong visual contrast levels would be expected in Joshua Tree NP. To protect Joshua Tree NP and Wilderness viewsheds, the NPS requests that a separate design feature be added to this section, as follows: “Solar energy facilities within 25 miles of the Joshua Tree NP with a height greater than 7.5 meters will be excluded.” See also our comments at</p> <p>Based on the analysis in the Draft PEIS, facilities at this height could still be detected by national park and wilderness area visitors. With the requested exclusion, the visual resource impacts, including impacts to night sky viewing, may be reduced but they would not be eliminated. Consistent with BLM Instruction Memorandum 2011-061, and with the proposed policies in Appendix A, potential impacts to wilderness in the park should be assessed for each project prior to permitting, as part of pre-application meetings, to determine if projects could have an adverse impact and to identify possible mitigation strategies.</p>	
9.4.15.1	Page 9.4-301/4	<p>General comment regarding the Acoustic Environment Section.</p> <p>Currently, there is no mention of Joshua Tree National Park or any other specially designated area as a sensitive noise receptor. We recommend adding the following statement within this section: “Joshua Tree National Park is adjacent to the western SEZ boundary.”</p>	
9.4.15.1	9.4-301/41-43	It is important to note that sound levels within Joshua Tree NP have the potential to be much lower than the levels provided for Riverside County. We recommend adding the	

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		following text to this statement: “On the basis of the population density, the day-night average sound level (Ldn or DNL) is estimated to be 45 dBA for Riverside County, which is on the high end for a rural area (Eldred 1982; Miller 2002). Sound levels in sensitive areas like Joshua Tree National Park have the potential to be much quieter.”	
9.4.15.2.1	9.4-302/40-42	Sound levels in Joshua Tree NP and other wilderness areas have the potential to be much quieter than the rural background sound level. We recommend adding the following footnote to the statement, “For construction activities occurring near these specially designated areas, noise levels are estimated to be about 74 dBA at the locations abutting the SEZ, higher than the typical daytime mean rural background level of 40 dBA.” Recommended Footnote – “Sound levels in specially designated areas, like Joshua Tree National Park, have the potential to be much lower than the rural background sound level of 40 dBA.”	
9.4.15.2.1	9.4-302/18	General comment regarding the Construction Section. We disagree with the assessment of noise impacts to wildlife being limited to 90 and recommend that the citation Mancini et. al. (1988) be removed. Significant research since 1988 that shows that wildlife can react to sound levels much lower than 90 dBA. When noise elevates ambient sound levels, signals that might otherwise have been detected and recognized are missed. The noise is said to mask these signals. Masking degrades an animal’s auditory awareness of its environment, and fundamentally alters interactions among predators and prey. There are many animal species that rely almost exclusively on sounds to locate their prey (e.g. owls, gleaning bats). Masking also affects acoustical communication. Animals have been shown to alter their calling behavior and shift their vocalizations in response to noise (Brumm and Slabbekoorn 2005; Patricelli and Blickley 2006; Slabbekoorn and Ripmeester 2008; Warren et al. 2006). We also recommend that the statement, “construction noise from the SEZ is not likely to adversely affect wildlife in nearby specially designated areas,” be replaced with “Considering all the potential impacts listed above, impacts to wildlife from construction noise would have to be considered on a site-specific basis.”	
9.4.15.2.1	9.4-303/26	There is no mention of potential impacts to visitors at Joshua Tree NP or other specially designated areas near the SEZ. We would recommend adding the following statement: “Construction noise has the potential to adversely affect visitor experience in specially designated areas like Joshua Tree NP.” The following potential effects to humans should be noted: (1) Noise levels above 35 dBA have the potential to increase blood pressure and	



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		heart in sleep humans (i.e., visitors sleeping in camping areas in the park) (Haralabidis et al., 2008), (2) Noise levels above 45 dBA have the potential to wake up humans sleeping (45 dBA represents World Health Organization’s recommendation for maximum noise levels inside bedrooms (Berglund, Lindvall, and Schwela, 1999)), (3) Noise levels above 52 dBA have the potential to interfere with interpretive programs (i.e., speech interference at 10 m) (US EPA, 1974), and (4) Noise levels above 60 dBA have the potential to interfere with normal conversation (i.e., speech interference at 2 m) (US EPA, 1974). Full text of references are available upon request.	
9.4.15.2.2	9.4-304/19	<p>General comment regarding the Operations Section (Acoustic Environment). Extensive research performed since 1988 that shows that wildlife can react to sound levels much lower than 90 dBA. Please see our comment at sec. 9.4.15.2.1, page/line 9.4-302/18.</p> <p>In addition, there is no mention of potential impacts to visitors at Joshua Tree NP or other specially designated areas near the SEZ. We recommend adding the following statement on page 9.4-306, line 46: “Dish engine noise has the potential to adversely affect visitor experience in specially designated areas like Joshua Tree National Park.” In addition, the following potential effects to humans should be noted and are included in our comment above at 9.4.15.2.1, 9.4-303/26.</p>	
9.4.22.4.8	9.4-395/39-41	This statement further supports the NPS comment at 9.4-77/43-45 and 9.4-78 and 79. An independent, peer-reviewed study of the groundwater availability and safe-yield of the Chuckwalla Valley and PaloVerde Mesa groundwater basins is essential before applications for trough or tower facilities are considered within the SEZ.	
9.4.22.4.8	9.4-396/5-6	Please revise this sentence as follows: “The makeup water represents water lost to seepage and evaporation from the storage reservoirs.”	
		<b>CHAPTER 10</b>	
10.3.1.3	10.3-5-6, Table 10.3.1.3-1, Specially Designated Areas and Lands With Wilderness Characteristics,	The NPS concurs with the statement on page 10.3-5 “Solar technologies in the SEZ should be restricted to those with the lowest profile to minimize the visual impact on nearby specially designated areas. Additionally, lighting within the SEZ should be carefully designed to minimize visual impacts on surrounding specially designated areas.” We disagree with the statement on page 10.3-6 “None” regarding the mitigation of potential adverse effects on the night sky viewing experience in the Great Sand Dunes NP. Since there is a potential for a night sky impact, the conclusion cannot be drawn that there is no requirement for mitigation, absent an analysis in the PEIS of the night sky impacts.	

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	page 10.3-7, Recreation, and page 10.3-15, Visual Resources	<p>The NPS concurs with the following SEZ-specific measure on page 10.3-7: “Solar technologies should be restricted those with the lowest profile to minimize the visual impact and the accompanying adverse effect on recreational visitors.” The SEZ is located adjacent to a primary access road to the Great Sand Dunes NP&amp;P and visitors traveling to and from the park are able to view the dune field at large distances. Inside the park, visitors anticipate unobstructed views of the landscape beyond the park boundaries. The presence of concentrated industrial development would have an adverse effect on the park visitor’s recreational experience.</p> <p>The NPS concurs with the statement on page 10.3-15 “The development of power tower facilities should be prohibited with the SEZ.” The NPS asks that this statement also include the statement at page 10.3-7 regarding the restriction to the lowest profile solar technologies within the SEZ to protect viewsheds within Great Basin NP&amp;P.</p>	
10.3.9.3	10.3-70/7-8	<p>This states “Wet-cooling options would not be feasible; other technologies should incorporate water conservation measures; other technologies should incorporate water conservation measures.” The NPS concurs with this statement and recommends that it be modified to further require that solar technologies in the SEZ are restricted to those with the lowest water use requirements to ensure minimal direct and cumulative impacts and effects on San Luis Valley, including Great Sand Dunes NP&amp;P, water resources. Restricting water use to PV and dish engine technologies is consistent with the summary of impacts on water resources, where it is stated on page 10.3-69, line 34 “Securing water rights in the Rio Grande Basin is a complex and expensive process, so dish engine and PV technologies are the preferable solar energy technologies for the proposed Fourmile East SEZ because of their low water use requirements.”</p>	
10.3.9.3	10.3-70/22-23	<p>The NPS recommends that groundwater monitoring be performed within the proposed SEZ as a single comprehensive program. The location of monitoring wells should be consistent with such program. This would avoid potential duplicative monitoring efforts and data analyses. The NPS also recommends the inclusion of the following in the list of proposed SEZ-specific design features: “Prior to the evaluation of any project-specific groundwater withdrawals within the SEZ, the BLM will develop a large-scale groundwater monitoring and management strategy for the SEZ that will be coordinated with all appropriate stakeholders. At least one full year of groundwater monitoring should</p>	

		be conducted prior to any solar energy-related groundwater withdrawals within the SEZ.”	
10.3.14.3	10.3-245/8-9	The NPS concurs with the statement “The development of power tower facilities should be prohibited within the SEZ.” NPS suggests that this measure go further to protect visual resources within Great Sand Dunes NP. The key observation locations from within the park and preserve, including wilderness area, are located at varying elevations. The viewshed analysis in Figure 10.3.14.2-1, page 10.3-201 indicates that portions of the park are within the SEZ viewshed assuming target heights of 7.5 meters and 198.1 meters. Table 10.3.14.2-1 indicates that from 28 to 44 percent of the park is within a potentially affected sensitive visual resource assuming a target height of 650 ft (198.1 meters). Although the analysis suggests weak visual contrasts, and daytime viewing from within the park is mitigated by the distance to the SEZ and intervening visual screening, there is a potential for impacts to night sky viewing. To fully protect viewsheds from Great Sand Dunes NP&P, we recommend any energy development within the SEZ be consistent with, at least, the VRM Class II management objectives.	
		<b>CHAPTER 11</b>	
11.1.1.3	11.1-5/Table 11.1.1.3-1 Specially Designated Areas and Lands with Wilderness Characteristics	<p>The environmental impacts summary states “Wilderness characteristics on 19,406 acres of designated wilderness within the Death Valley NP would be adversely affected. Night sky viewing from the NP could be impaired.” The SEZ-specific design feature states “Design features for visual resources should be implemented to reduce impacts on wilderness characteristics.” As stated in Section 11.1.3.3, page 11.1-27, lines 29-33, the adoption of these design features for visual resources would not completely mitigate the visual impacts. To protect viewsheds and night sky viewing from the Death Valley NP Wilderness, the NPS recommends the incorporation of the following SEZ-specific design feature: “In areas visible from within Death Valley NP, power towers should be prohibited and all other solar energy development should be consistent with VRM Class II management objectives.”</p> <p>Power towers at the maximum potential height of 650 ft. built in the Amargosa Valley SEZ would be moderately to highly visible from many elevations on the east side of the Funeral Mountains, especially from the ridgelines within the Death Valley NP Wilderness. Pyramid Peak at the north end of the Funeral Mountains is designated by the Sierra Club's Desert Peaks Section as one of the 100 peaks on their Desert Peaks list. These peaks are chosen because of their spectacular views. Currently there are no large</p>	

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		industrial operations visible from Pyramid Peak. A power tower facility in this area would substantially change the existing character of the area, changing the area into a large, highly visible solar industrial complex.	
11.1.1.3	11.1-13/Table 11.1.1.3-1, Visual Resources	The NPS agrees with the impact analysis that weak to strong visual contacts could be observed from within Death Valley NP and Wilderness and concurs that VRM Class II management objectives should be required for the proposed SEZ. The NPS that the SEZ-specific mitigation should also prohibit power towers to protect sensitive park viewsheds. The NPS recommends the incorporation of the following SEZ-specific design feature: “In areas visible from within Death Valley NP, power towers should be prohibited and all other solar energy development should be consistent with VRM Class II management objectives.”	
11.1.9	11.1-55	The NPS requests that the BLM continue to work closely with the NPS to ensure that groundwater use for solar energy development within the Amargosa Valley is sustainable in the proposed Amargosa Valley SEZ. Measures must be implemented to encourage the protection of water resources administered by the NPS. These would include the use of dry-cooling technologies, acquisition and retirement of existing groundwater rights within the basin, or other activities that are designed to avoid a net increase in overall water use in the Amargosa Valley.	
11.1.9.1.1	11.1-55/47 through 57/1-3	Revise to read “Other surface water features near the proposed SEZ include the reservoirs, wetlands, streams, and springs located in Ash Meadows NWR, the Devils Hole pool (a unit of Death Valley NP), and the Alkali Flats area, which are located approximately 25 miles southeast of the proposed SEZ (Figure 11.1.9.1-1) . The springs and wetlands in the Furnace Creek area of Death Valley NP located south of the proposed SEZ are also located near the proposed SEZ.”	
11.1.9.1.3.	11.1-60/28	Revise the sentence to read: “which recognized the National Park Service water right at Devils Hole...”.	
11.1.9.1.3	11.1-60/43-45	Please revise sentence to read: “This exception suggests that developers seeking available water right transfers will need to demonstrate to the satisfaction of the NDWR that there will be no net impact to the Devils Hole water right resulting from the transfers.”	
11.1.9.2.4	11.1-66/33-38	Please revise sentence as follows: “Given these constraints of limited water resources and over-allocated water rights, there could be potential future water rights administration action by the NDWR to reduce pumping in the Amargosa Desert basin. In order to reduce the possibility of such action on their projects, developers will need to: a) limit water	

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		requirements through whatever means are available which could include choosing low-water demanding dish engine and PV technologies and implementing water conservation measures including the use of recycled water sources; and b) secure senior water rights through purchase or lease that are within the perennial yield and secure water rights in excess of the needed requirements in order to retire over-allocated water rights.”	
11.1.9.3	11.1-67/9-10	The NPS concurs with this measure; however, we believe it needs to be more restrictive. Conservation measures for dry-cooling, at full build-out, would not likely be sufficient to offset groundwater use at the upper-end water use estimate for the proposed SEZ to positively impact the imbalance of water use in the basin. As pointed out on page 11.1-66, line 21, “Dish engine and PV facilities would be the preferred technologies for use at the proposed Amargosa SEZ with respect to water use requirements.” Consistent with our comment at 11.1-66, this statement should be revised to “Water resource analysis indicates that wet-cooling options would not be feasible; dish engine and PV facilities are the preferred technologies; all other technologies must incorporate measures to reduce overall water use in Amargosa Valley.”	
11.1.9.3	11.1-67/19	Please insert “USFWS, and NPS” following “NDWR”.	
11.1.9.3	11.1-67/30-31	The NPS recommends that groundwater monitoring be performed within the proposed SEZ as a single comprehensive program. The location of monitoring wells should be consistent with such program. This would avoid potential duplicative monitoring efforts and data analyses. The NPS also recommends the inclusion of the following in the list of proposed SEZ-specific design features: “Prior to the evaluation of any project-specific groundwater withdrawals within the SEZ, the BLM and DOE will develop a large-scale groundwater monitoring and management strategy for the SEZ that will be coordinated with all appropriate stakeholders. At least one full year of groundwater monitoring should be conducted prior to any solar energy-related groundwater withdrawals within the SEZ.”	
11.1.14.3	11.1-257/20-23	This states that “siting facilities away from sensitive visual resource areas and other sensitive viewing areas is the primary means of mitigating visual impacts. The effectiveness of other visual impact mitigation measures would be generally limited.” For this reason, the NPS believes that there should be a prohibition of power tower facilities in the proposed Amargosa Valley SEZ. See our comments at pages 11.1-5/Table 11.1.1.3-1, and 11.1-13/Table 11.1.1.3-1. As noted in Section 11.1.14.2.2, at page 11.1-242, lines 32-43, “Most views of the SEZ in these areas would be from elevated viewpoints, and strong visual contrasts would be likely to occur where clear views of the SEZ exist, even beyond	

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		the 5-mi (8-km) limit of the foreground-middleground zone” and “Potential impacts on the National Park would include night sky pollution, such as increased skyglow, light spillage, and glare.” There should be a specific design feature in this section to address the potential impacts to Death Valley NP viewsheds and night sky viewing.	
11.1.15.1	11.1-261/20-21	The NPS requests that Death Valley NP should be listed as noise sensitive receptor.	
11.1.15.2.1	11.1-262/8-13	Please add the following text “Construction activities occurring close to Death Valley NP would be audible in the park and adversely affect soundscapes and visitors at 42 dBA. This noise level would be audible given the low background levels in Death Valley NP. Development/operation close to the park should consider mitigation of noise impacts.”	
11.1.15.2.1	11.1-262/13-16	Please refer to our comment found at 9.4.15.2.1, page/line 9.4-303/242).	
11.1.15.2.1	11.1-262/38	The estimated day-night average noise level for Nye County is estimated to be 25 dBA, well below the level typical of a rural area in the range of 33-47 dBA Ldn (last sentence in section 11.1.15.1, lines 33-35). However, the impacts section refers to a typical daytime rural background level of 40 dBA which conflicts with the prior statement. Therefore, line 38 should be changed to read “about 25 dBA, which is about the same background level estimated for Nye County.”	
11.1.15.2.1	11.1-262/39	The NPS recommends this line state that “In addition, an estimated 40 dBA Ldn at this residence is well above the estimated background level of 25 dBA Ldn. Noise from construction activities would increase background noise levels”	
11.1.15.2.1	11.1-263/13-16	The NPS disagrees with the assessment that noise impacts to wildlife being limited to above 90 dBA and suggests that the citation should be removed. There has been a lot of research performed since 1988 that shows that wildlife can react to sound levels much lower than 90 dBA. When noise elevates ambient sound levels, signals that might otherwise have been detected and recognized are missed. The noise is said to mask these signals. Masking degrades an animal’s auditory awareness of its environment, and fundamentally alters interactions among predators and prey. There are many animal species that rely almost exclusively on sounds to locate their prey (e.g., owls, gleaning bats). Masking also affects acoustical communication. Animals have been shown to alter their calling behavior and shift their vocalizations in response to noise (Brumm and Slabbekoorn 2005; Patricelli and Blickley 2006; Slabbekoorn and Ripmeester 2008; Warren <i>et al.</i> 2006). Vocal adjustment likely comes at a cost to both energy balance and information transfer. We recommend inserting some of the language provided to explain the potential effects that noise can have on wildlife. We also recommend that the	

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		<p>statement, “construction noise from the SEZ is not likely to adversely affect wildlife in nearby specially designated areas,” be replaced with “Considering all the potential impacts listed above, impacts to wildlife from construction noise would have to be considered on a site-specific basis.”</p> <p>The references cited are listed above (see comment at section 9.4.15.2.1, page/line 9.4-302).</p>	
11.1.15.2.1	11.1-263/25-26	<p>Masking effects associated with background sound levels are dependent upon the frequency make-up of the background sound sources. If the background sound is largely devoid of low frequency sound sources, e.g., mechanized sound sources, adding new sources with a lot of low frequency content will not be masked by the existing ambient sources if those sources are mostly higher frequency sources. High wind levels may mask construction noise. It cannot be assumed that construction activities during the day would be masked by existing ambient sound without knowing the frequency content of the background sound. The NPS recommends ending the sentence in line 25 after “day” and deleting the rest of the sentence.</p>	
11.1.15.2.2	11.1-265/19-26	<p>Operation noise at 41 dBA at the boundary of Death Valley NP is likely to be audible inside the park. A 1998 study by Colorado State University found that 72% of Americans surveyed regarded opportunities to experience natural peace and quiet and the sounds of nature as an important reason for preserving national parks (Haas, G. E. and Wakefield, T.J. (1998). National parks and the American public: A national public opinion survey on the national park system. Washington D. C. and Fort Collins, CO.: National Parks and Conservation Association and Colorado State University). There could be adverse impacts to visitors depending on the location of a solar facility and visitor use in the affected areas of Death Valley NP.</p> <p>In addition, NPS disagrees with the assessment of noise impacts to wildlife being limited to above 90 dBA. Please refer to our comment found at 9.4.15.2.1, page/line 9.4-303/242).</p>	
11.1.15.2.2	11.1-266/21-23	<p>Operation noise at 48 dBA at the boundary of Death Valley NP is likely to be audible inside the park. Please see our comments above for sec. 11.1.15.2.2, page/line 11.1-265/19-26.</p>	
11.1.15.3	11.1-267/33-35	<p>NPS disagrees with conclusion that “these activities are not likely to adversely affect</p>	



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		wildlife or visitors at the specially designated areas around the SEZ.” The text should be changed to “The potential for adverse impacts exists and would have to be considered on a site specific basis depending on placement and number of solar energy facilities. SEZ – specific design features may be required.”	
11.2.9.1.2	11.2-59/35-40	According to Harrill and Prudic 1998, the Delamar and Dry Lake Valley basins are part of the Colorado Ground-Water Flow system; the White River system is the informal name given to a sub regional-scale portion of this system (figure 15 and Table 4). Figure 12 identifies a large discharge spring in this system that is located within Lake Mead National Recreation and within the Black Mountains basin. This spring discharge area, commonly known as Rogers and Blue Point Springs, is a series of warm springs located along the north shore of Lake Mead. Current science, including isotopic data, suggests these springs are recharged by a mix of local and regional groundwater sources. Please correct line 37 to note that these springs also represent a terminus area of this flow system.	
11.2.9.3	11.2-68/8-9	NPS recommends that groundwater monitoring be performed within the proposed SEZ as a single comprehensive program. The location of monitoring wells should be consistent with such program. This would avoid potential duplicative monitoring efforts and data analyses. The NPS also recommends the inclusion of the following in the list of proposed SEZ-specific design features: “Prior to the evaluation of any project-specific groundwater withdrawals within the SEZ, the BLM and DOE will develop a large-scale groundwater monitoring and management strategy for the SEZ that will be coordinated with all appropriate stakeholders. At least one full year of groundwater monitoring should be conducted prior to any solar energy-related groundwater withdrawals within the SEZ.”	
11.3.9.1.2	11.3-55/10-41	According to Harrill and Prudic 1998, the Garnet and Hidden Valley basins are part of the Colorado Ground-Water Flow system; the White River system is the informal name given to a sub regional-scale portion of this system (figure 15 and Table 4). Figure 12 identifies a large discharge spring in this system that is located within Lake Mead National Recreation and within the Black Mountains basin, located less than 25 miles from the proposed SEZ. This spring discharge area, commonly known as Rogers and Blue Point Springs, is a series of warm springs located along the western shore of Lake Mead that discharge from Paleozoic carbonate rocks about two miles from the western shore of the lake. Their combined mean annual spring discharge is 2.21 cfs, much too large to be supported by local recharge only. It is generally accepted that the principal source of these springs is from the regional aquifer system generally to the north and northwest,	

