

## DOCKETED

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# United States Department of the Interior

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IN REPLY REFER TO:

L7619 (PWR-NR)

Frank McMenimen  
Bureau of Land Management  
Project Manager – Palen Solar Electric Generating System Project  
1201 Bird Center Drive  
Palm Springs, CA 92262

RE: Review of the Draft Supplemental Environmental Impact Statement for the Palen Solar Electric Generating System Project

Dear Mr. McMenimen:

The National Park Service (NPS) appreciates the opportunity to comment on the Draft Supplemental Environmental Impact Statement (DSEIS) for the proposed Palen Solar Electric Generating System (PSEGS) project. NPS supports renewable energy projects on public lands that can be constructed and operated in an environmentally responsible manner that serves the public interest, protects natural and cultural resources, and protects our treasured landscapes. It is the role of NPS to contribute to the process and the analysis of renewable energy projects to help insure that they meet the Secretary's goal that such projects on public lands are "Smart from the Start." As a cooperating agency, our goal is to provide expertise and practical and specific feedback in order to avoid significant adverse impacts to the resources of the National Park System, and in this instance, specifically to Joshua Tree National Park (Joshua Tree NP).

NPS has reviewed the Palen Solar Power project EIS dated May 2011, as well as the DSEIS for the PSEGS project published July 26, 2013. We have organized general comments by impact topic below and have listed specific comments in regard to the DSEIS document in the attached spreadsheet.

## General Comments

Our greatest concerns are the potential significant adverse impacts to the day and night views from Joshua Tree NP, and the potential for significant adverse cumulative impacts due to development proposed and occurring in the surrounding areas. The construction and operation of two 750-foot tall solar power towers, as proposed by PSEGS, will have unavoidable and unmitigatable significant adverse impacts to the visual and night sky resources of Joshua Tree NP.



Currently, as per the Bureau of Land Management (BLM) website on Approved Renewable Energy Projects ([www.blm.gov/ca/st/en/prog/energy/Approved\\_Projects.html](http://www.blm.gov/ca/st/en/prog/energy/Approved_Projects.html)), most of the photovoltaic project sites in proximity to the proposed PSEGS project have better than expected energy output per acre than that proposed by the PSEGS project. Given the potential resource impacts associated with the construction and operation of two 750-foot tall solar power towers, NPS strongly recommends that BLM consider whether solar power tower technology, as proposed by the applicant, is appropriate for this location. NPS preference would be for BLM to limit development in this location to different technologies that have a lower profile and less potential to negatively impact the resources of Joshua Tree NP, such as a photovoltaic solar system. NPS supports the No Action Alternative A as described in the DSEIS and recommends that BLM add height limitations to project sites in close proximity to park units near the Riverside East Solar Energy Zone (SEZ) to limit the potential impacts to Joshua Tree NP.

### **Visual and Night Sky Resources**

Significant adverse impacts to the visual resources of Joshua Tree NP and nearby wilderness areas are expected should this project be approved. With the proposed height of the PSEGS solar power towers and associated facility lighting, degradation to visual and night sky resources is expected to surpass other projects in the area.

Starry night skies and natural darkness are important components of the special places that NPS protects. National Parks include some of the last remaining harbors of natural darkness and provide an excellent opportunity for the public to experience this endangered resource. NPS is dedicated to protecting and sharing this resource for the enjoyment of current and future generations.

NPS uses the term "natural lightscape" to describe resources and values that exist in the absence of human-caused light at night. Natural lightscapes are critical for nighttime scenery, such as viewing a starry sky, but are also critical for maintaining nocturnal habitat. Many wildlife species rely on natural patterns of light and dark for navigation, to cue behaviors, or hide from predators. Lightscapes can be cultural as well, and may be integral to the historical fabric of a place. Human-caused light may be obtrusive in the same manner that noise can disrupt a contemplative or peaceful scene.

A survey conducted by Joshua Tree NP in November 2010 identified the most important protected attributes/resources valued by park visitors. Unobstructed views, starry night skies and natural darkness were among the high ranking attributes/resources identified. In addition, data taken from Pinto Wells in the Pinto Basin of Joshua Tree NP indicates this area is the darkest measured in the park and is representative of the darkest sites found in the Mojave Desert. Construction and operation of the PSEGS project has a high potential to degrade the natural darkness of the Pinto Basin and the eastern portions of Joshua Tree NP, thereby negatively impacting visitor experience.