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		<p>with a local recharge component. They likely represent the terminal discharge from the White River Ground-Water Flow System. Please note in this discussion that an unknown amount of groundwater outflow from Garnet Valley basin contributes to recharge of these springs within Lake Mead NRA, and these springs also represent a terminus area of this flow system. Please refer to:</p> <p>Laney, R.L., and Bales, J.T., 1996, Geohydrologic Reconnaissance of Lake Mead National Recreation Area – Las Vegas Wash to Virgin River, Nevada: U.S. Geological Survey Water-Resources Investigations Report 96-4033, 44 p. and 1 plate.</p> <p>Page, W.R., Scheirer, D.S., and Langenheim, V.E., 2006, Geologic cross sections of parts of the Colorado, White River, and Death Valley regional ground-water flow systems, Nevada, Utah, and Arizona: U.S. Geological Survey Open-File Report 2006-1040, 1 plate and 23 pg report.</p> <p>Pohlmann, K.F., Campagna, D.J., Chapman, J.B., and Earman, S., 1998, Investigation of the origin of springs in the Lake Mead National Recreation Area: University and Community College System of Nevada, Desert Research Institute, Water Resources Center, Publication No. 41161, 51 p. and three appendices.</p> <p>In line 37, please change “west” to “east”.</p>	
11.3.9.1.2	11.3-55/43-44	Please insert “and southeast” after “east”.	
11.3.9.2.2	11.3-61/24	After “California Wash” please change the sentence as follows: “and Black Mountains basins, which are within the Colorado groundwater flow system”.	
11.3.9.2.2	11.3-61/26	Revise the sentence to read “groundwater discharge to the Muddy River Springs, Muddy River and Rogers and Blue Point Springs”. It is unlikely that impact would include reduced regional groundwater discharge to the Virgin River.	
11.3.9.2.4	11.3-62/40	Insert the following sentence “The NDWR has previously denied water rights to support water-intensive technologies that use wet-cooling.”	
11.3.9.3	11.3-63/29-30	Revise the sentence as follows: “Wet-cooling and dry-cooling options would not be feasible unless the NDWR has determined that more water is available, ...”. The NDWR would need to adopt the results of any hydrologic study regarding the availability of groundwater.	
11.3.9.3	11.3-64/1-2	The NPS recommends that groundwater monitoring be performed within the proposed	

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		SEZ as a single comprehensive program. The location of monitoring wells should be consistent with such program. This would avoid potential duplicative monitoring efforts and data analyses. The NPS also recommends the inclusion of the following in the list of proposed SEZ-specific design features: “Prior to the evaluation of any project-specific groundwater withdrawals within the SEZ, the BLM and DOE will develop a large-scale groundwater monitoring and management strategy for the SEZ that will be coordinated with all appropriate stakeholders .”	
11.3.22.1	11.3-330/Water Resources	Please modify groundwater basins to include Black Mountains.	
11.3.22.2.2	11.3-344/27and 32	Line 27. Please delete “and western Utah.” There are no existing groundwater rights or applications in Utah associated with this project. Please ensure this correction is made in the comparable section of the Delamar SEZ analysis. Line 32. Please add that the project also proposes to develop groundwater in a third basin that is upgradient and hydraulically connected – Cave Valley.	
11.3.22.4.8	11.3-353/20-21	Revise sentence to read “groundwater discharge to the Muddy River Springs, Muddy River and Rogers and Blue Point Springs”. It is unlikely that impact would include reduced regional groundwater discharge to the Virgin River.	
11.4.9.1.2	11.4-61/12-19	See discussion at Comment 11.2-59/35-40 and modify this statement accordingly.	
11.4.9.3	11.4-69/37-38	The NPS recommends that groundwater monitoring be performed within the proposed SEZ as a single comprehensive program. The location of monitoring wells should be consistent with such program. This would avoid potential duplicative monitoring efforts and data analyses. The NPS also recommends the inclusion of the following in the list of proposed SEZ-specific design features: “Prior to the evaluation of any project-specific groundwater withdrawals within the SEZ, the BLM and DOE will develop a large-scale groundwater monitoring and management strategy for the SEZ that will be coordinated with all appropriate stakeholders. At least one full year of groundwater monitoring should be conducted prior to any solar energy-related groundwater withdrawals within the SEZ.”	
11.4.22.2.2	11.4-316/15 and 21	See comment at 11.3-344/27and 32 and modify accordingly.	
11.5.9.3	11.5-64/34-35	The NPS recommends that groundwater monitoring be performed within the proposed SEZ as a single comprehensive program. The location of monitoring wells should be consistent with such program. This would avoid potential duplicative monitoring efforts	

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		and data analyses. The NPS also recommends the inclusion of the following in the list of proposed SEZ-specific design features: “Prior to the evaluation of any project-specific groundwater withdrawals within the SEZ, the BLM and DOE will develop a large-scale groundwater monitoring and management strategy for the SEZ that will be coordinated with all appropriate stakeholders. At least one full year of groundwater monitoring should be conducted prior to any solar energy-related groundwater withdrawals within the SEZ.”	
11.5.22.2.2	11.5-309/30	Please delete “and western Utah.” There are no existing groundwater rights or applications in Utah associated with this project.	
11.6.1.3	11.6-5/Table 11.6.1.3-1 Specially Designated Areas and Lands with Wilderness Characteristics	<p>The environmental impacts summary states “Light from solar facilities could adversely affect night sky viewing in some specially designated areas.” There are no SEZ-specific design features to mitigate potential impacts to Death Valley NP Wilderness. As stated in Section 11.6.2.1, page 11.6-24, lines 29-34, viewshed impacts would occur from power towers. We disagree with the statement at line 33 on this page that there would be “no adverse impacts on wilderness, scenic, or recreational resources..” within Death Valley NP. To protect viewsheds and night sky viewing from within the Death Valley NP Wilderness, the NPS recommends the incorporation of the following SEZ-specific design feature: “In areas visible from within Death Valley NP, power towers should be prohibited and solar energy development should be consistent with VRM Class II management objectives.”</p> <p>Though relatively small at 4,000 acres the affected area of the Last Chance Range ridgeline includes two summits, Last Chance Mountain at 8,455 ft and Sandy Peak at 7,066 ft, that are part of the Sierra Club's Desert Peaks Section's list of 100 Desert Peaks. The peaks are climbed on a regular basis by desert mountaineers seeking an ultimate desert wilderness experience, that includes vast sweeping views in all directions with no major human development visible other than portions of a couple of small dirt roads. The addition of a 650 ft. power tower to this viewshed would have a moderate to significant negative impact, not an impact of "very weak levels" as described in the PEIS.</p>	
11.6.1.3	11.6-12/Table 11.6.1.3-1, Visual Resources	There no SEZ-specific measures for protecting Death Valley NP viewsheds. To protect sensitive park viewsheds, the NPS recommends that SEZ-specific mitigation should, at a minimum, be consistent with VRM Class II management objectives in order to retain the existing character of the landscape. In proximity to both BLM and NPS-administered wilderness areas, the design requirement should be elevated to the VRM Class I	

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		management objective: “To preserve the existing character of the landscape.” This would be a more consistent objective given the proximity of specially designated and wilderness areas to the proposed SEZ.	
11.6.14.2.3	11.6-195/17-19	We disagree with the conclusion that there will be “minimal to weak” visual contrasts experienced in Death Valley NP. As noted in our comment at page 11.6-5/Table 11.6.1.3-1, we believe there will be impacts to viewsheds and night sky viewing from within the Death Valley NP Wilderness and request that power towers should be prohibited and all other development in the proposed SEZ be consistent with VRM Class II objectives.	
11.6.14.3	11.6-195/30	The NPS requests that a SEZ-specific measure be provided in this section to protect viewsheds and night sky viewing from within Death Valley NP Wilderness. See our comment at page 11.6-5/Table 11.6.1.3-1.	
		<b>CHAPTER 12</b>	
12.3.1	12.3-1	<p>General comment regarding the Red Sands Section.</p> <p>The NPS notes that BLM has altered the size of the Red Sands SEZ to be smaller than originally proposed in the June 30, 2009, <i>Federal Register</i> notice. The distance of the SEZ from White Sands National Monument has increased, so that it is now almost 5-miles from the monument. We appreciate these modifications. Following is a discussion of primary concerns to the NPS regarding potential solar energy development impacts to White Sands NM</p> <p>White Sands National Monument was created by Presidential Proclamation in 1933, “...for the preservation of the white sands and additional features of scenic, scientific, and educational interest...” Today, the park is the most visited national park site in New Mexico, receiving some 475,000 visitors per year.</p> <p>The park’s primary concerns related to the Red Sands SEZ continue to be centered around impacts to groundwater and visibility from the primary visitor use area. Groundwater plays a critical role in the formation and preservation of the gypsum dunes at White Sands NM. The playa lakes at Lake Lucero and Alkali Flat are a result of groundwater and they are the sources for gypsum formation. Gypsum formation processes continue today, creating new gypsum for the dunefield to replace that which is lost by wind erosion. In addition, a high water table plays a fundamental role in stabilizing and maintaining the dunes of White Sands. Throughout the dune field, groundwater is present only 18-36</p>	

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		<p>inches below the surface of the dunes. The dunes themselves are at 100% humidity throughout the column of even 30-foot-high dunes. This high water table holds the dunes together, preventing them from rapidly eroding. If the water table were to decline, the dunes would likely dry up and ultimately blow away. This would result in irreversible impacts to the park’s primary resource, along with the loss of the many unique endemic plants and animals that have adapted to this environment.</p> <p>The hydrologic systems, including those supporting the high water table underlying the dunes, are not fully understood. However, NPS believes that the processes controlling the stability of the dunefield are related to the deeper aquifers of the Tularosa Basin, and these aquifers would be targeted for development to support solar energy development within and adjacent to the proposed SEZ. In addition, we do not sufficiently understand how water is transported to Lake Lucero and Alkali Flat, which ultimately results in the formation of new gypsum for the dunes. With these uncertainties, the NPS urges a highly conservative approach to water use for solar energy development in areas near the park.</p>	
12.3.1.3	12.3-4	<p>General comment regarding Summary of Major Impacts and SEZ-Specific Design Features Section.</p> <p>The NPS strongly recommends that solar energy technology in the Red Sands SEZ be limited to photovoltaic (PV) technology only. With this requirement, the use of PV technology will produce 2,002 MW of power - this is comparable to the other technologies that would result in greater environmental impact. The Draft PEIS clearly indicates that PV technology would have far less environmental impact, while still producing a significant amount of renewable power. The presence of PV structures would also not require navigation warning lights, normally required for technologies using towers. This would contribute to preservation of the night sky from within the monument.</p>	
12.3.3.3	12.3-27/41-44	<p>The PEIS states that “Design features for visual resources should be implemented to reduce adverse impacts on White Sands National Monument...” For clarity, the NPS recommends that this section should carry forward the mitigating measure identified at 12.3-241 that power towers would be prohibited to reduce impacts on sensitive areas.</p>	
12.3.9.1.2	12.3-61/18	<p>General comment regarding the Groundwater Section.</p> <p>While the Draft PEIS identifies the role groundwater plays in maintaining and stabilizing the dunes, it does not identify the role groundwater plays in dune formation. Groundwater is critical to the formation of new gypsum in White Sands NM, which is also required to</p>	

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		sustain the dunes. If groundwater resources were adversely affected at Lake Lucero or Alkali Flat, this affect would likewise impact the formation of new gypsum sand to replenish sand in the dune field that is lost due to wind erosion. The PEIS should acknowledge in greater detail the role groundwater plays in dune formation.	
12.3.9.2	12.3-65/39	General comment regarding the Impacts Section. This section clearly shows that the use of PV technology will result in far less impact on water resources than any of the other technologies on the resources of White Sands NM. The degree of water resources impact from the use of PV technology will need to be fully evaluated in project specific analyses to ensure national park resources are protected.	
12.3.9.2.2	12.3-68, Table 12.3.9.2-2	This table clearly shows that photovoltaic (PV) technology will have significantly less impact on groundwater resources than any of the other solar technologies. This technology is estimated to use 102 ac-ft/yr of water. By comparison, the next most water efficient technology is dish engine, which uses 1,023 ac-ft/yr. This is 10 times the amount of water required for PV technology. Both of these systems are estimated to provide the same yield of energy, 2,002 megawatts. Further, even using dry cooling technology, parabolic troughs are estimated to use between 2,573 and 5,455 ac-ft/yr, while power towers would use 1,423 - 3,025 ac-ft/yr. These are between 14 and 53 times the amount of water required for PV technology. We appreciate the statement on page 12.3-71 that wet cooling technologies would be not be feasible because of lack of available water resources. Because all the technologies except PV will utilize excessive amounts of water in this area, NPS believes the accepted technology for the proposed SEZ should be PV only.	
12.3.9.2.2	12.3-70/5-6	This states at that, “PV and dish engine technologies have water use requirements that are reasonable considering what information is known about groundwater in the vicinity of the proposed SEZ.” The use of PV technology is clearly a better choice to protect the scarce groundwater resources in the vicinity of White Sands NM. This is especially true given that the Draft PEIS notes that this sub-area of the Tularosa Basin’s recharge is 11,890 ac-ft/yr, and that groundwater discharge by evapotranspiration is 9,905 ac-ft/yr, and another 16,491 ac-ft/yr of groundwater are extracted (12.3-62). Thus, the area already appears to be at a deficit in terms of aquifer recharge. The Draft PEIS further notes that depth to water levels for wells in the basin have already been substantially declining (12.3-63). The potential for significant cumulative effect of long-term groundwater withdrawals to support other technologies is unwarranted, given that PV technology offers	



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		similar energy generating capacity with dramatically less groundwater needs	
12.3.9.2.4 and 12.3.9.3	12.3-71/12-21 and 12.3-72/8-9	A potential impact of groundwater withdrawals associated with solar energy development in the proposed SEZ is the decline of groundwater levels in the vicinity of White Sands NM. Any long-term rise or fall of 3 ft (1 m) of groundwater levels could initiate major changes in the dynamics that govern the gypsum sand dunes (Fryberger 2010). Therefore, the NPS recommends a SEZ-specific management approach to develop and use a numerical groundwater models effort to determine appropriate levels of groundwater use for solar energy development in the proposed Red Sands SEZ (see page 12.3-71) before any solar project application is considered. If technologies are implemented at Red Sands that utilize more groundwater than that required for PV technology, we would request a monitoring and mitigation plan to be developed in the event operation of the facility causes a detectable lowering of the water table that could threaten dune formation and stabilization. Acknowledging the need for groundwater monitoring wells is stated in the Draft PEIS at 12.3-72. The NPS requests that a detailed SEZ groundwater monitoring plan be developed prior to implementation of Red Sands SEZ management. At least one full year of groundwater monitoring should be conducted prior to any solar energy-related groundwater withdrawals within the SEZ. The plan must demonstrate that effects of SEZ-related groundwater pumping can be detected early, and results of pumping predicted long before impacts to White Sands NM will occur, allowing time to reverse any effect before it reaches the park. A contingency plan should outline how operation of the Red Sands SEZ would be altered or halted to mitigate any adverse impacts on the irreplaceable dune and water resources of the park. The development of this plan should be coordinated with all appropriate stakeholders, including the NPS.	
12.3.10	12.3-73	General comment regarding the Vegetation Section (Red Sands SEZ). The Draft PEIS should recognize that Cottonwood groves and other unique plant species found in White Sands NM depend on the presence of water and present this information in the PEIS. Declining groundwater levels pose a serious threat to the existence of these species in the park.	
12.3.9.3	12.3-71/34-36	This states: "...and conducting hydrological studies to characterize the aquifer from which groundwater would be obtained (including drawdown effects, if a new point of diversion is created)." The NPS recommends that this requirement be not be implemented on a project-by-project basis. Rather, it should be applied as part of a SEZ-wide water management plan. As proposed, it would be impractical to implement hydrologic	

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		characterization on a project-by-project basis as a SEZ-specific design feature by which each applicant must comply. The characterization of hydrologic conditions should be a coordinated, multi-agency effort completed prior to any consideration for SEZ development. That effort must include the adoption of a numerical groundwater model that would be capable of predicting impacts of proposed SEZ groundwater development on water surface elevations in the vicinity of White Sands NM.	
12.3.9.3	12.3-72/8-9	NPS recommends that groundwater monitoring be performed within the proposed SEZ as a single comprehensive program. The location of monitoring wells should be consistent with such program. This would avoid potential duplicative monitoring efforts and data analyses. NPS also recommends the inclusion of the following in the list of proposed SEZ-specific design features: “Prior to the evaluation of any project-specific groundwater withdrawals within the SEZ, the BLM and DOE will develop a large-scale groundwater monitoring and management strategy for the SEZ that will be coordinated with all appropriate stakeholders. At least one full year of groundwater monitoring should be conducted prior to any solar energy-related groundwater withdrawals within the SEZ.”	
12.3.22.3.3	12.3-316/21-22	It is unclear if the recharge referenced in this sentence is for the entire Tularosa Basin, or for the sub-basin in which the Red Sands SEZ is located and which the NMOSE numerical model assumes a recharge of 11,890 ac-ft/yr, referenced as the assumed local recharge value for evaluating SEZ-related groundwater development impacts in section 12.3.9.2.4.	
12.3.12.2.5	12.3-175/10-13	Groundwater is critical to preserving unique species such as the White Sands pupfish which is present in White Sands NM. The Draft PEIS states that, “Impacts on the White Sands pupfish could be minimized or eliminated by avoiding or limiting groundwater withdrawals...” . The NPS agrees that limiting groundwater pumping could minimize the effects on this species. However, these limitations should be clearly articulated in the implementation of the SEZ, before projects are approved.	
12.3.14.1	12.3-193/4	See comment at 5.12, 5-158/33	
12.3.14.1	12.3-198/7-13	The areas adjacent to White Sands NM are classified as Visual Resource Inventory (VRI) Class II, indicating a high degree of visual resource value. However, they are shown as being managed as Visual Resource Management (VRM) Class III, which allows for “moderate modification of the existing character of the landscape.” (12.3-198). To preserve the rural viewshed for visitors to the park, the NPS requests that the block of lands identified as <u>VRI</u> Class II south of the park and north of Twin Buttes in Figure	

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		12.3.14.1-5 be managed as <u>VRM</u> Class II, which would be consistent with the actual inventory of their visual values.	
12.3.14.2.2	12.3-201/5	<p>General comment regarding the Impacts on Lands Surrounding the Proposed Red Sands SEZ Section.</p> <p>The visual resource analysis indicates that 7.5 meter tall PV facilities would be visible from nearly the entire area of White Sands NM, including the Dunes Drive, which is the major focus of visitor activity in the park. Nonetheless, PV would also have the smallest visual intrusiveness of any of the technologies, due to its relatively low height and no need for navigational lighting. Although the development within the proposed Red Sands SEZ still be viewed from within the park, with PV technology, it may be possible to mitigate visual resource impacts.</p>	
12.3.14.2	12.3-206 GoogleEarth Visualizations inset	The Google Earth visualizations and the associated analysis in the visual resources section focuses on the impacts of power towers, which are recommended as prohibited for the proposed Red Sands SEZ. The NPS appreciates the acknowledgement that power towers would be too intrusive for this sensitive area. However, the NPS suggests that the PEIS would be more informative if the Google Earth visualizations were presented for other technologies. It is difficult to understand the differences in visual impact among these different technologies in the Draft PEIS. A more detailed analysis, to fully understand the differences between other technologies proposed – including dish engine, PV, and parabolic trough, is needed.	
12.3.14.3 and A.2.2.13.1	12.3-241/39and A-78-79	The NPS suggests, as an additional mitigating measure to prevent visual impacts on White Sands NM, the use of LIDAR technology as part of visual mitigation and planning to depict localized topography and precisely locate potential solar facilities to reduce visual impacts on the park. LIDAR technology has the capability of determining precise elevation and terrain and gives more detailed representation of even small rises of 10-15 feet, which could be significant for determining if PV solar facilities may be obscured.	
		<b>CHAPTER 13</b>	
13.1.12, 13.2.12, and 13.3.12	13.1-125, 13.2-131, and 13.3-135	<p>General comments regarding the Special Status Species Sections in this Chapter.</p> <p>Bryce Canyon National Park is the only NPS unit that maintains populations of Utah prairie dogs (listed as threatened under the ESA) within our boundary. The park has implemented habitat restoration projects, supported Utah prairie dog research efforts and participates on the Utah Prairie Dog Recovery Team which implements conservation measures to support Utah prairie dog conservation and recovery range-wide. A 12%</p>	

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		<p>impact to Utah prairie dog habitat as indicated in analyses of the proposed SEZs in this chapter comprises a substantial portion of this species’ available and potentially suitable habitat in the West Desert of Utah. This course analysis suggests a cumulative impact that is unacceptable for a threatened species. Depending on the siting of facilities, entire colonies could be impacted by project implementation in any of the three SEZs proposed in Utah. The NPS recommends that additional analysis of the impacts to the Utah prairie dog be provided in the PEIS for the proposed Utah SEZs. Further analysis regarding the potential effectiveness of design features that avoid core colonies should be conducted for each SEZ. Failure to protect, mitigate or enhance Utah prairie dog populations or habitat through energy development programs potentially impacts species viability throughout its range including Bryce Canyon National Park. The NPS also recommends the PEIS reassess the potential cumulative effects to Utah prairie dog populations and habitat and whether proposed measures to reduce or avoid impacts are adequate.</p> <p>The greater sage grouse is a species native to the areas of Bryce Canyon National Park and has demonstrated considerable declines leading to the recent determination that the species is warranted but precluded from listing at this time. All effort should be made to reduce impacts to lek and nesting habitat during project development in the proposed Utah SEZs, including providing adequate protection areas between project facilities and known breeding grounds. An 8% impact to greater sage grouse habitat within the proposed SEZs consists of a substantial portion of this species’ available and potentially suitable habitat in Utah. Depending on facility locations, local populations could be impacted in any of the three SEZs in Utah. The NPS recommends that additional analysis be provided in the PEIS for the impacts to the greater sage grouse for the proposed SEZs in Utah. Further analysis regarding the potential effectiveness of specific design features that avoid lek and nesting habitat should be conducted for each SEZ.</p>	
13.1.15.1	13.1-195	<p>General comment regarding the Acoustic Environment Section. The Draft PEIS does not address potential impacts to the Old Spanish Trail from the Escalante Valley SEZ in Utah. It also assumes background levels of 30 dBA (night) and 40 dBA (day). The NPS recommends that the Final PEIS refer to ambient noise levels that NPS calculated for Zion NP (20 dBA night and 30dBA day) and apply this information for additional analysis of the Old Spanish Trail in the proposed SEZ.</p>	
13.3.9.2.4	13.3-59/27	<p>Please insert after “carbonate-rock aquifer” the following sentence: “If groundwater</p>	

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		withdrawals exceeded the sustainable yield of the basin, the groundwater level declines in Wah Wah Valley and adjacent basins can disturb regional groundwater flow patterns and recharge patterns, which have implications for ecological habitats.”	
13.3.9.2.4	13.3-59/31-34	Please note in this sentence that solar energy projects in the proposed SEZ may require negotiation with other water rights holders to secure project water supplies.	
13.3.9.3	13.3-60/22-23	The NPS recommends that groundwater monitoring be performed within the proposed SEZ as a single comprehensive program. The location of monitoring wells should be consistent with such a program. This would avoid potential duplicative monitoring efforts and data analyses. The NPS also recommends the inclusion of the following in the list of proposed SEZ-specific design features: “Prior to the evaluation of any project-specific groundwater withdrawals within the SEZ, the BLM and DOE will develop a large-scale groundwater monitoring and management strategy for the SEZ that will be coordinated with all appropriate stakeholders. At least one full year of groundwater monitoring should be conducted prior to any solar energy-related groundwater withdrawals within the SEZ.”	
13.3.22.2	13.3-276	Please clarify in Table 13.3.22.1-1 that the geographic extent for groundwater includes Wah Wah Valley and hydraulically connected basins within the Fish Springs Flow System referred to in Harrill and Prudic (1988). The additional basins that should be noted in this table are Snake Valley, Pine Valley, Tule Valley and Fish Springs Flat.	
		<b>APPENDIX A</b>	
A.1	A-1	<p>General comment regarding Current BLM Solar Energy Development Policies Section. The PEIS needs to clarify that the solar energy policies identified in Section A.1 are to be replaced by, or incorporated into, the proposed program policies in A.2.</p> <p>The PEIS should clarify that BLM Instruction Memorandum No. 2011-061, which describes pre-application requirements and screening criteria, will be meshed with, or supplanted by, is to be replaced by, or incorporated into, the proposed solar energy development program policies presented in Section A.2. The PEIS currently does not acknowledge the high potential for conflict for lands “near or adjacent to” lands administered by the NPS, as outlined in BLM Instruction Memorandum No. 2011-061.</p>	
A.2	A-25	<p>General comment regarding Proposed Solar Energy Development Policies Section</p> <p>The policies in this section provide proposed guidance at the project-specific level. As we state in our Overall Comments, we propose that areas be identified for exclusion from solar energy development near national parks and other areas administered by the NPS.</p>	

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		<p>The NPS comments on Section A.2 policies are in response to the text provided in the Draft PEIS, in response to the BLM’s proposed project-by-project approach for solar energy development.</p> <p>The Proposed Solar Energy Development Policies must state that solar energy development may only occur on the public lands only where it would not result in unacceptable impacts to the resources and values of units of the National Park System and other special status areas under NPS administration.</p>	
A.2.1.1	A-25/24 and 31	Please change to “National Park Service (NPS)”.	
A.2.1.2.1	A-27/2-4	The NPS requests this sentence be revised to state: “Proposals will be favored that avoid impacts to resources and values that are the basis for special designations or protections including units of the National Park System and other special status areas under NPS administration.”	
A.2.1.2.2	A-28/15-16	The NPS requests this sentence be revised to state: “Projects that will cause unacceptable impacts to important resources and values, including the resources and values of units of the National Park System and other special status areas under NPS administration, will be denied.”	
A.2.1.2.2	A-28/39-42	<p>The NPS requests this be revised to state: “In general, proposals that avoid impacts on resources that are the basis for special designations will be given strong consideration.”</p> <p>The NPS requests the following sentence be added following the above the sentence: “Solar energy development may occur on the public lands only where it would not result in unacceptable impacts to the resources and values of units of the National Park System and other special status areas under NPS administration.”</p>	
A.2.1.2.2	A-29/42	Please replace “coordinate with” with “coordinate with, and consider the concerns of”	
A.2.1.2.3	A-31/20-22	Please replace “should” with “will”. After this sentence please include the following sentence: “If a proposed project has the potential to cause unacceptable impacts to the resources and values of NPS administered areas, a comprehensive NEPA analysis will be conducted.”	
A.2.2.1	A-36-37/8	<p>General comment regarding the Design Features for Lands and Realty Section.</p> <p>As written, this section focuses on associated electric transmission rights-of-way. The PEIS should acknowledge the full scope of rights-of-way and not those just for solar energy projects on BLM-administered lands. Additional rights-of-ways would likely</p>	

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		include utility corridors such as for water, power for project operations (in addition to electricity, there may be natural gas pipelines), and telecommunications.	
A.2.2.2	A-37/27-38	<p>General comment regarding Design Features for Specially Designated Areas and Lands with Wilderness Characteristics Section.</p> <p>The design features listed are very broad and imply that impacts will be minimized but not <u>avoided</u>. In general, the siting of solar energy facilities should be accomplished by thoroughly evaluating the locations best suited to solar energy development while avoiding impacts to specially designated areas, including areas with wilderness characteristics. As stated, the measures in this section do not ensure the avoidance of adverse effects from solar energy development on specially designated areas, including national parks and other special areas administered by the NPS. The avoidance of adverse impacts must be a primary consideration in relation to wilderness values such as solitude, natural quiet, and viewsheds. The NPS would like to work with BLM on these design features.</p>	
A.2.2.6	A-39/13-17	<p>General comment regarding Design Features for Recreation Impacts Section.</p> <p>The second bullet discusses prohibiting solar facilities “in areas of unique or important recreation resources”. The PEIS should explain what is considered the “area” and what is “important.” The NPS interprets these to mean all areas administered by the NPS that are located near potential solar energy facilities.</p>	
A.2.2.10	A-45/43	<p>General comment regarding Design Features for Water Resources Section.</p> <p>The design features identified in this section are generally well-thought out and deal with major water resource assessment questions on a project-by-project basis.</p> <p>NPS recommends that a Water Resources Monitoring and Mitigation Plan be developed and implemented on a SEZ-wide basis, instead of on a project-by-project basis. NPS believes that groundwater monitoring be performed under a single comprehensive program within a water management plan. As noted in our Chapter 5 comments, such a plan could be scaled at the SEZ- or land-use plan levels. Project-specific monitoring would support the objectives of the plan, including the location of project-specific monitoring wells, monitoring frequency, data analysis and coordination with federal, state and local agencies that manage or have groundwater resource protection interests in the region. This would avoid potential duplicative monitoring and data analyses and improve capability to assess cumulative impacts of water resource development due to solar energy</p>	



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		projects. The above-described monitoring plan should establish data-sharing protocols, and all project developers should be required to share all groundwater monitoring data with the interested federal, state, and local agencies and stakeholders. At least one full year of groundwater monitoring should be conducted prior to any solar energy-related groundwater withdrawals.	
A.2.2.10	A-49/20-24	The NPS supports the concept of managing water use within the sustainable yield of hydrologic systems (surface and groundwater) for all lands included under the preferred alternative. This design feature requirement places the responsibility of defining sustainable water yield, e.g., aquifer safe yield, on the individual project proponent, with such analyses to be performed on a project-by-project basis. This approach likely will lead to biased and/or conflicting technical interpretations of hydrologic information and will promote multiple safe- or sustained-yield projections. The NPS urges that water management plans be adopted for all areas potentially available under the solar energy development program. Such plan maybe completed for individual SEZs and/or at the land-use plan scale and should adopt water availability targets for solar energy development, including any safe yield targets established for over-allocated basins by the appropriate regulatory agency. Areas where sensitive, groundwater-dependent resources occur would also be identified in the plan. The plan may adopt existing estimates based on peer-reviewed science or require the completion of a water availability study to be completed as independent, peer-reviewed science. The safe yield and other SEZ-specific or land-use plan-specific water management measures would then be followed as a guide for reviewing project-specific water use requirements and the developer’s description of water availability. The NPS suggests that this planning requirement be incorporated as a separate solar energy policy statement in Appendix A and discussed in this chapter as a planning measure to be performed by BLM.	
A.2.2.10	A-49/23-24	Please revise to read “while protecting aquatic, riparian, and other water-dependent resources and existing rights.”	
A.2.2.10	A-49/43-46	Please revise as follows: “Project developers shall choose available water sources and water rights and implement water management practices that assure the protection of aquatic, riparian, and other water-dependent natural resources.”	
A.2.2.10	A-50/1-7	See comment at A-45/43.	
A.2.2.10.2	A-52/ 9-11	The NPS asks for clarification regarding “weed-free” certification. Will this be required at the state level, or county level, or elsewhere? Many local governments may not have	

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		weed-free certification standards. In these cases, how will this requirement be met?	
A.2.2.11	A-55 / 4	Please include G1 and G2 species as was requested in NPS comments in Chapter 5, page 5-113 / 25-28	
A2.2.11.1	A-56 / 11	Please add G-ranks of communities to establish a guide and prioritization to identification of communities that may require additional conservation measures.	
A2.2.11.1	A-57 / 4	Please provide examples of plants that do not attract some form of wildlife.	
A2.2.11.1	A-57 / 40	Clarify what is meant by “large withdrawals: of water. Please explain the standard for “affecting water bodies and how much would they need to negatively impact a special status species.”	
A2.2.11.1	A-55/1	General comment regarding the Design Features for Ecological Resources Section. This section lacks standards for conservation actions and a framework for establishing these standards for proximity of energy development to sensitive habitats, and edge habitat management. These standards should be developed and included in the final PEIS.	
A.2.2.11.2	A-60/16-19	Consultation with the US Fish & Wildlife Service under Section 7 of the Endangered Species Act is required before a project is initiated. Project area and surrounding lands must be surveyed in advance of any construction. In addition, sites for any related projects must also be surveyed. Presence of a federally listed species will demand that avoidance and mitigation measures be implemented before work may commence or continue. This statement should be clearer about when FWS consultation is obtained.	
A.2.2.11.2	A-61/12	We suggest that LCC scientists be consulted before treatments of species native to nearby or regional areas that are shifting their range in response to climate change. We also suggest that State Natural Heritage Programs should be included in consultations as well as state wildlife managers.	
A.2.2.11.7	A-71-73	General comment regarding Transmission Lines and Roads Section. The NPS recommends that the relevant sections of the US Fish & Wildlife Service’s program, Reduce Raven Predation on the Desert Tortoise (FONSI, 03/14/2008) be reviewed and incorporated as appropriate in the PEIS.	
A.2.2.12	A-73	General comment regarding the Design Features for Air Quality and Climate Section. Many of the specific SEZ analyses predicted violations of the NAAQs for PM <sub>10</sub> and/or PM <sub>2.5</sub> . Because of this, the document should include particulate matter monitoring requirements as an air quality design feature, particularly in areas with extremely erodible soils. Appendix A.2.2.12 requires on-site wind speed monitoring for dust control on page	

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		<p>A-75 lines 4-8; this design feature should also include PM monitoring. On-site PM monitoring would assist in evaluating the effectiveness of dust control measures during the construction and operations phases, as well as determine whether additional mitigations are required.</p> <p>Along with the PM monitoring, the analysis/design features should also include an adaptive management strategy for dust emissions. The adaptive management strategy would identify criteria for determining when dust control design features and mitigations are not effective and potential next steps. The NPS recommends this strategy include PM concentration trigger thresholds, which would require additional management action if they are exceeded. Adaptive management for dust control is particularly important in situations where visibility in a Class I area may be adversely impacted, or the project/SEZ is located in a PM nonattainment area.</p>	
A.2.2.13.1	A-77/1	<p>General comment regarding Siting and Design Section.</p> <p>These policies and design features will aide in reducing and/or avoiding visual impacts. However, because the design features proposed in this section are intended to be project-specific, we are unable to determine how successful these measures may be in reducing cumulative visual resource impacts or the degree to which these measures could reduce impacts from an unavoidable adverse impact level for a given project.</p>	
A.2.2.13.1	A-84/14 and 5-171	<p>General comment regarding Night-Sky Protection Section.</p> <p>See also comment at 5.12.1, 5-166/1.</p> <p>This section focuses on the protection of night skies on a project-by-project basis. The NPS recommends further discussion in this section regarding how these measures will avoid cumulative impact on night skies from the siting of solar energy facilities in remote environments.</p>	
A.2.2.13	A-84/15	<p>See our general comments regarding night sky protection measures under Comments Common to Chapters 8-13, Visual Resources.</p> <p>As noted in our prior comments regarding night sky protection measures, the PEIS should contain more stringent analyses and night sky protection measures to ensure that night sky viewing from within specially designated areas including NPS units are protected.</p>	
A.2.2.13.1	A-84/15	<p>Though the Draft PEIS requires that applicants submit a lighting plan, there are no stated or referenced criteria with which to evaluate proposed mitigations. The NPS has been</p>	

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		<p>working in this arena and is able to work with the BLM to develop prototype outdoor lighting standards for renewable energy development facilities. Additionally, the Draft PEIS provides no objectives for reducing night sky impacts from solar energy development, even though it acknowledges that in some places there would be noticeable impacts to dark night skies and stargazing in nearby national parks. Nighttime sensitivity of these areas is generally greater than daytime sensitivity or may be impacted from greater distances. NPS offers the following possible objectives for reducing night sky impacts: 1) outdoor lighting will be mitigated such that direct emissions from lamps or fixtures are not visible from outside the SEZ, or to the extent possible with current illumination technology; 2) facility lights be of a color, intensity, placement, directionality, and operational cycle to minimize both impacts to nocturnal species and the natural visual character of the night; 3) advanced mitigation measures be implemented to minimize impacts to the environment while meeting the minimum necessary for safe operation of the facility and basic security requirements; 4) alternatives to permanent lighting and continuous operation lighting be adopted whenever practical; 5) facility lighting is evaluated for its impact upon nearby specially designated areas, areas with wilderness characteristics, or areas valued by the public for stargazing.</p>	
<p>A.2.2.13</p>	<p>A-84/17</p>	<p>The reference and articulation of a Lighting Plan appears here and elsewhere in the Draft PEIS. The NPS suggests the following information be included to strengthen and clarify mitigations:</p> <p>"A lighting plan shall be prepared that documents how lighting will be designed, installed, and utilized to minimize night-sky impacts and impacts to nocturnal wildlife during construction and operations. Lighting for hazard marking shall be the minimum necessary to meet the safety requirement. Lighting for facilities shall not exceed the minimum number, intensity, and coverage required for safety and basic security. All area lighting shall be controlled through timer, sensor, or switch that is available to facility operators; dusk to dawn lighting controlled by photocell alone shall not be allowed except for building egress lighting. Area lights shall only be switched on when there is a specific need (e.g. cleaning mirrors and panels, pumping fuel, persons occupying an area, or alarm situation). When not needed, lights shall be switched off or dimmed to &lt;20% of their full operational intensity. Exceptions to dimmed or switched off lighting for safety purposes shall be articulated in the lighting plan.</p>	

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		<p>All permanent lighting shall be fully shielded (e.g., full cut-off), except for collision markers required by FAA or other emergency lighting triggered by alarms. Such lighting shall be mounted so that no light is emitted above an imaginary horizontal plane through the fixture.</p> <p>Vehicle mounted lights are preferred over permanently mounted lighting for nighttime maintenance activities. When possible, such vehicle mounted lighting shall be aimed toward the ground to avoid causing glare and skyglow.</p> <p>Retro-reflective or luminescent markers are encouraged in lieu of permanent lighting.</p> <p>All lighting shall be of minimum intensity to meet safety criteria. When accurate color rendition is not required (e.g., roadway, basic security), lighting shall be amber in color, using either low-pressure sodium lamps or yellow LED lighting, or equivalent. Such lighting reduces skyglow and wildlife impacts. When white light is required for accurate color rendition, it shall be <math>\leq 3500^\circ</math> Kelvin color temperature. Bluish-white lighting shall be prohibited.</p> <p>In order to minimize night-sky impacts from hazard navigation lighting associated with solar facilities, the applicant shall use AVWS technology for any structures exceeding 200 ft (61 m) in height. If the FAA denies a permit for use of AVWS, the applicant shall limit lighting to the minimum required to meet FAA safety requirements. Dual mode lighting shall be used, with white lighting during the day and red light at night. Strobes shall be prohibited unless BLM approves its use because of conflicting mitigation requirements.</p> <p>The use of signs and project construction signs shall be minimized. Necessary signs shall be made of non-glare materials and utilize unobtrusive colors. The reverse sides of signs and mounts shall be painted or coated by using the most suitable color selected from the BLM Standard Environmental Color Chart to reduce contrasts with the existing landscape; however, placement and design of any signs required by safety regulations must conform to regulatory requirements."</p>	
A.2.2.14	A-90/1	General comment regarding Design Features for Noise Section.	

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		The specific design features for power block/dish engine facility locations and generator orientation, for example, are unknown making the Draft PEIS unclear about how noise intrusions could impact the soundscapes of nearby NPS-administered areas. As stated in this section, the assessment of background ambient sound levels will be an important component of analyzing impacts to soundscapes. The PEIS should contain language articulating the need for such an assessment for potentially affected units of the National Park System or affiliated area.	
A.2.2.14.1	A-90/9-10	The sentence “The ambient measurement protocols of all affected land management agencies shall be considered and utilized” should be changed to read “The ambient measurement and impact assessment protocols of all affected land management agencies shall be considered and utilized (see M.20)”	
A.2.2.14.1	A-90/12	The NPS suggests adding the following bullet: “In order to adequately compare predicted noise levels with the ambient sound levels of nearby sensitive receivers and affected land management agencies, environmental noise mapping tools should be used; for example, using computer-based software that can perform noise prediction according to international standards such as ISO 9613 and the key factors that affect propagation of sound (see M.15.3).”	
A.2.2.14.1	A-90/39	The NPS agrees that siting for a dish engine facility to minimize noise impacts is very important. However, due to the combined sound level and difficulty of mitigating a large geographically distributed array, we suggest the Draft PEIS specifically recommend the use of noise control engineering methods to reduce impacts. For the reasons given above and especially since noise control measures are being considered for wet-cooling tower systems, a sentence should be added that says “Due to the combined noise level from the tens of thousands of dish engines and the difficulty of mitigating noise from a large geographically distributed array, noise control engineering measures should also be considered for individual dish engine components such as the engine, electric generator, cooling system, and air compressor before the dish engines are mass manufactured and/or assembled on site.”	
A.2.3	Table A.2-2, California, Iron Mountain, Visual Resources	The SEZ-Specific Design Features for the proposed Iron Mountain SEZ should be clarified. Where indicated, visual impacts should be consistent with VRM Class II management objectives for certain areas. Additionally, the measure indicates that visual impacts should be consistent with VRM Class III management objectives, but is not area-specific. Clarify if this last sentence in each measure applies to all other parts of the	

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		proposed SEZ. The NPS supports that the visual impacts for the proposed Iron Mountain SEZ should, at a minimum, be consistent with VRM Class II management objectives throughout the SEZ: “To retain the existing character of the landscape.” In proximity to both BLM and NPS Wilderness areas, the NPS prefers that the goal be VRM Class I management objective: “To preserve the existing character of the landscape.” This would be a more consistent objective given the proximity to these protected areas.	
Appendix A	A-128, Table A.2-2, California, Riverside East, Visual Resources	The SEZ-specific Design Features for the proposed Riverside East SEZ should be clarified. The NPS supports the first measure that throughout this SEZ, visual impacts should, at a minimum, be consistent with VRM Class II management objectives throughout the SEZ: “To retain the existing character of the landscape.” In proximity to both BLM and NPS Wilderness areas, the NPS prefers that the goal be VRM Class I management objective: “To preserve the existing character of the landscape.” This would be a more consistent objective given the proximity to these protected areas.	
		<b>APPENDIX G</b>	
Appendix G	Page G-1	If BLM believes it is not possible to address the potential impacts of proposed transmission lines in the PEIS, then NPS requests that detailed EISs be completed for specific transmission proposals that address all associated transmission lines, roads, and other ancillary linear features.	
		<b>APPENDIX H</b>	
H-10	H-25	The Federal Citations do not include NPS noise regulations nor the federally mandated noise and soundscape protection policies of land management agencies, such as NPS. The NPS management policies relevant to noise and soundscape protection are publicly available at <a href="http://www.nps.gov/policy/mp/policies.html">http://www.nps.gov/policy/mp/policies.html</a>	
		<b>APPENDIX M</b>	
M.15.3	M-46/36-38	Although detailed source-, receptor-, and site-specific data may not have been obtained for the simplified noise propagation modeling done at the time of the Draft PEIS, the document’s statement that this information is not available is incorrect. Some source characteristics are known for certain technologies such as the Stirling dish engine. Also, site-specific data such as GIS-based topography, ground characteristics, and vegetation layers, are available via public USGS websites or other land management agency data sources, such as NPS. The sentence “However, such detailed information is unavailable at this time” should be changed to read “Although such detailed information was not obtained for simplified receptor noise level estimations, site-specific data such as GIS-	



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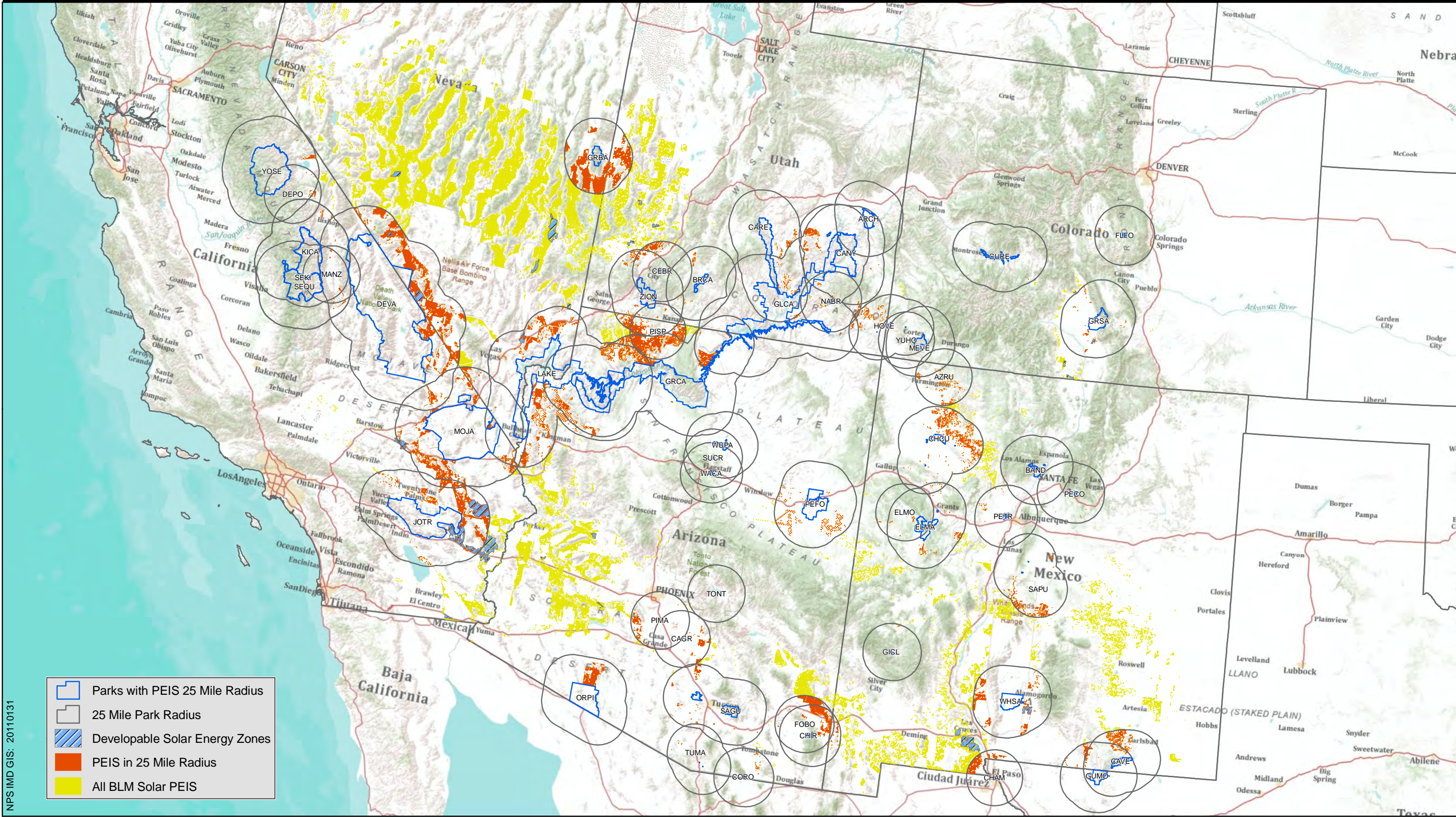
		based topography, ground characteristics, and vegetation layers, are available and should be obtained to perform future site specific noise analyses, using computer-based noise mapping software that can perform noise prediction according to international sound propagation standards such as ISO 9613.”	
M.20	M-70/28	Please our comment at H-10, H-25 for a reference to applicable NPS Management Policies.	

To add addition boxes, press tab.