Although the applicant included Key Observation Points (KOPs) in its analysis of visual impacts, the NPS finds the DSEIS assessment inadequate. A summary of concerns are as follows:

- In planning meetings between NPS, BLM and the applicant, five locations were presented by NPS that would have more effectively addressed the areas of concern as they relate to Joshua Tree NP. None of the five NPS recommended KOPs were assessed in the DSEIS.
- The visual impact analysis and visual simulations in the document do not include transmission lines and other associated infrastructure.
- There is no assessment or visual analysis which considers the effects of the red and white obstruction and hazard lighting that is currently required by the Federal Aviation Administration (FAA); the document does not confirm that the applicant has received an exception from the FAA and intends to utilize an Audio Visual Warning System, such as the radar-based Obstacle Collision Avoidance System, in place of continuous lighting.
- No assessment of impacts within Joshua Tree NP when there is cloud cover, which may result in significant skyglow or reflectance into the park, was included in the DSEIS visual analysis.
- The DSEIS assessment was limited to an approximately 30 mile radius. During scoping and public review, assessments conducted by non-government organizations and media outlets indicate that the proposed PSEGS project may be visible from more distant locations, including other national park units such as Mojave National Preserve. The impact of visibility cannot be adequately assessed without additional analysis to confirm whether or not the project will have a broader impact than what was analyzed in the DSEIS.

Lighting around the PSEGS facility can and should be minimized more than is described in the DSEIS. There are opportunities to reduce lighting through night sky friendly mechanisms that also meet Occupational Safety and Health Administration requirements. NPS agrees, as offered in the DEIS, to work with the applicant to provide detailed specifics for minimizing lighting that will in turn reduce impacts to visual and night sky resources.

NPS also appreciates the initial conversations with the BLM and the applicant regarding the FAA and alternatives to lighting requirements, and looks forward to the ongoing collaborative effort in addressing these concerns. Due to the height of the proposed solar power towers, addressing the need for updated lighting options is essential. According to the FAA, the radar-based Obstacle Collision Avoidance System (OCAS) is considered to be an acceptable Audio Visual Warning System (AVWS). Using highly sophisticated 3D radar, OCAS keeps the FAA-required warning lights turned off, unless an aircraft is on a dangerous path towards the obstacle. This technology has been installed on transmission towers in the United States and the FAA is in the process of revising its Advisory Circular on obstruction and hazard lighting, which will include language defining use of these “Aircraft Detection Systems.” Currently, the FAA is approving AVWS on a case by case basis.

If this project is approved, NPS recommends that the right-of-way holder, Palen Solar Holdings LLC, agrees to pursue approval from the FAA for the installation and use of AVWS, such as OCAS. This FAA approval would allow for required obstruction and hazard lights to remain turned off unless safety lighting is triggered by the system, thereby decreasing regular lighting of

the facilities and equipment and reducing impacts to the night sky resource. If approved by the FAA, the right-of-way-holder would agree to incorporate AVWS, such as OCAS, into the lighting design. In the event that approval for use of AVWS is not granted at this time, the right-of-way holder would agree to retrofit lighted facilities and equipment with such a system at which time it is approved for use in the future. Similar commitments from BLM in Nevada and Arizona have been established in the Searchlight Wind Energy Project Record of Decision, dated March 2013, and the Mohave County Wind Farm Final EIS, dated May 2013, for future investigation and potential incorporation of AVWS into facility lighting design.

## **Air Quality**

The applicant has not clearly defined the amount of natural gas that will be used on any given day or during extended periods of inclement weather. During the monsoon season (July through September) and during the winter months, numerous days of cloud cover and precipitation are typical and expected. The applicant should quantify and clearly delineate how much natural gas will be utilized to maintain readiness of the system. Also, the BLM should identify which agency will be responsible for monitoring the amount of time the operation will be using natural gas and the quantity that will be combusted.