# Attachment 2 - NPS Units in Proximity to BLM Lands Available for Application (Solar Energy PEIS)

25 Mile Radius



NPS IMD GIS: 20110131

**Solar PEIS in 25 Mile Radius**  
Acreage **5,801,274**

BLM PEIS data was downloaded from <http://solareis.anl.gov/maps/gis/index.cfm>,  
blm\_development\_alternative.shp  
20110128



**Attachment 3 – NPS Units in Proximity to BLM Lands Available for Solar Energy Applications (PEIS)**

**UNIT CODE      FULL NAME  
& STATE**

**Arizona**

CAGR	Casa Grande Ruins National Monument
CHIR	Chiricahua National Monument
CORO	Coronado National Memorial
FOBO	Fort Bowie National Historic Site
GLCA	Glen Canyon National Recreation Area <sup>1</sup>
GRCA	Grand Canyon National Park
ORPI	Organ Pipe Cactus National Monument
PEFO	Petrified Forest National Park
PIMA	Hohokam Pima National Monument
PISP	Pipe Spring National Monument
SAGU	Saguaro National Park
SUCR	Sunset Crater Volcano National Monument
TONT	Tonto National Monument
TUMA	Tumacacori National Historical Park
WACA	Walnut Canyon National Monument
WUPA	Wupatki National Monument

**California**

DEPO	Devils Postpile National Monument
DEVA	Death Valley National Park <sup>2</sup>
JOTR	Joshua Tree National Park
KICA	Kings Canyon National Park
MANZ	Manzanar National Historic Site
MOJA	Mojave National Preserve
SEQU	Sequoia National Park
YOSE	Yosemite National Park

**Colorado**

CURE	Curecanti National Recreation Area
FLFO	Florissant Fossil Beds National Monument
GRSA	Great Sand Dunes National Park and Preserve
MEVE	Mesa Verde National Park
YUHO	Yucca House National Monument

**Nevada**

GRBA	Great Basin National Park
LAKE	Lake Mead National Recreation Area <sup>3</sup>

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<sup>1</sup> Glen Canyon NRA located in Arizona and Utah

<sup>2</sup> Death Valley NP located in California and Nevada

<sup>3</sup> Lake Mead NRA located in Nevada and Arizona

### **Attachment 3 - continued**

#### **New Mexico**

AZRU	Aztec Ruins National Monument
BAND	Bandelier National Monument
CAVE	Carlsbad Caverns National Park
CHCU	Chaco Culture National Historic Park
ELMA	El Malpais National Monument
ELMO	El Morro National Monument
GICL	Gila Cliff Dwellings National Monument
PECO	Pecos National Historic Park
PETR	Petroglyph National Monument
SAPU	Salinas Pueblo Missions National Monument
WHSA	White Sands National Monument

#### **Texas**

CHAM	Chamizal National Memorial
GUMO	Guadalupe Mountains National Park

#### **Utah**

ARCH	Arches National Park
BRCA	Bryce Canyon National Park
CANY	Canyonlands National Park
CARE	Capitol Reef National Park
CEBR	Cedar Breaks National Monument
HOVE	Hovenweep National Monument <sup>4</sup>
NABR	Natural Bridges National Monument
ZION	Zion National Park

#### **National Trails System \***

CALI	California National Historic Trail
ELCA	El Camino Real de Tierra Adentro National Historic Trail
JUBA	Juan Bautista De Anza National Historic Trail
OLSP	Old Spanish National Historic Trail
POEX	Pony Express National Historic Trail

\* Not shown on Attachment 2, national trails span multiple states.

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<sup>4</sup> Hovenweep NM located in Utah and Colorado



# United States Department of the Interior


FISH AND WILDLIFE SERVICE  
Washington, D.C. 20240



MAY 6 2011

In Reply Refer To:  
FWS/AFHC-HRC-CPA/048011

## Memorandum

To: **Acting** Director, Bureau of Land Management  
From: Director   
Subject: U.S. Fish and Wildlife Service Comments on the Bureau of Land Management/Department of Energy Draft Programmatic Environmental Impact Statement for Solar Energy Development

As a cooperating agency, the U.S. Fish and Wildlife Service (Service) has appreciated your continued coordination on the development of the Bureau of Land Management and Department of Energy co-lead Draft Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States.

The comments and recommendations submitted herein were provided by the Service's Southwest, Mountain-Prairie, and Pacific Southwest Regions, as well as the Conservation Planning Assistance and Migratory Bird Management programs at the headquarters office.

Attachment A provides general Service comments and recommendations and Attachments B, B-1, B-2, and B-3 provide specific comments, including maps.

Please contact Larry Bright, Chief, Branch of Conservation Planning Assistance at 703-358-2440 if you have any questions regarding these comments.

Attachments

**U.S. Fish and Wildlife Service**  
**General Comments and Associated Recommendations**  
**on the BLM Draft PEIS for Solar Energy Development in Six Southwestern States**  
**April 2011**

The following general comments and recommendations are organized according to six management concepts that the Service believes are important to consider in assessing and potentially modifying the solar energy development program in the Southwest United States. We offer these concepts as a starting point for constructive dialogue.

**1. Designate modified Solar Energy Zones (SEZs)** as the first phase of development. With the SEZs designed to offer both outstanding solar energy potential and low resource conflict, these areas could be cleared for potential ROW applications in a streamlined permitting process. The existing SEZ alternative in the PEIS could be modified to accommodate this concept, including the revision of proposed SEZ boundaries to further minimize resource conflicts and the addition of new zones that similarly avoid conflicts. Areas outside of the SEZs would be considered for development as we learn from the research and monitoring program conducted on the initial phase.

The Service recommends:

- Selection of a reconfigured SEZ program as BLM's preferred alternative. The current SEZ alternative includes three times the upper limit of acreage estimated by the Reasonably Foreseeable Development Scenario.
- Prioritization of already disturbed lands for solar energy development and inclusion within the SEZ program.
- Reducing the number of acres available for solar energy development outside of the boundaries of SEZs.
- Federal, State and Tribal agencies collaborate to map important use areas for desert tortoise, eagles, and potentially other key species inside of and within a mutually agreed upon distance of designated SEZs. This proactive step could further facilitate the deployment of solar facilities in these areas.
- Modifications to specific SEZs, including:
  - Amargosa Basin SEZ (water, National Wildlife Refuge, and Endangered Species concerns),
  - Pisgah, Iron Mountain, and Riverside East SEZs (high resource conflicts including desert tortoise concerns identified in 2010 project approval process), and
  - Milford Flats South SEZ (Greater sage-grouse concerns associated with the transmission corridor for this SEZ).

## Attachment A

- A clear process for identifying and developing BLM lands outside of the initial SEZs based on knowledge gained and adaptive management.

**2. A phased approach to development** would provide a “cushion” of time for considering the long-term effects of large-scale solar development on the landscape. Such an approach would help focus limited agency resources by bringing to the forefront the principles of Adaptive Management as outlined by DOI Policy (522 DM 1) while also allowing for the immediate build-out of solar energy. An Adaptive Management Plan, including applied research and monitoring, would be an important element of a phased approach.

The Service recommends:

- A rigorous adaptive management plan that includes:
  - implementation of avoidance, minimization, and mitigation measures,
  - periodic surveys in addition to pre-disturbance surveys,
  - monitoring of impacts, reclamation, and mitigation efforts, and
  - measurable performance criteria and established thresholds or “triggers” for remedial action.
- A collective database to maintain survey and monitoring data to be used to inform the adaptive management process.
- A programmatic research program focused on the identification and evaluation of impacts to key species.



**3. Apply a holistic ecological approach** to the final definition of development areas and policies. For example, consider wildlife travel corridors, gene flow between populations, sand transport and core areas of habitat. A key species in the desert southwest is the endangered desert tortoise. The Service has identified core habitat areas and corridors that are important for the survival of this species and would be beneficial to other desert species, such as the flat-tailed horned lizard. Other rare species to consider are the golden eagle, Mojave ground squirrel and bighorn desert sheep. The NPS and FWS consider many of these areas as crucial linkages to habitat within National Park and Refuge units. Overall, the designation of SEZs should avoid significant impacts to rare and endemic species and habitats.

The Service recommends:

- Avoid, as much as possible, impacts to intact wildlife habitat, including areas identified as necessary for desert tortoise recovery by augmenting exclusion areas included in the action alternatives.
- Additional exclusion areas recommended include:
  - areas important to ecological processes, such as sand source and sand transport corridors, and sand deposition zones,
  - connectivity corridors necessary to maintain genetic flow between desert tortoise populations in the Mojave,
  - Audubon Important Bird Areas,
  - essential habitat for sage grouse (as identified by a collaborative effort between the Service and BLM), and
  - special management areas such as Wildlife Habitat Management Areas.
- The development of new modeling tools to reassess compensatory mitigation requirements for projects affecting desert tortoise habitat, and establish lower requirements in areas of lower habitat value to provide incentives for development in those areas.
- Reconsider policies and regulations that govern the use of existing BLM lands for landscape-level mitigation for solar energy development impacts.

## Attachment A

**4. Protect National Park and Wildlife Refuge System resources and values** by excluding lands from solar energy development that would cause adverse impacts to nearby units of either system. SEZ boundaries may need to be adjusted. For areas outside of the SEZs, an analysis of impacts to park and refuge resources may be needed to establish exclusion areas near units. Such areas would likely vary depending on the local landscape, but should be defined prior to final definition of development zones and policies. Measures to protect resources and values associated with national historic and scenic trails would be an additional component of this protection.

**5. Minimize the translocation of wildlife** from development areas. The translocation of desert tortoise from areas of development has come under increasing scrutiny and criticism. It is a costly, experimental activity and results in the mortality of an unknown number of animals. The most effective way to limit translocation is to avoid areas with significant densities of tortoise. If development areas are carefully planned, such as in a phased approach, pre-development surveys could be conducted on a broad scale to inform applicants of areas with high tortoise densities. Increasing mitigation for rare species affected by development may also be an effective approach to reducing impacts to these species.

The Service recommends:

- Translocation of desert tortoise not be considered as standard mitigation and should be used only as a last resort; avoidance and consideration of alternate sites should be standard.
- The description of translocation be edited to indicate its experimental nature.
- BLM adopt new policies that: require ROW exclusions for all BLM lands used for mitigation for solar projects; allow BLM to accept private land with conservation easements, or deed restrictions as compensatory mitigation; require ROW exclusions for unused portions of ROW application sites that are avoided to minimize impacts.

## Attachment A

**6. Water** is a valuable resource in the Southwest. Policies put in place by this PEIS should stress the conservation of water resources, regardless of the origin of the water. Incentives should promote technologies that reduce or limit the use of water and protect water quality.

The Service recommends:

- BLM require hydrological studies be completed prior to the approval of applications.
- Absent supporting data, language describing the impact of water use for mirror/panel washing and potable uses be changed from “relatively minor” to state that any potential impacts to water supplies will be analyzed appropriately under project-specific environmental review.
- Measures to protect special status plant species from surface and groundwater withdrawal impacts be applied to all native vegetation.

**Attachment B**

**Specific Comments and Recommendations  
Draft Solar Energy Development PEIS  
U.S. Fish and Wildlife Service  
April 2011**

**Standard BLM Review Form (Issued December 2010)**

<b>EIS Section</b>	<b>Page/Line</b>	<b>Comment/Suggested Revision</b>	<b>Action (for use by ANL)</b>
<b>Topic: Phased Approach to Development/Adaptive Management</b>			
<b>General Comment</b>		<p>The Service recommends a rigorous adaptive management approach that requires implementation of avoidance, minimization and mitigation measures for effects to species and suitable habitat.</p> <p>The adaptive management plan should include a requirement to conduct surveys periodically. Application of pre-disturbance surveys is presented in the DPEIS as a sufficient dataset for determining effects to listed special status species; however, these surveys cannot define species occurrence or non-occurrence, especially for long-term actions such as the scope of 20 years in the DPEIS.</p>	
<b>General comment</b>		<p>In accordance with Council on Environmental Quality (CEQ) guidance, <i>Appropriate Use of Mitigation and Monitoring and Clarifying Appropriate Use of Mitigated Findings of No Significant Impact</i> (January 14, 2011), the Final PEIS and ROD should require that impacts, reclamation and mitigation efforts be monitored. They should require that monitoring protocols include measurable performance criteria. They should also stipulate that the criteria should be met within time frames appropriate to sensitive periods in the life histories of species of concern or recovery rates of site-specific vegetation and soil types. Protocols for monitoring project-specific impacts and mitigation should be required to establish 'triggers' or thresholds that require remedial action as part of an adaptive management plan.</p> <p>The Service recommends that BLM establish a collective database of survey and monitoring work to effectively inform the adaptive management</p>	

**Attachment B**

	<p>processes. There are numerous conservation planning efforts underway (e.g., Department of Energy/Western Governors Associations Wildlife Decision Support Systems (DSS) and Decision Support Tools (DST)) that could better inform the discussion on areas that are appropriate for exclusion from development under the PEIS and any other energy or infrastructure development application on BLM lands. The first version of these DSS/DST's are expected to be completed this year. A specific measure that could be implemented through adaptive management would be the regular (e.g., annual) re-review of potential areas of exclusion from development following the completion of the DSS/DST or similar conservation planning efforts</p>	
<p><b>General</b></p>	<p>We previously recommended that a programmatic research program be drafted in association with solar energy development across the PEIS area. Baseline conditions on and in immediate proximity to project sites should be characterized and long-term monitoring studies should be designed that will help ascertain what the direct and indirect effects of these projects across the landscape. The National Renewable Energy Lab (NREL) is currently working on research proposals to address these issues and should be consulted on a comprehensive program. A monitoring and adaptive management approach should be included.</p> <p>Though BLM responded that this recommendation is beyond the scope of the purpose and need for the agency action defined for this PEIS, lack of an adaptive management approach would result in a failure to identify and mitigate potentially significant adverse impacts from solar energy development. Although BLM could consider monitoring on a project-by-project basis, the Service recommends that a comprehensive approach to address the cumulative impacts is necessary.</p> <p>Additionally, the BLM and DOE should coordinate with the U.S. Geological Survey (USGS), Service, and State and Tribal wildlife agencies to develop a comprehensive study to evaluate the degree to which solar energy development results in the displacement of breeding eagle pairs, including</p>	

**Attachment B**

		nest and territory abandonment, and displacement of eagles from other <i>important eagle-use areas</i> . Results of the study should be used to develop mitigation measures as well as direct the application of habitat conservation efforts and off-site compensatory mitigation as part of a programmatic adaptive management plan.	
<b>5.10.5.2</b>	<b>General Comment</b>	The Service recommends separating measures for “eliminating or reducing” (avoiding or minimizing) impacts on plant communities and habitats, wildlife resources, aquatic resources, and special status species from “monitoring” measures. Monitoring does not eliminate or reduce impacts, but rather provides data for use in adaptive management practices to aid in determining, if effects are occurring, if avoidance or minimization and mitigation measures are working, and if additional conservation measures are necessary to achieve regulatory compliance. Monitoring-related actions should be a separate section with a purpose defined specifically related to adaptive management, monitoring, and research related issues.	
<b>Topic: Considerations for Modifications to Solar Energy Zones</b>			
<b>2.1</b>	<b>2-1/15-16</b>	<p>We recommend BLM carefully evaluate approving the Amargosa Basin SEZ given the groundwater concerns in this area. As stated in the DPEIS (pg 11.1-59 line 13-15), the past level of groundwater withdrawal has reduced water levels and resulted in impacts to aquatic habitat at Devils Hole (within Ash Meadows National Wildlife Refuge (NWR)). Potential use of groundwater during solar development operations may affect up to 14 federally listed species and DOI agency water rights within this already over-appropriated groundwater basin. The Service, BLM, and National Park Service all hold water rights that may be affected. Currently, it is not possible to model the extent to which continued groundwater pumping in the area may result in future water level declines at Devils Hole and Ash Meadows NWR. Impacts from groundwater withdrawal may not be observed or known for years.</p> <p>The Devils Hole pupfish is listed as endangered and has very low population numbers. Even small declines in spring discharge, small changes in water temperature, and small adjustments in soil or water chemistry resulting from</p>	

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		groundwater withdrawals in the basin may affect species habitat at Ash Meadows NWR and may render areas unsuitable for species such as the pupfish.	
<b>Table 2.2-2; 5.10.5; A.2.2.11</b>	<b>2-10/14-20</b>	Previously disturbed lands should be prioritized for siting the SEZs.	
<b>2.2, Table 2.2.3</b>	<b>2-12</b>	<p>Please refer to our recommendations on desert tortoise linkages and other biological considerations in Attachments B-1 and B-2. Our recommendations will affect three SEZs in California and three SEZs in Nevada.</p> <p>Also, #12 states that “All desert tortoise translocation sites identified in applicable land use plans” would be excluded from future solar energy development. Can portions of a ROW within a proposed SEZ be used for translocation and subsequently excluded from future development?</p>	
<b>2.2.2.3</b>	<b>2-14/22-23</b>	<p>In our October 2010 comments, we submitted the following: If the SEZ alternative is selected, how will the BLM reconcile the fact that so many ROW applications have been received for projects that are outside of the proposed SEZs?</p> <p>The BLM’s response to this comment states: “In Ch 6, BLM identifies the solar energy development program alternative as its preferred alternative which makes lands available where many of the applications outside of the proposed SEZs are located. The number of applications outside the SEZs helps justify the selection of this as the preferred alternative.”</p> <p>While the number of applications may justify a broader alternative, the number of acres available under the preferred alternative is in excess of DOI’s renewable energy goals. The acreage available under this alternative should be significantly reduced by including additional criteria and protections afforded sensitive resources, or, developing a modified approach that identifies specific areas (SEZs) and restricts use of other areas. Refining the number of acres would more clearly guide developers to areas with low resource conflicts and retain more land for multiple-use.</p>	
<b>2.4.2</b>	<b>2-21/15-</b>	The Service recommends that a SEZ alternative reconfigured per Service	



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	<b>27</b>	comments and biological survey data available from several projects approved in 2010 (AECOM 2010a, b, c, d, e; BLM 2010a, b, c, d, e, f, g, h; BLM and CEC 2009; BLM and CEC 2010a, b, c, d, e; CEC 2010a, b, c, d, e, f, g, h; C2HMHill 2008; C2HMHill 2009; C2HMHill 2010; Kenney 2010a, b) would effectively ensure long-term conservation and recovery of special status species and unique habitats across the six-state planning area. While we recognize the need for some flexibility, we maintain that opening up over 21 million acres to an industrial-scale land-use will compromise many of the conservation benefits sought through the implementation of the new policies, guidelines, design features, and mitigation measures identified in the DPEIS.	
<b>2.5.9</b>	<b>2-29/10-14</b>	A great deal of data was collected in support of the ROW applications for renewable energy projects in 2010 that could inform the locations of the SEZs. This information suggests that several of the proposed SEZs will have high resource conflicts. We remain concerned about these issues, especially as they relate to the Pisgah, Iron Mountain, and Riverside East SEZs in California, and encourage the BLM to carefully consider the available information and the Service’s additional criteria when finalizing the PEIS. The available data should be used to eliminate portions of SEZs that have high resource conflicts, to promote connectivity, sand transport, and protect rare species and their habitats. Changes to SEZs based on these data are not included in the Service’s recommendations for connectivity reconfigurations. (AECOM 2010a, b, c, d, e; BLM 2010a, b, c, d, e, f, g, h; BLM and CEC 2009; BLM and CEC 2010a, b, c, d, e; CEC 2010a, b, c, d, e, f, g, h; C2HMHill 2008; C2HMHill 2009; C2HMHill 2010; Kenney 2010a, b)	
<b>5.10.2.1.2</b>	<b>5-76/34-40</b>	The configuration or placement of projects across the landscape will greatly influence the direct, indirect, and cumulative effects of this program. Discreet, disjunct projects scattered across an area may cause more negative effects, such as shifting recreational use from disturbed to undisturbed areas, than clustering large projects into specific areas near existing infrastructure and load centers. The SEZ alternative attempts to do this; however, the placement of the SEZs should be refined to minimize resource conflicts.	
<b>6.1.2, Table 6.1-2</b>	<b>6-17</b>	In our October 2010 comments, we requested the document require that the flat-tailed horned lizard management areas be avoided in the Imperial East	

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		<p>SEZ, pursuant to the existing management strategy for the species.</p> <p>BLM’s response to this comment states: “Text already states “occupied habitats of special status species should be avoided.” Specific species are not identified in this table.”</p> <p>We again recommend that language specific to this species be included because of its BLM sensitive species status and the establishment of management areas and agreement by all signatories to the Range-wide Management Strategy (2003) that these areas are essential to the conservation of the species.</p> <p>Proposed Iron Mountain SEZ: Please refer to our recommendations regarding consideration of criteria relative to desert tortoise conservation and recovery and critical linkages. These data indicate that portions of this SEZ should be excluded from development in order to maintain habitat and genetic connectivity. (Attachment B-1)</p>	
<b>6.1.2, Table 6.1-2</b>	<b>6-18</b>	<p>Proposed Pisgah SEZ: Please refer to our recommendations regarding consideration of criteria relative to desert tortoise conservation and recovery and critical linkages. These data indicate that portions of this SEZ should be excluded from development, or eliminated entirely, in order to maintain habitat and genetic connectivity. (Attachment B-1)</p>	
<b>6.1.2, Table 6.1-2</b>	<b>6-19</b>	<p>Proposed Riverside East SEZ: Please refer to our recommendations regarding consideration of criteria relative to desert tortoise conservation and recovery and critical linkages. These data indicate that portions of this SEZ should be excluded from development in order to maintain habitat and genetic connectivity (Attachment B-1). Additionally, designated WHMAs and unique plant assemblages (e.g., desert dry wash woodlands) should be considered for exclusion from development, due to the rarity of these habitat types.</p>	
<b>9.2.1.3, Table 9.2.1.3-1</b>	<b>9.2-6 – 9.2-19</b>	<p>Because of impacts to recovery of the desert tortoise associated with blockage of genetic connectivity between critical habitat units we recommend elimination of some of the eastern portions of the Iron Mountain SEZ. We do</p>	

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		not currently have mitigation measures available for off-setting loss of genetic connectivity. Consequently, avoidance of critical linkages is the only feasible mitigation strategy to address this impact. Other portions of the SEZ would not affect connectivity in a meaningful way (i.e. lower elevation areas closer to Danby Lake). In addition, areas further north and west of this SEZ in Cadiz Valley are unlikely to support desert tortoise populations at more than a very low density. These areas would have few impacts on desert tortoise populations and little or no impact on connectivity. The Service has developed and mapped critical linkage areas that would be beneficial in revising the alternatives to reduce impacts on desert tortoise populations and gene flow. These maps have recently been provided to BLM. (Attachment B-2)	
<b>9.3.12.1.1</b>	<b>9.3-123/43-46</b>	Based on surveys from the Calico project, approved in 2010, we have survey data to document the occurrence of desert tortoises within the SEZ. (BLM 2010c; BLM and CEC 2010b; CEC 2010c, d)	
<b>Chapter 13</b>	<b>General Comment</b>	<u>Greater Sage-Grouse Impacts at the Milford Flats South (Utah) SEZ:</u> The “Assumed Transmission Corridor” for this SEZ would cross Greater-sage grouse brood-rearing habitat for the Black Mountains - Minerals East leks. The area is also part of the Bald Hills Bird Habitat Conservation Area, which provides nesting for priority shrub-steppe birds including Greater sage-grouse, ferruginous hawk, burrowing owl, Brewer’s sparrow, and sage sparrow. The Service recommends that the PEIS instead identify for use the existing Designated Corridor adjacent to and on the west side of the SEZ.	
<b>A.2.3</b>	<b>A-177/ Table A.2-2 and Global</b>	The Service recommends that BLM ensure that all of the SEZ-specific design criteria in Appendix A are consistent with those contained in each SEZ-specific chapter. It would also be helpful if the criteria are in the same order.	
<b>Topic: Holistic Approach (Including Addition of Exclusion Areas Outside of SEZs)</b>			
<b>General</b>		In our July 2008 and October 2010 comments, the Service recommended that the PEIS include a least environmentally damaging alternative; to date none has been presented. Therefore, the Service submitted additional criteria that would augment the exclusion areas identified under the action alternatives. The goals and objectives of our criteria are to ensure that impacts to intact	