The EPA requires a Prevention of Significant Deterioration (PSD) process that for any new power plant that will have “major” or “significant” amounts of pollution of any National Ambient Air Quality Standards (NAAQS) criteria pollutant. While the PSEGS project does not fall into the major category, it may fall within the significant category for PM<sub>10</sub> (> 15 tpy). One of the main goals of the PSD process relates to the protection of designated Class I areas in National Parks. The NPS recommends that BLM require the applicant to go through the PSD process. In addition, regarding PSD for criteria pollutants, the EPA ruled in May 2010 that the PSD process also applies to power plants that generate more than 100,000 tons per year of carbon dioxide. The proposed project meets this PSD threshold, and therefore NPS recommends that carbon dioxide generation be estimated and considered as part of the process.

## **Wildlife**

NPS is concerned about the potential impacts to aerial species, including birds, bats, and invertebrates, that use the project area and nearby Joshua Tree NP, whether through migrations, foraging, or by activities within large home ranges. A birding checklist of species was completed for nearby Lake Tamarisk (Center for Biological Diversity 2013) with over 200 bird species listed; 167 of these species are also recorded in Joshua Tree NP. Considering a narrower list and looking specifically at species with more critical population sizes, the U.S. Fish and Wildlife Service (USFWS) has identified Birds of Conservation Concern (2008), and 18 species of the 28 on the list for the Sonoran and Mojave Deserts have also been recorded in the park.

The impacts to these species as a result of solar flux from the project are largely unstudied for the proposed technology and the project site. NPS understands that an Avian Protection Plan will outline mitigation measures to address impacts to avian species, but it is difficult to assess the effectiveness of the plan without its inclusion in the DSEIS. NPS recommends that the Avian Protection Plan be included in the final SEIS to allow for public comment and review. NPS also

recommends that monitoring and surveys for aerial species be contracted by and through the BLM, rather than the applicant, and that results be distributed directly to the USFWS by the BLM to ensure adherence to federal regulations.

NPS found the discussion of impacts to golden eagles insufficient to adequately address potential impacts to eagles that utilize Joshua Tree NP. The reports referenced in the DSEIS identify that golden eagles were observed during field surveys. There are additional recent studies and research that were not included in the DSEIS that indicate more specific and substantial eagle occurrence in the park. These include the Desert Sunlight Solar Energy Project Biological Monitoring Report (2012) and communications with the BLM regarding eagle territories in proximity to the Desert Harvest Solar Energy Project, which identified seven nests in the park located within 10 miles of the proposed PSEGS project. In addition, the Wildlife Research Institute conducted surveys in 2010 and 2011 and, while the methodologies and results are subject to review and some concern, the results nonetheless point to substantial eagle use of the park, including 22 eagle nests comprising nine territories (some of which are well beyond the 10-mile radius specified around projects). It should be noted that all of the surveys mentioned above occurred during very short time periods, usually less than a week for each survey session. These reflect fairly short snapshots, and additional work could conceivably identify even more eagle occurrences. In addition, during drier years (including some of the past few years), based on lower prey numbers, fewer birds may use the area or reproduce, further underestimating the counts. In short, the eagle number estimates relied upon in the DSEIS could significantly understate the number of eagles that may use Joshua Tree NP.

In addition, golden eagles travel well beyond 10 miles and migrate substantial distances across multiple states (USFWS Fact Sheet 2011). While acknowledging that 10 miles is the distance needed to assess impacts for the PSEGS project, the migrating eagles should not be excluded from consideration. In a recent territory study (Katzner et al. 2012) one female had a home range size of 1,741 square miles (over one million acres), well beyond the 10 mile distance utilized in the DSEIS analysis. Eagles beyond the 10-miles distance, including eagles from Joshua Tree NP (both residents and migrants), could use the current PSEGS project footprint area for foraging or pass through the area once the project is in operation.

Given the expected under-representation of eagles in Joshua Tree NP and the fact that resident and migrating birds do travel more than 10 miles (and thus could use the project area), the NPS is concerned that mortality of golden eagles could result from the PSEGS project and that these impacts should be more thoroughly analyzed. To this end, NPS encourages the BLM and applicant to have further discussions with the U.S. Fish and Wildlife Service regarding the need/scope for an Eagle Conservation Plan (ECP), which would outline mitigation measures and monitoring for construction and operation of the project.