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		<p>ecosystems are avoided and that desert tortoise (Mojave population) recovery is not precluded by habitat losses in key areas (primarily core habitats and linkages) throughout its range. These criteria have been developed in consideration of California’s Desert Renewable Energy Conservation Plan (DRECP) planning goals and objectives to minimize any future conflict between these two planning efforts. We have recommended that our proposed criteria are integrated into Table 2.2-2 under the proposed action alternatives. These criteria should also be incorporated into the policies and design features presented in Appendix A. (See Attachment B-1)</p>	
<p><b>General</b></p>		<p>Long-term conservation of lands used to offset or mitigate impacts from utility-scale solar projects is important to the conservation of listed and other sensitive species. On a project-by-project basis, BLM has determined that it cannot extend long-term protection to existing lands under their jurisdiction that have been identified for mitigation to offset impacts, either through improved management practices or habitat restoration of currently degraded conditions. In contrast, BLM has acknowledged it can receive and protect donated private lands with permanent conservation easements for desert tortoise and other resources as mitigation for project impacts. Lands administered by BLM in CA and NV are important for recovery of species such as the desert tortoise. This issue should be addressed programmatically under the PEIS process. Given the relative scarcity of private lands available for conservation acquisition in select desert tortoise recovery units and BLM’s California Desert Conservation Area (CDCA) LUP amendments (Northern and Eastern Colorado Desert, West Mojave Desert, and Northern and Eastern Mojave Desert plans), this apparent constraint also poses a significant obstacle to BLM’s ability to effectively mitigate the large-scale impacts portended by the proposed action. As a result, the Final PEIS should fully analyze this issue relative to administrative, policy, regulatory, and statutory constraints, with accompanying remedies, to provide more effective mechanisms to manage public lands for conservation purposes, and satisfy BLM’s responsibilities under section 7(a)(1) of the ESA of 1973 as amended.</p> <p>This issue is also critical to formulation of the DRECP. Local governments</p>	

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		<p>have informed the Service and BLM that they oppose solar energy development on BLM lands when all the associated mitigation is on private lands, because such an approach significantly reduces their tax base and eliminates current/traditional uses of public lands for alternative purposes. Addressing this issue pragmatically will be important to completion of the DRECP. One of the obvious solutions to this problem would be for BLM to extend permanent protection to its lands used as mitigation (through improved management and restoration of ecological function) for renewable energy projects on private and public lands. The Final PEIS should thoroughly address this issue as part of the indirect/cumulative effects analyses for biological and impacts.</p>	
<b>1.3.3</b>	<b>1-10/ Footnote 4</b>	<p>Several renewable energy projects have been granted ROWs on BLM lands in California and Nevada in 2010. Anticipated impacts from these projects should be considered as part of the environmental baseline in the Final PEIS.</p>	
<b>2.2.2.2, Table 2.2-2</b>	<b>2-7</b>	<p>In our October 2010 comments, we submitted the following: “The Solar Energy Program Development Alternative provides orders of magnitude more acreage than is necessary to meet the Reasonably Foreseeable Development Scenario (RFDS). Based on the acreages identified, we recommend that the BLM modify this alternative with additional exclusion criteria (described herein) or identify a new alternative that would provide greater protection to biological resources outside of existing conservation lands.</p> <p>A broader range of exclusion criteria are needed beyond those included in the DPIES. We recommend that additional exclusions be considered for particularly vulnerable biological/ecological factors and processes. An example would be ecological processes, such as sand source and sand transport corridors, along with sand deposition zones, which typically support conditions to which local endemic and other specialized species are particularly well-adapted. The Riverside East SEZ supports the endemic Mojave fringe-toed lizard, an undescribed <i>Atriplex</i> (saltbush) taxon, and dense populations of fossorial species that are otherwise found in very low densities across the desert such as American badger, burrowing owl, desert</p>	

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	<p>kit fox, and round-tailed ground squirrel. The species that inhabit these disjunct habitats are extremely vulnerable to extirpation due their patchy, isolated distribution. Sand-dominated systems are characterized by frequent sand and dust storms that would likely pose severe feasibility constraints to the operation and maintenance of solar facilities. Based on the anticipated higher costs to operate solar facilities with these sandy areas, and the high level of species richness and diversity, we request sand source, transportation, and deposition areas be specifically excluded from consideration for solar development whether in a proposed SEZ or not.</p> <p>All exclusions that relate to protection of biological resources are based on existing land use designations. However, there are likely to be many important locations outside of these areas that have not been identified simply due to a lack of available survey data. Consequently, a project may be proposed in an area that we determine to be of critical importance after our review of initial surveys (e.g., a site that is found to have exceptionally high desert tortoise densities or a site containing a significant percentage of the known occurrences for a given rare plant). The establishment of biological thresholds would provide the necessary guidance to allow the BLM to deny or modify ROW applications based on their pre-project survey results would allow the BLM and the Service to focus our limited resources on projects sited in more appropriate locations. It could also help to focus the range of alternatives identified in the project-specific EIS by eliminating certain project designs or footprints that violate the thresholds identified in the PEIS. Additional biological threshold criteria for exclusion should be developed as integral components of the action alternatives. These exclusions should apply to areas both in and out of identified SEZs. Therefore, we recommend BLM consider the following in development of additional criteria or refinement of existing criteria:</p> <p>The original desert tortoise recovery plan (FWS 1994) and the draft revised recovery plan (FWS 2008) emphasize that the historic distribution of desert tortoises was relatively continuous across the species' range, and gene flow</p>	
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	<p>generally occurred according to a continuous-distribution model. For gene flow to reliably continue across the range, desert tortoise habitats need to be connected across the range rather than creating “conservation islands.” The solar energy development program has the potential to significantly fragment desert tortoise habitats and result in isolated populations; therefore, it is imperative that there are provisions under the proposed action to maintain habitat and population connectivity through the PEIS. We recommend integrating additional exclusion areas based on data used in the USGS habitat model (Nussear et al. 2009) together with other landscape genetics (i.e., Hagerty et al. 2010) and landscape modeling efforts (The Nature Conservancy’s Mojave and Sonoran deserts ecoregional assessments, Randall et al. 2010 and Marshall et al. 2000) that depict linkages necessary to connect Desert Wildlife Management Areas (DWMAs)/Areas of Critical Environmental Concern (ACECs)/Critical Habitat Units (CHUs) and identify additional core habitat areas, including select Wildlife Habitat Management Areas identified in various LUPs. We have recently provided BLM with maps depicting these areas. We would like the opportunity to work with BLM to use the results of this modeling effort in development of exclusion criteria.</p> <p>The approved and draft revised recovery plans identify a strategy for the desert tortoise based on reserve-level protection in DWMAs/ACECs, which are mostly analogous with designated critical habitat. To date, protection of these lands has not been sufficient to recover the species and lands outside critical habitat determined to be important for recovery. Therefore, we recommend that through the PIES, BLM consider additional protection of lands where implementation of management/recovery actions have or will restore primary habitat for the desert tortoise (e.g., burned areas).</p> <p>There are areas outside of existing reserve areas that provide high habitat values for the desert tortoise, including areas that support relatively high tortoise populations and are in areas with few other resource conflicts. These areas may be important for long-term conservation of the species. We would</p>	
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	<p>like to work with BLM to develop exclusion criteria for the Final PEIS to protect some of these areas.</p> <p>Within the range of the Mojave population of the desert tortoise, BLM has established a compensation requirement for projects that affect tortoise habitat. These requirements were designed to offset the impacts of the more typical traditional uses of BLM desert lands. To ensure that these compensation requirements are meeting the objective of offsetting impacts of a utility-scale solar program to the species, the Service recommends using new modeling tools that provide a comparative value for the various recovery actions available to benefit this species. These new tools represent the best available information, and can help BLM and the Service ensure that the impacts of solar development, including compensation measures, can be appropriately evaluated under NEPA.</p> <p>For areas without sufficient biological and natural communities data, we recommend BLM require surveys/inventories be conducted prior to acceptance of ROW applications to determine whether applications are consistent with established measures/thresholds.</p> <p>We recommend the BLM establish incentives to develop areas with lower habitat value, such as relaxed habitat compensation/mitigation requirements, or through preapprovals in the programmatic Section 7 consultation based on predetermined BLM mitigation requirements.”</p> <p>BLM’s response to these comments states: “The BLM will develop a policy for coordination with the Service to be included as part of the Draft Solar Energy Program (added to Appendix A). The policy will address FWS input for individual solar energy projects. Also, avoiding or minimizing impacts on sand dunes and sand transport systems are included in SEZ-specific design features for those SEZs that include these habitats. These habitats are recommended for exclusion because of the special status species they support.”</p>	
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<b>Table 2.2-2; 5.10.5; A.2.2.1</b>	2-9/6-9	Based on BLM’s response to the above comment, sand dunes and sand transport systems would be excluded from solar energy development; the GIS data are now available for these features within the Riverside East SEZ and should be incorporated into the final document. (Kenney 2010a)	
<b>2.2.2.2 (Table 2.2-2)</b>	2-8, 2-9	The Service recommends the following areas be added to the exclusions: The Audubon Society’s Important Bird Areas; species’ habitat identified in the Service’s BCC and Focal Species Initiatives; appropriate buffer areas identified around known bald eagle nests; and essential habitat for sage grouse (as identified by a collaborative effort between the Service and BLM). (See Attachment B-3)	
<b>Table 2.2-2; 5.10.5; A.2.2.11</b>	<b>2-8; 5-126</b>	Throughout the DPEIS, BLM recommends project facilities and activities not be located in or near occupied habitats of special status animal species. The Service recommends adding these proposed exclusions to Table 2.2-2 to clearly identify these areas to developers and BLM field staffs and explicitly stipulate in Section 5.10.5.	
<b>General and 2.4</b>		Currently, there are hundreds of applications on both public and private lands that should be better coordinated through a strategic, comprehensive energy program to ensure the most efficient use of sensitive lands and existing urban infrastructure across the country. It is important to establish policies that will carefully weigh the costs and benefits of renewable energy development in native habitats with sensitive species.	
<b>4.10.1</b>	<b>4-79 to 4-80</b>	We recommend that vegetation assemblages and habitats identified as unique or uncommon in existing LUPs, and that warrant increased conservation status, should be discussed within the PEIS. For instance, the BLM’s NECO LUP identifies desert dry wash woodland as an uncommon vegetation type in the Colorado Desert and requires higher mitigation ratios for impacts to these features.	
<b>5.3 6.1.2, Table 6.1.2</b>	<b>5-8/1-18 6-10</b>	The Service recommends excluding special management areas such as WHMAs under the NECO LUP. These lands were designated to achieve conservation of 80 percent of the special status species identified under this planning effort. At a minimum, a disturbance threshold of no more than 1 percent should be placed on areas within these designations.	
<b>5.10.5.1</b>	<b>5-127/31</b>	We recommend that after “crucial wildlife habitats,” you add “and linkages.”	

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<p><b>6.1.2</b></p>	<p><b>6-34/32-41 and other relative sections in this chapter</b></p>	<p>In our October 2010 comments, we expressed concern that the lands with &lt;5% slope that are targeted for solar energy development often coincide with those preferred by the desert tortoise. Therefore, please consider our previous recommendations to work with the Service to integrate new information on critical linkages and the habitats with the highest probability of supporting the species.</p> <p>BLM’s response to this comment stated: “Other design features for protection of desert tortoise will adequately minimize impacts.”</p> <p>While we agree that many of the design features will facilitate conservation of the species, given the scope of the DPEIS, the magnitude of potential impacts, and the number of existing ROW applications on both public and private lands, it is unknown whether cumulatively these actions along with implementation of the proposed design features will be sufficient for long-term recovery of the species.</p>	
<p><b>6.1.2, Table 6.1-2</b></p>	<p><b>All</b></p>	<p>In our October 2010 comments, we submitted the following: “Language relative to protecting habitat and population connectivity between and among conserved lands should be included for all SEZs.”</p> <p>BLM’s response to this comment stated: “This table presents those considerations identified in the SEZ analyses that could constitute development restrictions. No specific restrictions were identified for habitat connectivity. The table acknowledges additional restriction could be identified.”</p> <p>Based on our recommended criteria relative to desert tortoise conservation and recovery and critical linkages, we request that this language be included in this table for all SEZs in the Final PEIS.</p>	
<p><b>Ch 7</b></p>	<p><b>General Comment</b></p>	<p>In our July 2008 comments, we recommended that the PEIS include an environmentally sensitive alternative that either extended existing incentives or created new incentives to promote local solar generation and energy efficiencies within the load centers where energy is needed most. Recent</p>	

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		<p>economic analyses show that developing specialized training programs and retrofitting existing urban infrastructure with energy efficiencies would be more beneficial to national economic recovery than the development of utility-scale renewable energy in remote areas. While we certainly recognize the need for some utility-scale development, a more comprehensive program under DOE’s purview should be considered.</p> <p>DOE’s response to this comment states: DOE supports a comprehensive program including many initiatives evaluating distributed generation (e.g., RSI study, SEGIS program), energy efficiency, and demand side management. These are identified in Chapter 2.</p> <p>The support of this comprehensive program should be articulated in Chapter 7 and included as an integral part of the six-state program. The potential for DOE’s authorities to reduce the level of impact on BLM lands as part of a more comprehensive/integrated national strategy should be thoroughly discussed in the final PEIS.</p>	
<b>Topic: Translocation of Species</b>			
<b>General</b>		<p>Throughout the DPEIS, desert tortoise translocation is considered the standard mitigation measure; this is not an appropriate characterization. Because of the potential magnitude and severity of impacts the Solar Energy Development Program is likely to have on the desert tortoise, avoidance of occupied habitats and areas important to population connectivity should be the primary approach. If avoidance is not feasible, projects should be sited in areas of degraded habitats and/or low desert tortoise densities. If translocation is imperative to minimize take, then it should be conducted in close coordination with the Service and other permitting agencies. Please revise the document accordingly in all applicable sections.</p>	
<b>9.2.12.2.1</b>	<b>9.2-156/40-42</b>	<p>The text regarding translocation is misleading. Translocation, when used as a conservation strategy in past efforts, has usually been conducted as a carefully controlled scientific experiment. In cases where it has not, we have limited information on what happened to those animals, so conclusions as to the success of those efforts are speculative. Translocation, as currently</p>	

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		<p>proposed for large-scale solar energy development, has not been used as a proven mitigation strategy to minimize the impacts associated with project development. To identify it as a mitigation strategy without appropriately characterizing it as an experimental procedure is not appropriate and counter to the Service, SAC, and DRECP views of desert tortoise translocation. Avoidance criteria and exclusion areas should be developed within the PEIS to prevent or greatly reduce translocation’s role as a mitigation option.</p>	
<p><b>10.1.1.3, Table 10.1.1.3-1 &amp; throughout document in tables w/ this recommendation</b></p>	<p><b>Page 10.1-13</b></p>	<p>The Service recommends that in all instances where avoiding impacts to sensitive species is not possible, alternative sites be considered before translocation or compensatory mitigation takes place. Neither translocation nor compensatory mitigation can be a substitute for natural habitat and may not be a suitable option for all species; therefore, this should be the last resort when considering mitigation options.</p>	
<p><b>Chapter 13, Table 13.1.3-1</b></p>	<p><b>13.1-10</b></p>	<p>The Service recommends that translocation of special status plants not be described as a viable mitigation measure unless there is documentation that translocation of the target species has been previously successfully accomplished.</p>	
<p><b>A.2.2.11.1</b></p>	<p><b>A-55 and Global</b></p>	<p>In previous comments, we submitted the following: “For clarity, please reconcile all of the exclusions described in Table 2.2-2 with those contained in Appendix A to ensure that they are at the forefront for Siting and Design considerations. Many proposed design features in Appendix A exclude areas from siting, but these criteria are not identified in Table 2.2-2 and vice versa. Two examples include, “Project facilities and activities shall not be located in or near occupied habitats of special status animal species” and “Tall structures shall be located to avoid known flight paths of birds and bats.”</p> <p>We also recommend that new policies be included that would amend affected land use plans to: (1) require ROW exclusions for protecting BLM lands used as mitigation for solar projects, including lands onto which plants or wildlife are translocated, any lands that are restored or managed more intensively to mitigate project impacts, any lands needed for habitat linkages and wildlife movement corridors, etc.; (2) accept compensation habitat with conservation easements or deed restrictions, again for the purpose of</p>	

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		<p>excluding land uses incompatible with the impact mitigation function for which they were acquired; and (3) require the designation of ROW exclusion areas on the unused portions of ROW application sites that are avoided to minimize impacts through reconfiguration of the project.”</p> <p>BLM’s response to these comments state: “For first paragraph, some specific exclusion areas cannot be identified until site specific investigation has been done (e.g., identification of occupied habitats through surveys).</p> <p>Regarding second paragraph, the following policy has been added:</p> <p>‘At the time a ROW application is submitted, the BLM will review the best available, landscape-scale information (including information developed through complete or ongoing Landscape Conservation Cooperatives (LCC) partnerships and Rapid Ecological Assessments (REA)) and will determine whether areas proposed for solar ROW uses and/or associated transmission facilities are inconsistent with other high priority conservation, restoration, and/or adaptation objectives.’</p> <p>The extent to which the proposal will result in impacts to mitigation lands identified in previously approved projects, including those lands onto which plants or wildlife are translocated and any lands that are restored or managed more intensively to mitigate project impacts.”</p> <p>We thank BLM for the above clarification. However, as submitted in previous comments and our general comments herein, we recommend that all private lands acquired for mitigation and incorporated into the BLM land base, lands that support translocated species, or lands where management actions have been implemented as mitigation, are subsequently protected from any future disturbance through the project-specific NEPA/LUP amendment.</p>	
<b>Topic: Water</b>			
5.10.2.1.2	5-76/17-	In addition to addressing potential water quality effects to aquatic systems	

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	<b>23</b>	and amphibians, this paragraph should be expanded to include how water quality impacts may affect arid, terrestrial systems.	
<b>5.10.5</b>  <b>Chapter 11</b>  <b>A.2.2.10</b> <b>A.2.2.11</b>	<b>5-49 and 5-126</b>	We agree that BLM and DOE should use hydrological studies to determine effects to resources and to appropriately limit the withdrawal of groundwater. However, no hydrological studies have been developed that are of a sufficiently refined nature to perform site-specific analyses to evaluate potential impacts. We recommend BLM and DOE explicitly stipulate that these studies be completed prior to approval of applications rather than the word ‘should.’	
<b>6.1.2, Table 6.1-2</b>	<b>6-7</b>	<p>In our October 2010 comments, we submitted the following: “Water resources: The conclusion that the volume of water required for mirror/panel washing and potable uses “would result in relatively minor impacts on water supplies” should be substantiated with data. Water resources, both surface and ground water, are extremely limited in the arid southwest and even minor withdrawals may greatly affect the hydrographic system but not be immediately evident.”</p> <p>BLM’s response to this comment stated: “Project specific analysis would be required for any groundwater withdrawal. A permit would not be granted unless minor impacts were confirmed.”</p> <p>Absent any data to substantiate this conclusion, we recommend that the language be revised to state that any potential impacts to water supplies will be analyzed appropriately under project-specific environmental review.</p>	
<b>Appendix A</b>	<b>A-57/33-38</b>	<p>The measure described in the Draft PEIS should provide protection to surface and groundwater that support <i>any</i> existing vegetation, not only habitats for special status species. Water table drawdown could have lasting, widespread impacts to native vegetation dependent on groundwater support.</p> <p>The Service recommends that the last sentence of this measure be modified as follows: “Applicants shall demonstrate, through hydrologic modeling, that the withdrawals required for their project are not going to affect groundwater discharges that support <i>existing vegetation</i>.”</p>	



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<b>Topic: Effects Analyses</b>			
<b>5.10.1.1, Table 5.10-1 and other tables in Ch 5 using this format and language</b>	<b>5-56</b>	The determinations in the “Ability to Mitigate Impacts” column are predicated on too many assumptions, especially at this scale. For instance, the statement that mitigation is “mostly beneficial” relative to restoration of topography, drainage patterns, or vegetation, or that topsoil removal can be “readily mitigated” through stockpiling and reuse is difficult to support or defend in most areas of the desert southwest (Abella 2010). These ecosystems are highly intolerant of land disturbance and can take decades or even centuries to recover even with intervention. Disturbed soils are highly susceptible to invasion by non-native species, which results in degraded habitat quality. We recommend that distinctions between regional climate variation and vegetation types be clarified in the table (as they are in the subsequent text) when making broad assumptions.	
<b>5.10.2.1.2</b>	<b>5-75/36-37</b>	The Service recommends that this paragraph be expanded to clarify that habitat fragmentation can affect population genetics of many different migratory and non-migratory wildlife species at different levels regardless of the magnitude of the loss of habitat. Native plant species are also greatly affected by fragmentation and the indirect effects that result from disturbance.	
<b>5.10.2.1.2</b>	<b>5-76/25-32</b>	We recommend this be updated to reference a study on surface dust impacts on gas exchanges in Mojave Desert shrubs that showed that plants encrusted by dust have reduced photosynthesis and decreased water-use efficiency, which may decrease primary production during seasons when photosynthesis occurs. (Sharifi et al. 1997)	
<b>5.10.2.1.2</b>	<b>5-83/8-11</b>	Because of the limited amount of data on impacts to birds and other wildlife from solar energy technologies, additional data are necessary to substantiate this conclusion. Available data suggest that mortality from utility-scale projects may be significant.	
<b>5.10.2.1.2</b>	<b>5-89/11-17</b>	We recommend that the PEIS note that the negative effects of herbicides are not limited to accidental spills or releases; continuous use of toxins in a localized environment may also result in these effects.	
<b>5.10.2.2.2</b>	<b>5-98/5-15</b>	This analysis regarding impacts to birds from power towers is highly speculative. Available data shows that there is mortality risk, as substantiated	

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		<p>by McCrary et al. 1986 at a 10-MW power tower site. As mentioned above, additional data are necessary to fully understand the potential impacts to bird populations in the southwest region.</p> <p>Lehman <i>et al.</i> (2007, 2010) indicated that eagle and other raptors still face non-mitigated electrocution hazards with power lines in the United States, and Stahlecker (1978) noted that newly constructed transmission lines served to concentrate wintering raptor species in an area earlier devoid of raptor groupings, increasing potential exposure to mortality hazards. Power towers that may be as tall as 600’ or more may attract raptors that prefer to perch on tall objects for roosting and hunting. Therefore, we recommend that Avian and Bat Protection Plans be required for each project, especially power tower projects.</p>	
<b>6.5, Table 6.5-1</b>	<b>6-54</b>	<p>As requested in our October 2010 comments, please include graphics depicting existing and proposed cumulative impacts across the study area and include the acreages (or miles of transmission/pipelines) associated with each type of use where possible. Many of these data are available from the BLM state and/or field offices.</p>	
<b>6.5.2 (esp. 6.5.2.9)</b>	<b>General Comment</b>	<p>In our October 2010 comments, we submitted the following: “Overall, the descriptions of the cumulative impacts to each of the respective resources are too vague to allow for any substantive analysis. If the expectation is to tier off of this document for subsequent environmental reviews, additional site-specific and regional data is necessary.</p> <p>Throughout section 6.5.2, the impacts associated with solar development are generally characterized as small relative to the total area expected to be developed; however, in the context of all other existing and future land uses in the six-state study area, especially in the California deserts, the contribution of impacts to each of the resources from solar development is likely to be significant. The document also addresses the impacts to each resource from each type of technology or project component exclusive from other resources or impacts; this is contrary to what will occur on the ground. For instance, the desert tortoise and its habitat will be subject to significant</p>	

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		<p>impacts from all aspects of solar energy development; however, some activities or components will have greater direct and indirect impacts than others both spatially and temporally (e.g., initial vegetation clearance will result in immediate and permanent loss of habitat, whereas the construction of transmission lines may have less direct impacts from loss of habitat but long-term indirect effects from raven and raptor predation).”</p> <p>BLM’s response to these comments state: “It is recognized that additional site-specific and regional data will be required for the cumulative impact analysis for individual projects – the purpose of the analysis Chapter 6 is to provide an assessment of the overall impact of solar development that corresponds to the RFDS level, in conjunction with other ongoing and foreseeable energy development, other types of development, and considering general trends in population growth, global warming, etc. The SEZ-specific cumulative impacts analyses are intended to provide a framework for project-specific analyses. Confirmation of applicable other projects to consider would occur as part of those analyses.”</p> <p>This response seems to contradict that which is stated on pg. 6-52/24-27; please clarify.</p>	
<p><b>Chapter 7 Analysis of DOE's Alternative</b></p>	<p><b>General Comment</b></p>	<p>The cumulative effects analysis should evaluate the reasonably foreseeable development of DOE-funded utility-scale solar projects along transmission corridors to a degree comparable to that of the BLM, and consistent with the Service’s general recommendations for cumulative effects analysis of impacts to BCC.</p>	
<p><b>8.1.1.3, Table 8.1.1.3-1</b></p>	<p><b>8.1-10, Resource Area Special Status Species</b></p>	<p>While the DPEIS states that less than 1 percent of potentially suitable habitat in the region occurs in the area of direct effects, if the special status species includes federally-listed species and the effects result in the regulatory threshold of adverse effects being reached, the effects would be considered significant under existing statutes regulating take of these species and would require formal consultation with the Service. The Service recommends the PEIS state effects to federally-listed species, as regulated under the ESA, regardless of scale.</p>	

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		<p>One percent may also equate to a couple thousand acres of suitable habitat. An area of “potentially suitable habitat” included in the development footprint may be the preferred area of a sensitive species, and therefore result in significant impacts to that species. It is also possible that not all species fall within the suitable habitat area.</p> <p>The only way to effectively evaluate impacts to species is through a site evaluation with a wildlife specialist. For this reason, the Service again emphasizes the need for Service coordination well in advance of construction. Detailed site-specific evaluations should be conducted by a wildlife specialist to determine the level of risk to each species, and to establish the appropriate conservation and monitoring measures needed.</p>	
<p><b>8.1.11.1.1, Table 8.1.11.1.1</b></p>	<p><b>8.1-86, Footnotes a, b, f</b></p>	<p>Classification error rates and standard deviations associated with landcover classifications within the Southwest Regional Gap Analysis Project used to determine Maximum Area of Potential Habitat Affected within and outside the SEZ should be reported in the Final PEIS as a footnote in each table. Without these values, it is difficult to determine the quality of analyses used to support DPEIS statements of “small overall impact.” If landcover classification error rates and standard deviations of protected species habitats are greater than the interval between the DPEIS’s small, moderate, or large categories of overall impact magnitude, then the DPEIS’s determinations of impacts would be questionable.</p> <p>Additionally, if the DPEIS approach “overestimates the amount of suitable habitat in the project area,” it could also overestimate the amount of suitable habitat in the areas outside the SEZ, resulting in low confidence that the PEIS determination is supported by the analyses provided.</p> <p>The Service recommends these comments address concerns with each of the above identified or related footnotes for all the “wildlife and aquatic biota” and “special status species” taxonomic grouping tables in all proposed SEZs.</p>	
<p><b>8.3.1.3, Table</b></p>	<p><b>Page 8.3-</b></p>	<p>The indirect impacts mentioned to “Wildlife: birds” in this table do not</p>	

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<p><b>8.3.1.3-1</b></p>	<p><b>9</b></p>	<p>mention habitat fragmentation, habitat loss and species displacement, which may be some of the greatest impacts of these projects. Likewise, impacts of concern to bald and golden eagles do not just include “take”, but also include the negative effects associated with habitat disturbance, fragmentation and loss. We recommend the table be revised to include these points.</p>	
<p><b>Chapter 9</b></p>	<p><b>General Comment</b></p>	<p>In our October 2010 comments, we submitted the following: Global comment: “It is inaccurate to state that the Service has determined desert tortoise to be present or absent based on the USGS habitat model (Nussear et al. 2009) – statements such as this should be revised to reflect that Nussear et al. is one tool used to evaluate the <u>probability</u> that desert tortoises may or may not occur in any given area. In our June 2009 comments, we included the following: ‘For the desert tortoise, we have provided some information on potential population densities based on line distance sampling (LDS) and available habitat within each proposed SESA based on the recently released desert tortoise habitat model (Nussear et al. 2009). The most important consideration when extrapolating these data to the specific Solar Energy Study Areas is that the LDS long-term monitoring transects are in some cases based on very few transects or non-random placement of transects, which can confound the results. In addition, we do not advise making determinations relative to potential habitat based solely on the U.S. Geological Survey’s (USGS) model absent on-the-ground verification of the outputs.’ Thus, site-specific surveys for projects anywhere within the range of the species should be performed to determine presence/absence and density estimates onsite.</p> <p>Global comment: It is inaccurate to characterize the desert tortoise as “relatively common” in any of the SEZs – generally there is a lack of SEZ-specific data to draw any conclusions about its abundance in these areas. We suggest you revise the document accordingly.”</p> <p>BLM’s response to these comments state: “The USGS model alone was not used for determining presence/absence of desert tortoises in the vicinity of any SEZs. GIS data of observed species occurrences (e.g. CNDDDB for California) and information provided by the USFWS in their scoping letter</p>	

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		<p>(Stout 2009) were the only information used to determine whether the species is known to occur on the SEZ. The USGS model indicates areas with greater habitat suitability for desert tortoise and was used to support the determination of whether the species occurs on the SEZ and if the SEZ represents suitable habitat for the species. The PEIS already identifies the need for further site-specific pre-disturbance surveys and consultation with the USFWS in areas where the desert tortoise may occur.”</p> <p>Thank you for the clarification, but we maintain that the language needs to emphasize the limitations of any model. We know that the USGS model had very little data for the Colorado Desert and that the CNDDDB is incomplete, especially as it relates to desert tortoise. Please revise to more clearly state that the USFWS “has assumed the species to be absent based on the USGS model; however, because of the limitations of data input into the model and uncertainties relative to global climate change where desert tortoise habitat does occur, species-specific surveys would be required.” Also, the estimates provided for the SEZs in our September 2009 comments make assumptions about the line-distance sampling data in the nearest critical habitat units; therefore, descriptions such as “relatively common” in any of the SEZs should be removed – there are no real data to support these determinations.</p>	
<p><b>Chapter 9</b></p>	<p><b>General Comment</b></p>	<p>In our October 2010 comments, we submitted the following: Global comment: “We are concerned about the methodology used to evaluate the direct impacts to species and their habitats and to determine the area within which to evaluate indirect effects (5-mile radius around SEZ). Additional indirect effects, such as non-native species invasion, increased predation on desert tortoises by ravens, etc., can occur far beyond the 5 miles established in this document.”</p> <p>BLM’s response to this comment states: “The area of indirect effect was identified as the area that was thought to reasonably bound any indirect effects from activities on the SEZ. Although this distance is thought to be a conservative estimate of potential indirect effect, the reviewer is correct that some impacts such as raven predation and nonnative species invasion could,</p>	

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		<p>without mitigation, project beyond that distance. However, as stated in the PEIS, the mandated design features are expected to reduce the impacts of indirect effects, including those from ravens and nonnative plants, outside of the SEZ to negligible levels.”</p> <p>This response does not consider the dispersed nature of these projects and the potential for overlap of effects from nearby projects. Also, the action area of a project may be greatly expanded by the need to translocate desert tortoises; therefore, analyses of both direct and indirect effects should be expanded appropriately.</p>	
<b>9.1.1.2, Table 9.1.1.3-1</b>	<b>9.1-6</b>	Also include the East Mesa Flat-tailed Horned Lizard (FTHL) Management Area, of which the East Mesa ACEC is a subset, as a specially designated area that may be affected by development in the proposed SEZ.	
<b>9.2.12.1</b>	<b>9.2-140/Table 9.2.12.1-1</b>	Loss or restriction of gene flow between Joshua Tree National Park and the Chemehuevi DWMA could have substantial impacts on recovery of the desert tortoise. The rating of overall impacts to the desert tortoise appears to be based primarily on the proportion of available habitat that the SEZ would impact. A more thorough look at impacts to desert tortoise is needed to adequately rank it. Effects on connectivity should be considered.	
<b>9.3.1.3</b>	<b>9.3-5/Table 9.3.1.3-1</b>	The analysis of impacts on specially designated areas does not address impacts to desert tortoise connectivity between the Ord-Rodman DWMA and the Superior-Cronese DWMA or the Mojave National Preserve. All of these areas are important to the recovery of the desert tortoise. The Service has developed and mapped important desert tortoise linkage areas that should be considered in analysis of this SEZ. Development of this SEZ would greatly affect connectivity between these essential areas. Loss of connectivity cannot be mitigated.	
<b>9.4.1.2</b>	<b>9.4-4/15-16 and Global</b>	The DPEIS currently states that the existing road within the SEZ should be adequate to support future construction and operations of solar facilities. Based on the environmental documents for all of the approved 2010 energy projects along the I-10 corridor, all projects anticipate construction of new roads.	



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		This information reinforces the need to integrate any and all available information for currently approved projects.	
<b>9.4.10.2.1</b>	<b>9.4-90/27-30 and Global</b>	<p>In our October 2010 comments, we submitted the following: “Determining the level of impact based on the proportion of certain vegetation types may not be appropriate, especially for those that are uncommon or limited in nature. We recommend that the following vegetation types receive more consideration when siting and designing projects: wetlands, microphyll (dry desert wash) woodlands, and dune systems. These habitat types should first be avoided if possible and any impacts should be minimized and mitigated. Mitigation and compensation for these vegetation types is very difficult because they are so uncommon and private lands with these features may not be available for acquisition. Further, the PEIS should recognize that mitigation of impacts to desert sand transport and dune systems may not be feasible for these and other reasons.”</p> <p>BLM’s response to this comment states: “Avoidance, minimization, and mitigation are included in the SEZ mitigation measures.”</p> <p>Thank you for including these measures; however, as discussed above, the Final PEIS should include an in-depth discussion about the uniqueness of these vegetation/habitat types within this SEZ and regionally and the feasibility/efficacy of any proposed mitigation measures.</p>	
<b>9.4.12.1.1</b>	<b>9.4-141/28-42</b>	Revise to state that desert tortoises and/or their sign have been documented on all of the fast-track projects along the I-10 corridor. These data should be incorporated into the Final PEIS. (AECOM 2010a, b, c, d, e; BLM 2010a, b, c, d, e, f, g, h; BLM and CEC 2009; BLM and CEC 2010a, b, c, d, e; CEC 2010a, b, c, d, e, f, g, h; C2HMHill 2008; C2HMHill 2009; C2HMHill 2010; Kenney 2010a, b) Please do not rely upon the California Natural Diversity Database data as there is a dearth of data due to a lack of inventory surveys for this species in the Colorado Desert.	
<b>Chapters 10 and 13</b>	<b>General Comment</b>	Assumptions used in the PEIS analysis could lead to incorrect assessments of impacts on some fish and wildlife resources. The method of analysis is based on the relative abundance of available habitat within a 50-mile radius (the	

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		<p>“SEZ Region”). Because impacts are expressed as a proportion of this large area that is impacted, however, the calculation may underestimate actual impact of the project on rare or less mobile species, due to potential habitat fragmentation and the loss of gene flow.</p> <p>The Service recommends that the PEIS modify the methodology, either qualitatively or quantitatively, for rare and less mobile species. We also recommend that language be added to the PEIS to acknowledge limitations of the analysis concerning variable habitat quality within the SEZ Region and issues regarding wildlife displacement.</p>	
<b>Topic: Transmission</b>			
<b>1.3.6</b>	<b>1-14/2-9</b>	Several new transmission projects will be needed to connect new power plants on and off BLM lands to the electrical power grid. Separating the analysis of the transmission necessary to support utility-scale renewable energy projects effectively piece-meals the analysis of impacts required under NEPA. Transmission projects are connected actions. We recommend that a comprehensive evaluation of existing (i.e., available capacity) and designated transmission infrastructure and corridors be analyzed, together with an associated analysis of storage requirements to optimize energy delivery to load centers, and all existing and future infrastructure be “bundled” within the fewest number of corridors as possible.	
<b>5.1</b>	<b>5-1/41-45</b>	All transmission infrastructure should, at a minimum, comply with the Avian Power Line Interaction Committee guidelines. In some cases, where lines are crossing important bird use areas or migration corridors, transmission projects should develop Avian Protection Plans.	
<b>5.10.5.1</b>	<b>5-128/30</b>	The Service recommends the following additional bullet be inserted: “Increase, when indicated, the visibility of overhead electrical lines by using line marking devices (flapper devices, Fireflies, spiral vibration dampers, or bird flight diverters).” For guidance on markers, see Avian Power Line Interaction Committee 1994. Mitigating Bird Collisions with Power Lines: The State of the Art in 1994.	
<b>5.2.1.2</b>	<b>5-6/5 - 13</b>	The direct impacts to wildlife for transmission lines also include avian collisions and electrocutions. Indirect effects to wildlife should be included	

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		in this section. These may include displacement, habitat fragmentation, loss of habitat and behavioral effects. Other effects may include flight diversion or injury of bird vision due to panel glare. These effects are, as yet, not well researched but still warrant mention.	
<b>9.1.1.2</b>	<b>9.1-3/38-46 and Global</b>	The Service recommends that transmission planning and environmental review should be taking place concurrently so that energy projects are not constructed without the necessary transmission infrastructure.	
<b>9.4.1.2</b>	<b>9.4-3/34-45 and Global</b>	The Service recommends that disclosure of impacts should include associated transmission lines. New transmission will be required for all of the currently proposed solar projects along the I-10 corridor and will likely be required for any additional projects proposed within the SEZ. These facilities result in considerable ground disturbance (direct impacts to habitat) from access roads, footings for towers, and laydown and staging areas. They result in direct impacts (injury and/or mortality) to raptors and other migratory birds through collisions with lines and electrocution. They also result in indirect impacts by providing nesting and roosting substrates for desert tortoise avian predators and corridors for spread of non-native plant species.	
<b>Chapter 10</b>	<b>General Comment</b>	The DPEIS maps identify large transmission corridors produced by Section 368 of the Energy Policy Act of 2005. However, impacts of the transmission corridors in the San Luis Valley on wildlife resources were not covered by the Section 368 (Energy Policy Act of 2005) analysis. The USFWS recommends that potential impacts associated with transmission for solar energy development be addressed, or that the PEIS explain that such potential impacts would be covered by subsequent tiered NEPA analyses.	
<b>Chapter 10</b>	<b>General Comment</b>	The DPEIS maps for the San Luis Valley, Colorado, only show federal lands. They do not show conservation lands held by the State, NGOs (e.g., The Nature Conservancy estate), or private landowners easements that are committed to perpetual conservation.  The DPEIS should explain whether there are ways to transmit power without disturbing the large conservation estate in the Valley.	
<b>Topic: Migratory Birds and Birds of Conservation Concern (Including Eagles)</b>			
<b>General</b>		In accordance with E.O. 13186 (Responsibilities of Federal Agencies to	

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<p><b>Comment</b></p>	<p>Protect Migratory Birds), under which both BLM and DOE have signed Memorandums of Understandings (MOUs) with the Service, it is important the PEIS recognize the MBTA protects nearly all bird species that are native to the United States and its Territories (1007 species total), and the unintentional (“incidental”) take of those species constitutes a violation of the MBTA. The Service recommends the PEIS address conservation actions taken to minimize or eliminate take of those protected bird species. A list of species protected by the MBTA can be found in Title 50, Code of Federal Regulations, Part 10.13. For further information on Migratory Bird Permits, please refer to Service’s website at <a href="http://www.fws.gov/permits/ltr/ltr.html">http://www.fws.gov/permits/ltr/ltr.html</a>.</p>	
<p><b>General Comment</b></p>	<p>The Fish and Wildlife Conservation Act mandates the Service “identify species, subspecies, and populations of all migratory nongame birds that, without additional conservation actions, are likely to become candidates for listing under the Endangered Species Act (ESA) of 1973.” The current version of this list is published as Birds of Conservation Concern 2008, available at <a href="http://www.fws.gov/migratorybirds">http://www.fws.gov/migratorybirds</a>. The DPEIS does not address Birds of Conservation Concern (BCC), although there is some overlap with the BLM- and state-designated sensitive species. In accordance with the MOUs under E.O. 13186, the Service recommends the PEIS consider birds on the BCC, including bald and golden eagles, as Special Status Species and evaluate them accordingly, and identify monitoring and management actions taken specifically to minimize or eliminate impacts to BCC occurring at each of the proposed SEZs. We recommend DOE/BLM work with the Service in incorporating the concerns we have submitted in these comments as they pertain to migratory birds.</p> <p>Impacts to BCC species and their habitat, as well as mitigation for impacts to habitat, should be evaluated in reference to: population trends for each species in the Bird Conservation Region (BCR) or as appropriate, in which the project is located; and population objectives set forth in conservation bird plans such as the North American Landbird Conservation Plan. The relevant BCRs are the Sonoran and Mojave Deserts (BCR 33) for the Brenda, Bullard Wash, and Gillespie, Arizona sites, and BCR 35 (Chihuahuan Desert) for the</p>	

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		<p>Afton, Mason Draw, and Red Sands sites in New Mexico.</p> <p>Where no habitat conservation strategies or comparable planning documents exist that provide specific, required conservation benefits for BCC, the Service recommends the BLM develop them in coordination with the Service and State and Tribal wildlife agencies.</p>	
<b>General comment</b>		<p>In the Final Rule establishing permits for take of eagles and eagle nests under 50 CFR 22.26 and 50 CFR 22.27, the Service defined “compatible with the preservation of the bald eagle and the golden eagle,” the standard by which the Service must determine whether take can be permitted, to mean “consistent with the goal of stable or increasing breeding populations.” The Service appreciates the recommendation that projects demonstrate compliance with regulatory requirements of the Bald and Golden Eagle Protection Act (Eagle Act). However, the Eagle Act does not specifically protect the habitat supporting bald eagles and golden eagles or their prey. Incremental, cumulative losses and fragmentation of eagle habitat can lead to declining breeding populations without individually violating the Eagle Act. Declining breeding populations would not be compatible with the preservation of the bald eagle and golden eagle, would further limit the availability of permits for take of golden eagles, and increase mitigation levels required to offset the take that occurs. The Service recommends that the PEIS evaluate effects to habitat and prey that would result in negative effects to breeding populations of eagles. In addition, it and the Record of Decision (ROD) (or RODs, if the BLM and DOE have separate decisions) should require that project-specific NEPA conduct more in-depth analyses and fully mitigate negative impacts to habitat.</p>	
<b>General comment</b>		<p>50 CFR 22.3 defines an <i>important eagle-use area</i> as an eagle nest, foraging area, or communal roost site that eagles rely on for breeding, sheltering, or feeding, and the landscape features surrounding such nest, foraging area, or roost site that are essential for the continued viability of the site for breeding, feeding, or sheltering eagles. The BLM and DOE should coordinate closely with the Service and State and Tribal wildlife agencies to identify and map important eagle use areas inside of and within 10 miles of BLM Solar Energy</p>	

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		Zones (SEZs) and transmission corridors. Data should be provided to the Service and State and Tribal wildlife agencies. Proactive gathering of this information will minimize the burden of data gathering for individual project proponents and streamline the project review process.	
<b>General comment</b>		<p>The cumulative impacts analyses in the PEIS do not specifically address BCC. The PEIS and project-specific NEPA should address impacts to BCC, from the SEZs <i>in addition to</i> reasonably foreseeable impacts from other resource categories, e.g. urban development, other energy development (including wind energy), grazing, recreation, climate change, and invasive weeds.</p> <p>The Service recommends use of available GIS data layers to predict areas where multiple uses may lead to additive or synergistic effects to birds and their habitat, and provide requirements for mitigation and monitoring.</p> <p>The DPEIS notes that other uses, e.g., grazing allotments or recreation, will be displaced by development of the BLM SEZs and DOE-funded development along the transmission corridors. The cumulative effects analysis in the PEIS and project-specific NEPA should analyze and mitigate the negative effects to BCC from reduced habitat.</p>	
<b>General comment</b>		Even though the DPEIS does not evaluate site-specific conditions in detail, it should establish conservation standards to be met by the project-specific NEPA analyses.	
<b>Chapter 4</b>	<b>4-85/41-46</b>	This paragraph’s message, which is repeated throughout the DPEIS, should be clarified in all instances regarding the Service’s priorities for permitting take of eagles. While in restricted instances the Service may permit removal of nests that interfere with resource development, the Final Environmental Assessment Proposal to Permit Take as Provided Under the Eagle Act emphasizes that a limited number of take permits would be issued due to low take thresholds. Specifically, the regulation set forth in 50 CFR § 22.26 provides for issuance of permits to take bald and golden eagles or their nests where the taking is associated with but not the purpose of the activity and cannot practicably be avoided. Most take authorized under this section will	