Representatives from NPS and BLM were able to tour the Ivanpah Solar Energy Generating System (ISEGS) project site, currently under construction, on October 23, 2013. During the tour, representatives observed that while the solar flux from this technology can diminish soon after units are turned off or after dark, lingering solar flux can remain for much longer, depending on how heliostats are angled and positioned. Since the PSEGS project is similar to the ISEGS project and is proposing to use BrightSource proprietary technology, NPS recommends that all feasible measures be implemented to eliminate the solar flux when the

system is not fully charging, including possible realignment of the heliostats away from the solar receiver when power is not being generated. In this way, potentially damaging effects of concentrated heat on birds, bats, and flying insects could be reduced when the system was not operating.

### **Cultural Resources**

Joshua Tree NP lies within the Area of Potential Effect (APE) for indirect effects to cultural resources, and resources within the park should contribute to the discussion regarding cumulative effects. As stated in the document, direct, indirect, and cumulative effects on cultural resources have not been assessed in the DSEIS. Section 106 responsibilities of the National Historic Preservation Act have not been completed at the time of the DSEIS release, specifically the identification of historic properties and subsequent assessment of adverse effects as stipulated in 36 CFR Part 800.4 and 36 CFR Part 800.5. Obtaining this information will be especially critical for understanding resources at the landscape level, such as Traditional Cultural Properties and Cultural Landscapes. The NPS recommends that cultural inventories involving landscape-level evaluations be completed prior to the start of construction in order to document existing conditions, and that other cultural inventories for affected federal lands be conducted to document indirect and cumulative effects.

We also support and suggest enhanced partnerships with tribes, as the preliminary information from these groups indicates significant but yet undocumented cultural values in the area.

### **Cumulative Impacts**

NPS has significant concerns with the cumulative impacts of development activities in the Chuckwalla Basin SEZ and the Riverside East SEZ. Incremental (and potentially major) changes that would occur across the surrounding environment with each renewable energy and transmission project will lead to additional and additive effects on Joshua Tree NP, especially regarding dark night skies and visual resources. The proposed project is a major contributor to these cumulative impacts, and the cumulative impacts should be thoroughly analyzed and considered.

### **Required Decommissioning**

NPS recommends an additional condition to the Decommissioning and Reclamation Plan. Specifically, if for any reason the facility ceases operations, within three months of cessation of energy production, the planning for decommissioning and deconstruction should begin, and deconstruction should be initiated within one year. Because of the impacts to park resources from both an operable and inoperable system, it is important that the structures and towers be removed quickly if they are no longer being used.

### **Education and Outreach Partnerships with NPS and BLM**

NPS recognizes that the California desert is at the epicenter of a major energy transition towards renewable energy generation. This transition is critical, as energy demands increase and the

environmental impacts from burning fossil fuels become more serious and apparent. As with many major transitions, complex issues, trade-offs, and challenges emerge that must be thoughtfully understood and addressed. In cooperation with other agencies and the BLM, NPS is well positioned to help encourage and facilitate this conversation, and to help promote an informed and engaged public about the effects of climate change, the importance of renewable energy, and the careful attention needed to protect fragile desert ecosystems.

In part to help mitigate the anticipated impacts that will occur to resources of Joshua Tree NP, NPS proposes an education and outreach program focused on telling this complex story of energy transition and environmental protection. Such an effort would be a partnership between NPS and the BLM, and could include other agencies or tribes as well. The parameters of such an effort must still be defined and discussed, but could include interpretive and education programs and displays, visitor serving facilities, and long-term climate change/renewable energy monitoring and/or research. We look forward to meeting with the BLM, the project applicant, and other possible cooperators to explore this opportunity to create a lasting and meaningful mitigation program that serves the public interest.

### **Conclusion**

Thank you for the opportunity to provide comments. If you have any questions regarding our comments or concerns, or need additional information, please contact Joshua Tree NP Superintendent Mark Butler at (760) 367-5502, or Andrea Compton, Chief of Resources at (760) 367-5560 or via email at [Andrea\\_Compton@nps.gov](mailto:Andrea_Compton@nps.gov).

Sincerely,



Christine S. Lehnertz  
Regional Director, Pacific West Region

Enclosure

cc: Jim Kenna, BLM California (Sacramento)  
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