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		be in the form of disturbance. Priorities will be given to Native American religious use, activities necessary to ensure public health and safety, renewal of programmatic take permits, and resource development recovery operations.	
<b>Chapter 5</b>	<b>5-5 – 5-79</b>	<p>Although the PEIS quantifies each proposed SEZ’s qualitative risk to migratory birds and eagles from loss of habitat, the cumulative risks are not assessed. Project by project minimization, avoidance and mitigation measures may not be sufficient to offset the potential effects to some migratory birds and eagles.</p> <p>Cumulatively, the proposed renewable energy projects on and adjacent to BLM lands have the potential to cause significant and long-term impacts on eagle populations, particularly within the Mojave Desert. In Southern California, golden eagles generally avoid heavily forested mountains, the coast, and urban areas (Ferguson-Lees and Christie 2001, Garrett and Dunn 1981). Golden eagle population declines in San Diego County have been attributed to habitat loss due to urbanization (Kochert and Steenhof 2002). Due to the limited availability of prey and water in southern California’s xeric habitats, golden eagle territories were found to average 93 km<sup>2</sup> (36 mi<sup>2</sup>) (Dixon 1937).</p>	
<b>5.1</b>	<b>5-3/ Table 5.1-1</b>	<p>Loss of foraging and nesting habitats may adversely affect many bird species, resulting in significant direct and indirect effects. Potential impacts to golden eagles include molestation or disturbance, and loss of foraging habitat.</p> <p>The Service recommends that BLM require measures to monitor and recover entrapped birds or other wildlife in evaporation ponds. BLM should require an adaptive management approach which would include monitoring. If the monitoring indicates bird mortality is occurring, the Service should be contacted to discuss alternative methods for preventing bird mortalities.</p> <p>Raven control measures should require operational monitoring, removal of raven nests from project structures besides transmission lines (pg 5-144, line 14), and adaptive management control measures. We also recommend that</p>	



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		the BLM support regional raven control efforts designed to address cumulative effects of siting solar facilities in areas with little current human presence. These cumulative impacts are not addressed in the site-specific plans.	
<b>8.1.11.2.1, Table 8.1.11.2-1</b>	<b>8.1-90 – 8.1-103</b>	The bird tables often include the phrase “some measure of mitigation provided by the requirements of the MBTA.” This reference is unclear, as there are no mitigation provisions contained within the MBTA. The MBTA is a strict liability statute. The Service recommends the final PEIS clarify the above-referenced statement in the document, and define approaches for achieving compliance under the MBTA.	
<b>9.1.11.2</b>	<b>9.1-102 and Global</b>	<p>The Service recommends that BCC should be included here with design features/mitigation measures.</p> <p>In previous comments, we submitted the following: “Pre-project surveys for golden eagles or other raptors are recommended. Survey protocols and most recent guidance for golden eagles are available from the Service.</p> <p>Global comment: We recommend development of Avian and Bat Protection Plans (ABPPs) for individual projects within the SEZs that have the potential to affect birds and bats. These ABPPs would identify the level of operational monitoring required for projects, thresholds for adaptive management, and adaptive management measures. ABPPs would be very useful for solar technologies such as power towers, where impacts to birds are not well understood.”</p> <p>BLM’s response to these comments state: “One of the programmatic design features (Appendix A, Section A.2.2.11.2) includes the development of an Ecological Resources Mitigation and Monitoring Plan to avoid, minimize, or mitigate adverse impacts to ecological resources. Components of this plan would be developed with input from federal and state agencies.”</p> <p>Golden eagles are protected under the Eagle Act and may require special management. Recent guidance recommends that specific plans are developed</p>	

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		to direct any activities that may affect this species; therefore, we request that any documents required under the Final PEIS for golden eagles and birds protected under the MBTA are consistent in title and content with Service guidance. Also, in general there is a lack of data for golden eagles in the desert southwest; conclusions relative to its use of the area around any of the SEZs should be substantiated with survey data.	
<b>9.4.12</b>		Golden eagle needs to be addressed per previous comments.	
<b>9.4.12.1.1</b>	<b>9.4-164/ Table 9.4.12.1-1</b>	Include discussion of golden eagles. They have been documented during surveys for the I-10 projects. In addition, there appears to be a typo: “Birds” should be “Mammals”	
<b>A.2.2.11.2</b>	<b>A-63/31- 41 and A- 64/1-4</b>	The bullet should point the reader/applicant to the most current Service guidance; we are working to update all of our guidance documents relative to golden eagles and other migratory birds.  Also, we recommend that ABPPs be developed per Service guidance.	
<b>Topic: Endangered Species (excluding desert tortoise, discussed elsewhere)</b>			
<b>6.6.3</b>	<b>6-103/21- 45 – 6- 104/1-9</b>	It is unclear whether this section discusses Irreversible and Irrecoverable Resources as it relates to the Endangered Species Act. Please make the clarification here to avoid confusion.	
<b>8.1.12.1, Table 8.1.12.1-1</b>	<b>8.1-129, Footnote g</b>	For federally-listed species, any effect resulting in take is regulated by the ESA, where consultation under section 7 is triggered by a “may effect” call by the action agency and formal consultation is triggered by an “adverse effects” determination by the action agency. The defined categories of overall impact magnitude seem arbitrary and not related to achieving compliance with relevant regulatory statutes, nor listed species recovery. The Service recommends these categories be defined in terms relevant to section 7 of the ESA and its implementing regulations. Also, please note section 7(a)(1) responsibilities under the ESA.	
<b>Chapter 10</b>	<b>General Comment</b>	<u>Identification of Federally Listed Species in Colorado:</u> The Service recommends that the BLM rely on official species lists, maintained for this purpose, to ascertain this type of information. All four of the SEZs in Colorado would all be located on land administered by the San Luis Valley Public Lands Center, consisting of Rio Grande National Forest	

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		and San Luis Valley B.L.M. That office maintains a list of federally listed species (including proposed and candidate species) that the Service regularly reviews and concurs with. The Service maintains an official list of federally threatened and endangered species for counties in the San Luis Valley at: <a href="http://www.fws.gov/endangered">http://www.fws.gov/endangered</a>	
<b>Chapter 10</b>	<b>General Comment</b>	Several federally-listed and candidate species that have the potential to occur in one or more of the four SEZs include: Mexican spotted owl ( <i>Strix occidentalis lucida</i> ), yellow-billed cuckoo ( <i>Coccyzus americanus</i> ), and New Mexico meadow jumping mouse ( <i>Zapus hudsonius luteus</i> ). The Service recommends that the potential impacts of the action alternatives on these species be addressed in the PEIS.	
<b>Chapter 13</b>	<b>General Comment</b>	<u>Threatened and Endangered Plant Habitat in Utah:</u> In Utah, lands in Wayne County available for development under the Solar Energy Development Alternative may contain the endangered Wright fishhook cactus ( <i>Sclerocactus wrightiae</i> ), the endangered San Rafael Cactus ( <i>Pediocactus despainii</i> ) and the threatened Winkler cactus ( <i>Pediocactus winkleri</i> ).  The Service recommends that any areas in Utah containing federally-listed plants be designated No Surface Occupancy (NSO). If the BLM Richfield Field Office’s Resource Management Plan (RMP) does not currently designate these habitats NSO, we recommend such a change be incorporated in the RMP Amendment process.	
<b>Topic: Other Comments</b>			
<b>General Comment</b>		The Service recommends that in instances where “avoid, minimize and mitigate” is used, it be clarified that mitigation should be commensurate with the remaining effects after implementing appropriate avoidance and minimization techniques. Also, please clarify that the term “mitigation,” as used in the PEIS, is typically referred to as “compensation” in other regulatory processes (Clean Water Act, e.g.). Please keep in mind mitigation for take is not allowable in all regulatory statutes, such as the Migratory Bird Treaty Act (MBTA).	

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<b>General comment</b>		The Service recommends that the BLM and DOE adopt the document <i>BLM Technical Note 436: Recommendations for Improved Raptor Nest Monitoring in Association with Oil and Gas Development Activities</i> for all permitted activities, including renewable energy development.	
<b>General comment</b>		The Service recommends that the BLM and DOE reference the DOI Technical Reference 1730-2, 2001, <i>Biological Soil Crusts: Ecology and Management</i> in Sections 4.7.3.2 and 5.7.4.1.1. The discussion in Chapter 5 should include measures to prevent burial of soil crusts by wind-borne soil deposition from adjacent disturbed sites. The PEIS and ROD should require that each site-specific plan (including NEPA) should include monitoring pre- and post-construction consistent with the monitoring outlined in the Technical Reference.	
<b>General</b>		In previous comment we have expressed concerns about the potential conflicts between the lands identified for development in California under the DPEIS and the more refined concurrent planning process underway that is expected to identify solar development areas along with a ecosystem-level conservation/reserve design that will overlap with a portion of the Solar PEIS in southern California (Desert Renewable Energy Conservation Plan (DRECP)). We are concerned that the PEIS planning process may, in the short term, possibly preclude certain conservation options in the DRECP planning area. The BLM has acknowledged in the DPEIS that the Final DRECP may necessitate additional amendments to land use plans (LUPs) in California. The Service recommends that BLM ensures the Final PEIS is compatible with the Preliminary Draft DRECP.	
<b>1.3.1</b>	<b>1-8/5</b>	The objective should be revised to read, “ <i>Mitigating, as defined in 40 CFR 1508.20, potential negative environmental, social, and economic impacts.</i> ”	
<b>2.1</b>	<b>2-2/16-18</b>	Various requirements, recommendations, and guidance is provided in the DPEIS, such as program and administrative policies, guidelines, mitigation measures, design features, an adaptive management plan, and Solar Energy Zone (SEZ)-specific design features. Very clear definitions of each should be given; how they relate to one another; and whether or not they will be required or recommended should be articulated.	

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<p><b>2.2.2.3</b></p>	<p><b>2-14/22-23</b></p>	<p>The sentence beginning “Unlike the solar energy development...” should be revised to reflect that ROW applications outside of the proposed SEZs have been approved or are currently in the permitting/NEPA/California Environmental Quality Act approval process. This situation greatly changes the landscape and existing environment.</p>	
<p><b>5.10.2.1.2</b></p>	<p><b>5-74/24</b></p>	<p>Replace “forest interior animals” with “species.”</p>	
<p><b>5.10.5.3</b> <b>A.2.2.11.3</b></p>	<p><b>5-137/18</b></p>	<p>Allowing preliminary site characterization (meteorological towers) in occupied habitats for sensitive species appears to conflict with programmatic design features that exclude final project siting in these areas. These preliminary site characterization activities should not be authorized if the proposed project will not be allowed to be sited on this location.</p>	
<p><b>5.10.5.5</b></p>	<p><b>5-140/9-13</b></p>	<p>The Service recommends modifying the existing language to include: “Minimize lighting at facilities. Require all security lighting by motion- or heat-activated, not left “on” overnight, and down-shield all security and related infrastructure lights.”</p>	
<p><b>6.6.1; 7.4.1; 7.4.4</b></p>	<p><b>6-102/21-25; 7-5/21-24; 7-7/12-23</b></p>	<p>The DPEIS states there are likely to be unavoidable adverse impacts, including: long-term loss of soil, vegetation, habitat for wildlife (including sensitive species) and, potentially irreversible impacts to biological soil crusts; and long-term impacts on some species, both at the population level and on individual organisms.</p> <p>We recommend that a programmatic approach to compensatory mitigation be implemented to address expected adverse effects. Efforts to offset anticipated effects should be initiated before effects occur. This could be achieved through an up-front mitigation bond or similar mechanism, due early in the planning stage of development, to fund activities to offset the anticipated effects, per relevant regulatory statutes.</p> <p>Conceptually, this approach would help to ensure anticipated effects are addressed in a way to minimize the duration of negative effects and the time-lag of restoration actions. Landscape Conservation Cooperatives, their conservation products (e.g., Decision Support Systems, maps, models), and</p>	

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		their network of partnerships could be used to match and leverage available funds and implement existing species conservation and/or recovery plans.	
<b>Chapter 7 Analysis of DOE's Alternative</b>	<b>General Comment</b>	Chapter 7 should stipulate that DOE will require conservation standards to be met by the project-specific NEPA. DOE should coordinate closely with the Service and State and Tribal wildlife agencies to develop mitigation and monitoring standards for DOE-funded projects.	
<b>9.1.1.2, Table 9.1.1.2-1</b>	<b>9.1-4</b>	Fourth column: “1115” should be “115.”	
<b>9.1.10.2.1</b>	<b>9.1-80/2<sup>nd</sup> para and 9.1- 104/45-46</b>	In previous comments, we strongly recommended impacts to wetlands that have been enhanced to offset impacts from the All American Canal Lining Project be avoided; these wetlands are considered a mitigation area to support nesting Yuma Clapper Rail.  BLM’s response to this comment states: “Avoidance is included as a mitigation measure.”  Based on this comment, the Service recommends BLM add “and shall be avoided” at the end of the last sentence in this paragraph.	
<b>9.3.12.1.1</b>	<b>9.3- 137/Table 9.3.12.1-1</b>	Arroyo chub is an introduced species on the Mojave River and is not native. The Service recommends that it may not be appropriate to consider it as a sensitive species in the Mojave Desert.	
<b>9.4.3.1</b>	<b>9.4-27/6- 13</b>	The Wildlife Habitat Management Areas (WHMAs) designated under BLM’s Northern and Eastern Colorado Desert (NECO) plan should be identified here and depicted on Figure 9.4.3.1-1.	
<b>Chapter 10</b>	<b>General Comment</b>	The DPEIS mentions lands that are either ACECs or critical habitat for ESA species were not considered in this document. Because it would be unwise to impact these areas, it would be helpful to explain that impacts to such areas would be included later in project-specific NEPA analyses.	
<b>11.6.11.2, Table 11.6.11.2-1</b>	<b>Page 11.6-98, Footnote g</b>	The Service recommends that this statement be made throughout the PEIS in reference to evaluation and mitigation determinations for each proposed site. Also, final mitigation should not be the only measure determined in consultation with appropriate wildlife agencies. Preliminary site evaluations to determine species presence and risk along with appropriate conservation	

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		and monitoring measures should also be established in coordination with the appropriate wildlife agencies. This should occur regardless of whether or not it is believed sensitive species will be impacted by the proposed development.	
<b>A.2.2.2</b>	<b>A-37/30-33</b>	Conflicts with some areas may be evident well before the environmental review process is initiated. Early coordination and identification of fatal flaws through the pre-application process should allow the BLM to screen applications prior to initiation of NEPA.	

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### U.S. Fish and Wildlife Service Solar PEIS Desert Tortoise Conservation Criteria April 2011

We propose the following conservation-oriented criteria that build upon the policies and mitigation requirements identified in the DPEIS be integrated into the action alternatives to ensure that utility-scale solar energy development on BLM-administered lands does not compromise conservation and recovery of the Mojave population of the desert tortoise. In addition, the criteria contained herein would maintain consistency with the conservation strategy in the Desert Renewable Energy Conservation Plan (DRECP) currently under development in California. These criteria also are compatible with the strategy put forth in the current (USFWS 1994) and draft revised (USFWS 2008) recovery plans for the desert tortoise.

Desert tortoise populations and habitat throughout the Mojave and Colorado deserts have been recently evaluated in various ways. Population sizes and densities within desert tortoise conservation areas (TCAs) have been estimated (USFWS 2009, 2010a, b), and methods for estimating desert tortoise population sizes on largely unsurveyed, smaller scales outside TCA landscapes have been developed (USFWS 2010c). A model of the statistical probability of tortoise occupancy has been developed to map potential areas of desert tortoise habitat across its range (Nussear et al. 2009). Patterns of historical gene flow across the landscape have been documented (Hagerty et al. 2010). Because solar energy development projects have the potential to cover, remove, and fragment ecosystem function and connectivity across hundreds of thousands of acres, it is essential that we implement development and conservation planning such that discrete, dispersed projects and associated transmission infrastructure do not preclude localized desert tortoise recovery. More importantly, it is imperative that the cumulative effects from the renewable energy development program do not compromise recovery across the range of the species.

Habitat conservation is a key component of desert tortoise recovery. Critical habitat has been formally designated, and management has been initiated to recover desert tortoises on these lands. In order to maintain viable populations and achieve landscape-level conservation of the desert tortoise, genetic and ecological information was used to refine the recovery units, and specific TCAs have been designated within each recovery unit through various land management agency processes. However, in addition to these designations, the significant role of desert tortoise populations on adjacent lands must also be recognized, and these lands should be managed accordingly (USFWS 2008).

Under the criteria and recommendations described below, the desert tortoise may serve as an umbrella species within the proposed linkages and high-density habitats for certain other desert species as well. In the assessment of resources needed for long-term survival and recovery, areas with substantial potential for supporting desert tortoises should be preserved. These areas not only support desert tortoise populations, but also provide long-term ecological and genetic continuity across the range of the species and other sensitive resources. Therefore, to ensure desert tortoise conservation and recovery are not precluded throughout a large portion of its range due to utility-scale solar energy development, these criteria identify areas outside of TCAs that are either known or expected to support important desert tortoise populations and, if lost, are

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expected to impede or prevent the ability to recover the desert tortoise and will degrade ecosystem function; these areas should be excluded from siting of large solar energy projects.

### Lands available for development or proposed for exclusion:

Under the DPEIS no action alternative, areas protected from development include lands within the National Landscape Conservation System (NLCS): National Monuments, National Conservation Areas (and similar designations), Wilderness, Wilderness Study Areas (including Instant Study Areas), and Wild and Scenic Rivers.

Under the DPEIS action alternatives, the text and Table 2.2-2 describe additional areas that would be excluded from solar development.

Because of the potential magnitude and extent of potential impacts to desert tortoises and their habitats, we propose the following criteria and actions be integrated into Table 2.2-2 and Appendix A, as appropriate, to expand the exclusion areas and measures identified in the BLM's action alternatives. Some of the measures and concepts described have not or cannot be mapped at this time as the data are currently unavailable; however, as these data are obtained, the figures can be updated to reflect the best available information.

### ***Establishment of crucial desert tortoise linkages to conserve genetic connectivity***

Recommendation 1: Modify the action alternatives to exclude crucial desert tortoise linkages (Attachment B-2).

Recommendation 2: Modify the action alternatives to exclude areas within Wildlife Habitat Management Areas (WHMAs) important for desert tortoise connectivity under the BLM's Northern and Eastern Colorado Desert Coordinated Management Plan (NECO) as important for desert tortoise connectivity (Attachment B-2).

Given uncertainties related to the effects of climate change on desert tortoise populations and distribution, we consider TCAs to be the minimum or initial baseline within which to focus recovery efforts (USFWS 2008). For example, the velocity of projected temperature change within desert ecosystems is approximately 0.7km/year (Loarie et al. 2009). At this rate, every critical habitat unit for the desert tortoise will be under a new temperature regime within 100 years. In addition, activities occurring on lands beyond the boundaries of existing TCAs can affect tortoise populations, important linkages between TCAs, and the effectiveness of conservation actions occurring within TCA boundaries (USFWS 2008). Therefore, to build upon the conservation framework captured through the protection of the lands identified in the DPEIS, we have identified additional BLM-administered lands that should be excluded from solar development under the desert tortoise conservation criteria (Attachment B-2). Proposed exclusion areas were established using data from the U.S. Geological Survey desert tortoise habitat model (Nussear et al. 2009), desert tortoise landscape genetics analysis (Hagerty et al. 2010), The Nature Conservancy's Mojave Desert Ecoregional Assessment (Randall et al. 2010), lands designated as WHMAs that are important for desert tortoise connectivity under NECO, and

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additional modeling conducted by the USFWS. The intersection of these data sets establishes our proposed minimum linkage design for the Mojave population of the desert tortoise.

The proposed exclusion areas establish crucial linkages between TCAs that should be protected such that significant impacts to the conservation and recovery of the desert tortoise are avoided. Areas outside TCAs that serve as habitat linkages have both long- and short-term value. Desert tortoise habitats are characterized by basin and range topography, which constrains wildlife movement and available corridors. In essence, desert tortoises are more connected to other tortoises within the same valley than to desert tortoises that are closer in distance but separated by intervening mountains (Murphy et al. 2007, Hagerty and Tracy 2010). The linkages proposed for exclusion contain areas of high habitat probability and they preserve pathways of historical gene flow between TCAs. Such linkages are important in maintaining genetic and population resiliency in the face of projected climate change (Hansen et al. 2009, Mawdsley et al. 2009, West et al. 2009, Krosby et al. 2010). In addition, this linkage design further promotes landscape permeability for other species' movement and ecosystem functions (Mawdsley et al. 2009).

Through this linkage design, we propose to exclude approximately 1.2 million acres from the proposed development alternatives (Attachment B-2); this represents 5 percent of the lands available under the preferred action alternative. We consider the proposed exclusion areas to be the minimum linkages necessary to ensure that the lands identified by the BLM for exclusion from solar development continue to be habitable by desert tortoise populations over time. Over 20 million acres of BLM-managed land would still be available for solar development under the preferred alternative (this is not, however, intended as an endorsement of the preferred alternative). With each successive large-scale project in a given valley, the cumulative change in habitat function (i.e., as assessed using existing BLM standards and guidelines for rangelands) should be evaluated to ensure that desert tortoise population persistence on remaining lands in the valley has not been irreversibly compromised by habitat fragmentation or degradation.

### ***Other Considerations***

The recommendations above recognize that desert tortoise recovery is focused first on maintaining core habitat areas within TCAs, while ensuring that ecosystem and long-term population processes within the intervening habitat matrix are preserved. However, an important climate-change adaption strategy is replicating conservation units to further insure against the unpredictable nature of climate change and stochastic events (Mawdsley et al. 2009, West et al. 2009). Protection of relatively high-density populations outside the conservation network would provide "assurance colonies" or "refugium populations" of desert tortoises in the event that climate change, spread of disease, or other unforeseen impacts result in dramatic population declines within the TCAs. Contiguous populations and habitat are important for long-term recovery, as described above, but disjunct populations are also valuable components of the conservation network as safeguards against disease epidemics (similar to a recommendation to isolate newly infected populations through barrier fencing (Berry and Jones 2004)). We have summarized the estimates of tortoise densities in TCAs of each recovery unit (USFWS 2009, 2010a, b) below. These densities serve as our benchmarks for assessing recovery range-wide. Disjunct areas that support densities within a standard deviation of the average estimate across each recovery unit's TCAs represent populations functioning ecologically at a level similar to



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those within TCAs. These areas, and the populations they support, could also be important for recovery of the species throughout its range. For this reason, to the extent feasible, BLM should prioritize the siting of utility-scale solar projects in areas with relatively low population densities.

Estimated Density of Desert Tortoise Density in Recovery Units.

Recovery Unit*	Tortoises/ km <sup>2</sup>
Western Mojave	3.9
Northern Colorado Desert	6.0
Eastern Colorado Desert	5.3
Northeastern Mojave	2.3
Eastern Mojave	5.2

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\* Recovery units from the 1994 recovery plan, excluding the Upper Virgin River recovery unit, which is excluded from the DPEIS action alternatives.

## Attachment B-1

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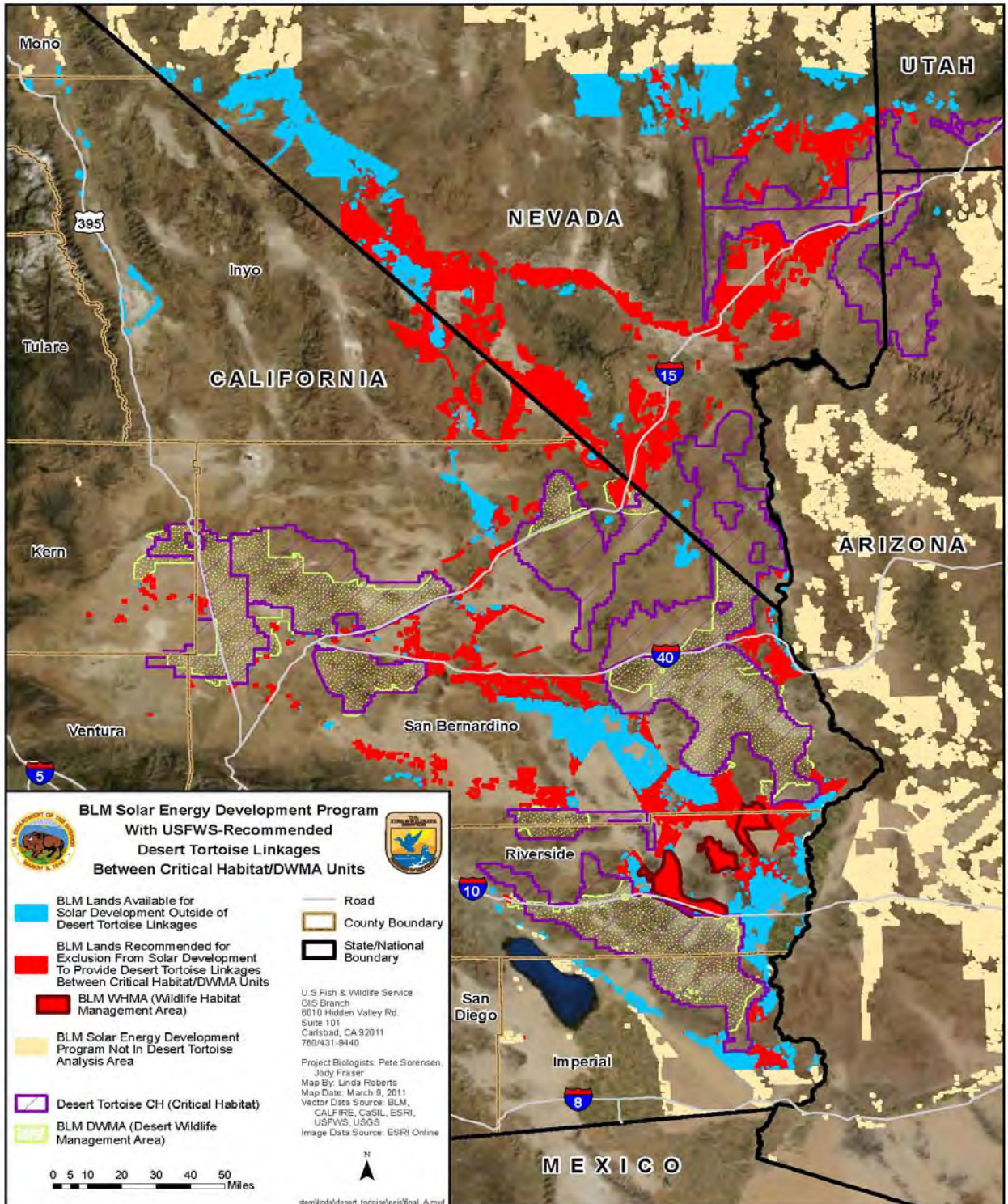
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## Attachment B - 2

This figure depicts the USFWS 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).

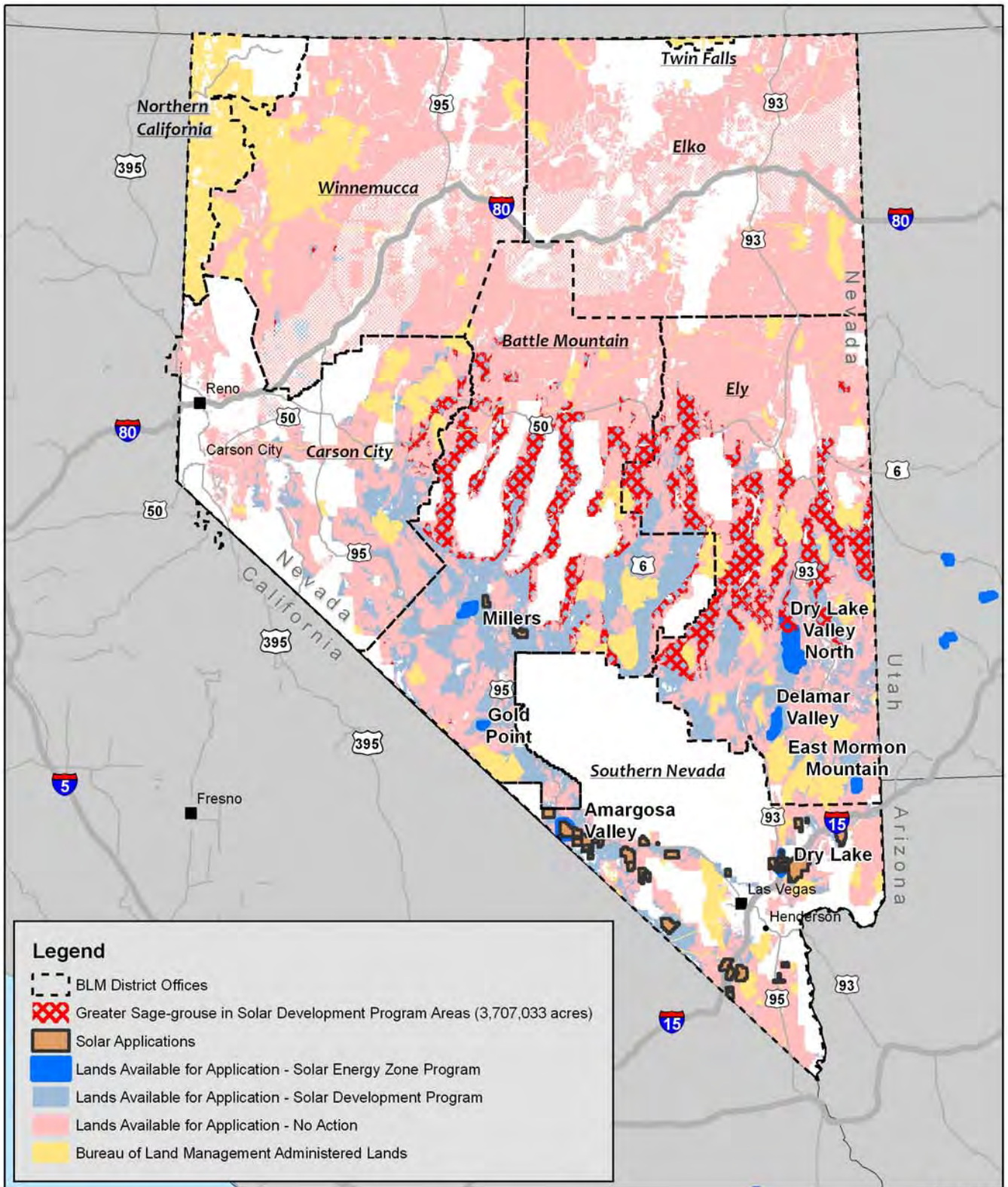
It represents the intersection of lands proposed by the BLM as open for solar energy development under the preferred alternative (blue) with the linkage design (i.e., modeled predicted desert tortoise habitat, historic gene flow, and select Wildlife Habitat Management Areas) (red).

The lands in red are proposed for exclusion from solar energy development by the USFWS and are in addition to those the BLM has identified as excluded in the DPEIS.



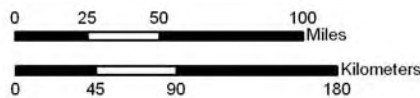


# Greater Sage Grouse Areas of Concern in Nevada



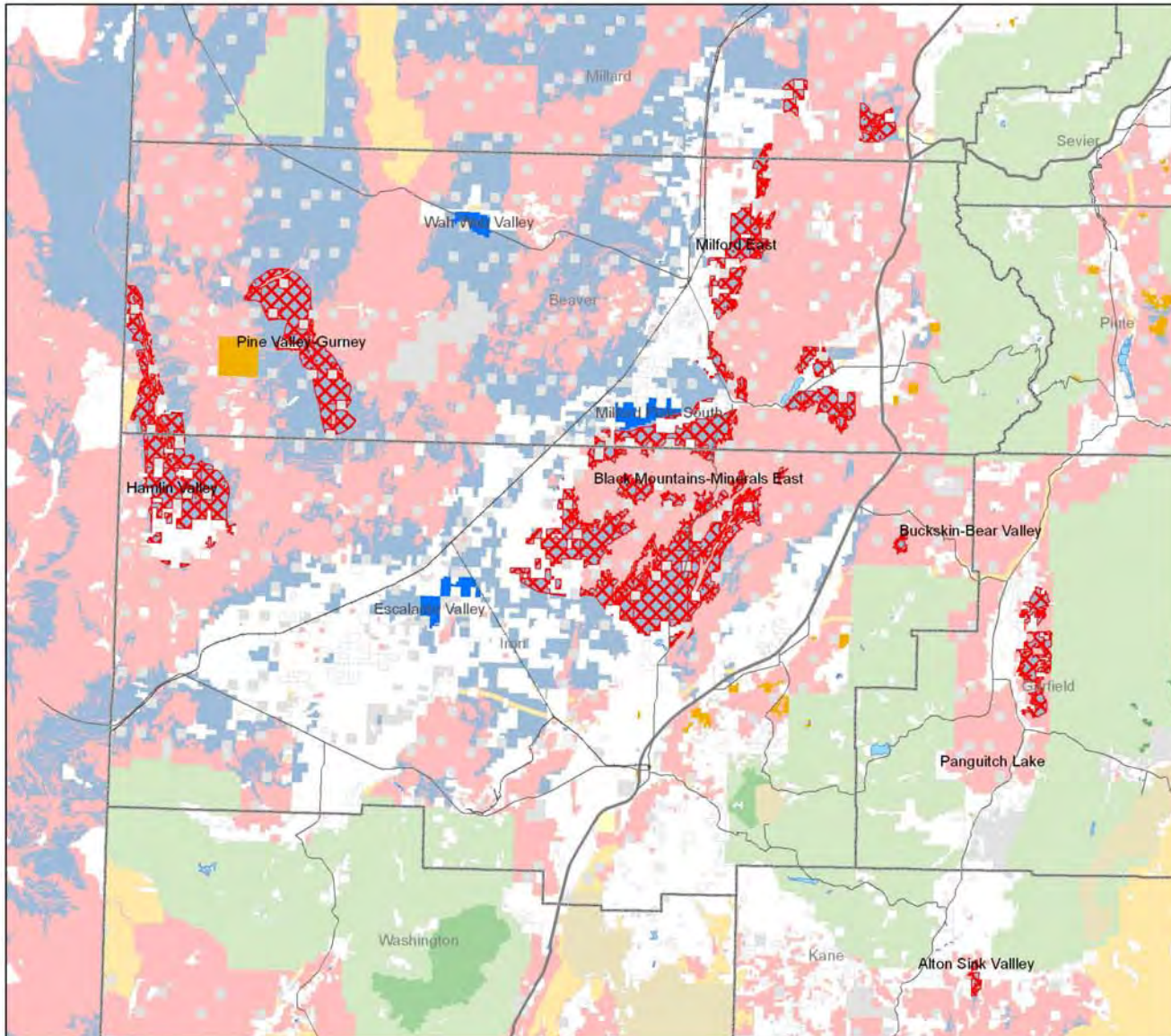
**Legend**

- BLM District Offices
- Greater Sage-grouse in Solar Development Program Areas (3,707,033 acres)
- Solar Applications
- Lands Available for Application - Solar Energy Zone Program
- Lands Available for Application - Solar Development Program
- Lands Available for Application - No Action
- Bureau of Land Management Administered Lands







# Greater Sage-Grouse Areas of Concern in Utah



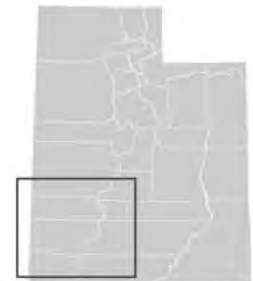
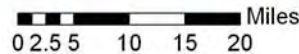
Greater sage-grouse areas of concern identified by FWS Utah Ecological Services Field Office for BLM Solar Energy Development Programmatic EIS. These crucial brood-rearing and/or wintering habitats lie within BLM's preferred alternative for solar development.

Greater Sage-Grouse Data Source: Utah Division of Wildlife Resources, 2010.

**Areas of Concern**

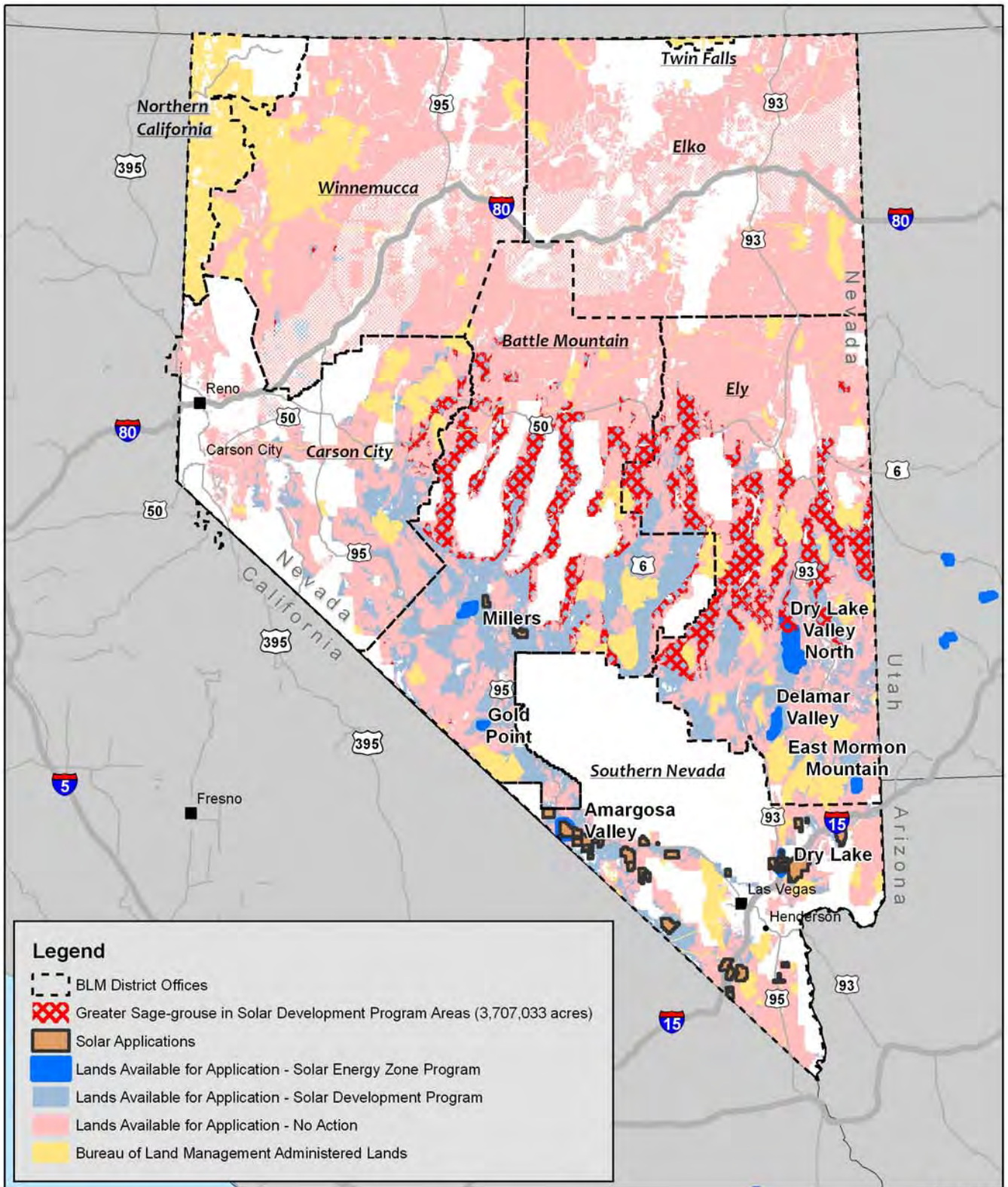
-  Greater Sage-Grouse Areas of Concern within BLM Solar Development Program Alternative (225,618 acres)
-  Lands Available for Application - Solar Energy Zone Program
-  Lands Available for Application - Solar Development Program
-  Lands Available for Application - No Action
-  Other BLM-Administered Lands

Map produced by USFWS Utah Field Office (updated 4/5/11).



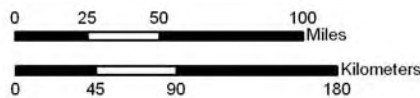


# Greater Sage Grouse Areas of Concern in Nevada



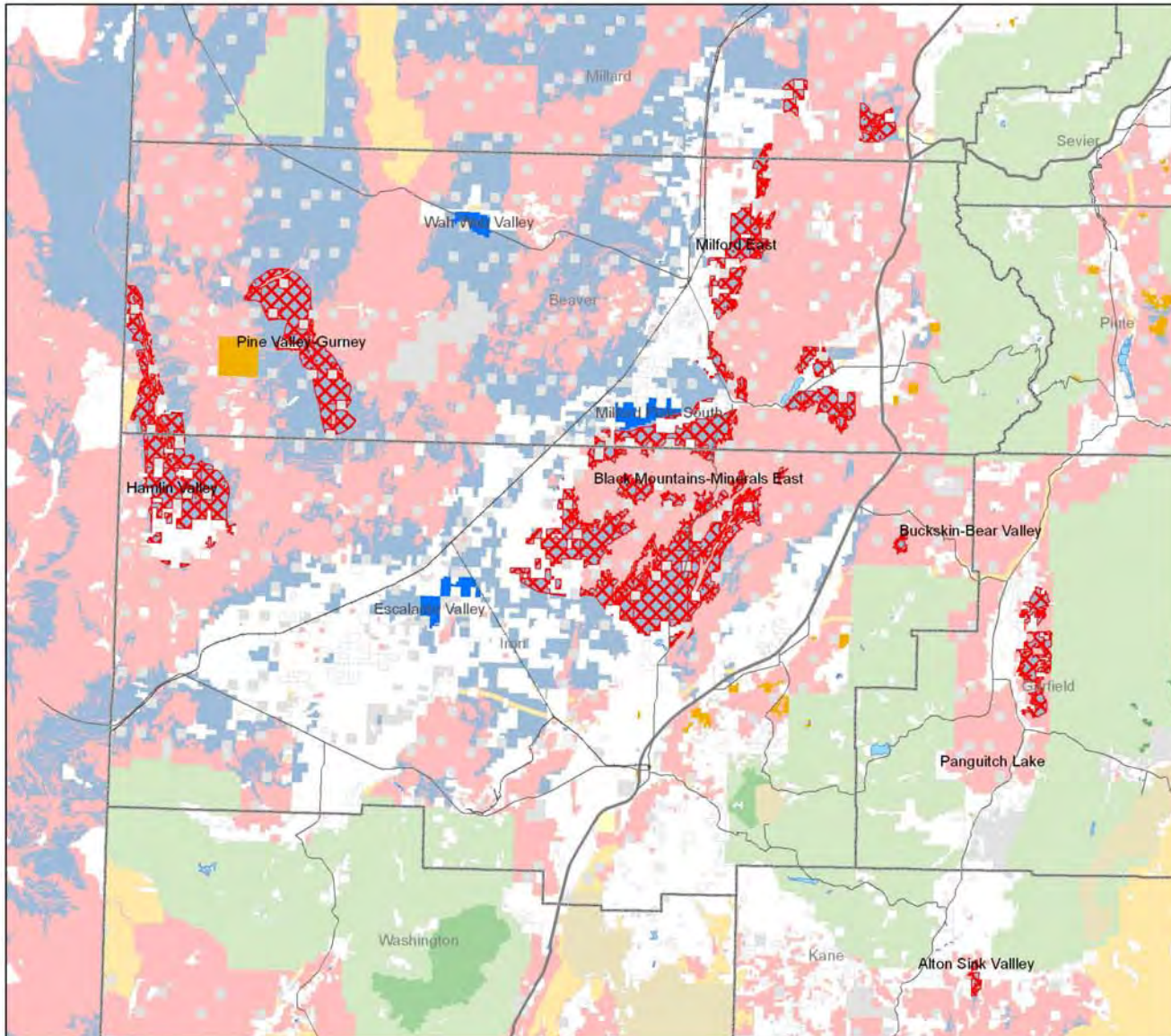
**Legend**

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- Greater Sage-grouse in Solar Development Program Areas (3,707,033 acres)
- Solar Applications
- Lands Available for Application - Solar Energy Zone Program
- Lands Available for Application - Solar Development Program
- Lands Available for Application - No Action
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# Greater Sage-Grouse Areas of Concern in Utah



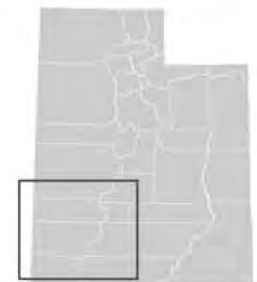
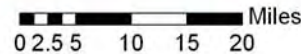
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Map produced by USFWS Utah Field Office (updated 4/5/11).





# NATIONAL PARKS CONSERVATION ASSOCIATION

*Protecting Parks for Future Generations*

April 27, 2011

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

Re: 11,600 signature petition asking that solar energy projects not negatively impact National Park lands in the California Desert, and for the zone only alternative to be chosen.

Please find enclosed a printed copy of an online petition and comments generated by National Parks Conservation Association (NPCA) through our partnership with Care2 ([www.care2.com](http://www.care2.com)). The online petition received 11,600 signatures and comments. We are submitting the letter and a spreadsheet of the signing parties (burned to a CD), including their comments. We ask that this important process consider the voice of the more than 11,000 individuals who have spoken up to protect California Desert National Parks from inappropriately sited solar energy proposals.

NPCA is a non-profit organization dedicated to the protection and enhancement of National Parks for current and future generations. NPCA currently has membership of 320,000 individuals including 44,000 individuals in California.

Thank you for the opportunity to comment on this process, feel free to contact me if I can be of assistance, or to answer any questions that you may have.



David Lamfrom  
California Desert Program Manager  
National Parks Conservation Association



Mojave Field Office, 400 South 2<sup>nd</sup> Ave #213, Barstow, CA 92311  
Telephone (760) 957-7887 • Fax (760) 366-3035

**National Parks Conservation Association's e-alert through Care2:**

**Petition and comments on the Solar PEIS**

Care 2 E-alert:

We need your help to protect desert tortoises, desert bighorn sheep, and iconic National Parks like Joshua Tree, Death Valley, and Mojave National Preserve in the California Desert.

We can all agree that we must break our addiction to foreign oil and move to clean, renewable energy. However, many of the solar energy projects being developed and proposed in the California desert are inappropriately sited next to our cherished National Parks and in critical habitat vital to endangered species. The government is preparing an environmental review that will determine which locations on public land in 6 Western states are appropriate for renewable development. The best alternative identified in the review is the zone-only alternative that will restrict development to within specific areas that do not damage our national parks.

Take action today to encourage responsible energy development and protections for these important places and species!

- Tell Secretary Salazar and Secretary Chu to support renewable energy development in places that DO NOT compromise our National Parks and our efforts to protect threatened and endangered species, such as the desert tortoise.
- Let the Secretaries know that you support the Zone-only alternative to balance development and protections for National Parks and natural communities.
- Share your voice by stating that solar energy study areas should not negatively impact National Parks, and that areas such as Riverside East, Iron Mountain, and Amargosa Valley should be reconfigured or removed to protect our National Parks and their protected resources.