

December 31, 2008

***Delivered via electronic mail ([jim\\_stobaugh@blm.gov](mailto:jim_stobaugh@blm.gov) and [christopher.meyer@energy.state.ca.us](mailto:christopher.meyer@energy.state.ca.us))***

Jim Stobaugh, Project Manager  
Bureau of Land Management

Christopher Meyer, Project Manager  
California Energy Commission

**Re: Scoping comments on the Stirling Energy Systems Solar Two Project**

Dear Mr. Stobaugh and Mr. Meyer,

Please accept and fully consider these comments on the Stirling Energy Systems Solar Two Project (SES Solar Two) on behalf of The Wilderness Society and the Natural Resources Defense Council (NRDC).

The Wilderness Society has worked for more than 70 years to maintain the integrity of America's wilderness and public lands and the biodiversity these lands support. With over 300,000 members and supporters nation-wide, TWS represents a diverse range of citizens. Our goal at TWS is to protect public lands as wilderness and to ensure that land management practices are sustainable and based on sound science to ensure that the ecological integrity of the land is maintained.

NRDC is a non-profit environmental organization with over 650,000 members nationwide. NRDC uses law, science and the support of its members and activists to protect the planet's wildlife and wild places and to ensure a safe and healthy environment for all living things. NRDC has worked to protect wildlands and natural values on public lands for many years.

It is clear that the nation's growing addiction to fossil fuels, coupled with the unprecedented threats brought about by global warming, imperil the integrity of our wildlands as never before. To sustain both our wildlands and our human communities, we need to transition away from fossil fuels. Our public lands harbor substantial wind, solar, and geothermal resources. Developing some of these resources will be important to creating a sustainable energy economy and combating climate change, and The Wilderness Society and NRDC support such responsible development of renewable energy. Renewable resource development is not appropriate everywhere on the public lands, however, and development that does occur on the public lands should take place in a responsible manner.

As the Bureau of Land Management (BLM) processes applications for solar development on public lands, they should continue to improve the process, including incorporating additional Best Management Practices (BMPs), refining their Right of Way (ROW) application process to properly address the differences between solar development and other uses of ROWs, and incorporating recommendations from ongoing transmission

planning. In general, BLM should prioritize development on already disturbed lands which are close to existing transmission and do not contain significant other values and resources.

The scoping comments below are organized under two topics: the relative suitability of the proposed site for a large-scale commercial solar energy development, and the specific issues pertaining to the SES Solar Two proposal and the SunCatcher technology.

## **I. RELATIVE SUITABILITY OF PROJECT PROPOSAL SITE**

Based on the information gathered to date, the SES Solar Two site appears to have potential for developing commercial scale solar energy with fewer impacts to other resources than some other areas with high solar potential managed by the BLM. The absence of sensitive and protected areas such as Areas of Critical Environmental Concern and Citizens' Proposed Wilderness, the relatively limited use of the site for other activities such as recreation, the limited number of sensitive wildlife species in the area, and the presence of existing transmission to support Phase I of the project all contribute to the possibility that development of a commercial scale solar facility on this site could result in an overall benefit to the public lands and the American people who own them.

However, any industrial use of our public lands entails impacts, and development of a commercial scale solar energy facility would exclude all other uses of these lands. Because of the intensive nature of such development, in general we urge the BLM to prioritize permitting solar energy developments on already disturbed lands which are close to existing transmission and do not contain other resources and values which would be impacted by development. The undisturbed nature of the SES Solar Two project site requires further study to ensure that other values will not be unacceptably impacted, as well as careful consideration of other alternative sites that might be better for the proposed purpose. In addition, special care must be taken to ensure that any unavoidable impacts to other resources and values in the project area are minimized and mitigated.

### **A. Cultural Resources**

The California Energy Commission's (CEC) Issues Identification Report (IIR) identifies cultural resources as a technical subject area where critical or significant issues have been identified. The IIR states that,

“Due to the undisturbed nature of the area, the extremely high frequency of identified cultural resources on or adjacent to the proposed project site, and the potential for unidentified cultural resources sites, the BLM and Energy Commission staff are engaged in developing resolutions to the impacts that the proposed SES Solar Two Project would have on cultural resources. It is the intent of the BLM and Energy Commission to gather the additional information necessary to construct an adequate picture of the cultural environment of the project area, and to enable the BLM and the Energy Commission to formulate substantive resolutions to the issues identified.” (IIR p. 6)

With 254 known archaeological sites in the project area (IIR p. 6), we are encouraged that the agencies have identified the study and protection of cultural resources as a priority, and recommend the ongoing commitment to protection of these resources.

*Recommendation:* The BLM should prioritize protection of the area's outstanding cultural resources, including study of the area's resources, development of strategies to minimize and mitigate impacts, and ongoing engagement in consultation with local Native American tribes.

## **B. Biological Resources**

The project applicant's Response to CEC and BLM Data Requests 1-52 Set 1, Part 1 (Data Response) states that potential impacts to burrowing owl habitat and flat-tailed horned lizards may occur (Data Request p. BIO-4). The Data Response outlines steps to be taken to reduce impacts to these species, including a proposed translocation program for flat-tailed horned lizards and preconstruction surveys for burrowing owls. These and other steps to protect these and other species in the area will be important to minimize impacts of the proposed development.

*Recommendation:* The agencies should prioritize protection of species in the project proposal area by further analyzing potential impacts and developing Best Management Practices and steps to minimize and mitigate any unavoidable impacts.

## **C. Water**

Water is a limited resource in the desert southwest, and any project proposal should fully analyze the water needs and identify sources to meet those needs. The IIR states that the SES Solar Two project would require a total of approximately 32.7 acre-feet of raw water per year (IIR p. 3). The IIR further states that water for the project would be provided by the Imperial Irrigation District (IID) via the existing Westside Main Canal. However, in response to a request for detailed information regarding the reliability of the IID for providing the required water, the Data Response simply states that the applicant submitted a letter for additional time to respond to this data request. It is critical that this information be gathered before the ROW is granted.

*Recommendation:* The agencies should gather additional information to confirm that the water needed for the SES Solar Two project will be available as well as that the source of the needed water will conform to existing CEC policy.

## **II. ISSUES SPECIFIC TO SES SOLAR TWO PROPOSAL AND SUNCATCHER TECHNOLOGY**

The SES Solar Two proposal and SunCatcher technology include promising elements, including high thermal efficiency and relatively low water use compared to other power generation sources. However, there are some issues that the agencies should analyze

further in the development of their Preliminary Staff Assessment/Draft Environmental Impact Statement.

The SunCatcher technology has been successfully demonstrated in a prototype six dish model power plant at the Solar Thermal Test Facility at Sandia National Laboratory in New Mexico. This model power plant set a new record for solar-to-grid conversion efficiency in February, 2008 with a 31.25 percent efficiency rate. However, SunCatcher technology has never been produced at commercial scale, and it remains to be seen what technological and economic challenges will face the buildout of 30,000 units proposed for the SES Solar Two project.

Because this technology has not been developed at a commercial scale, and based on the need for additional information regarding certain elements of the technology and project proposal, the agencies should consider the issues below.

#### **A. Phased Development**

##### **1. Limiting development to areas with viable transmission**

The SES Solar Two project proposal consists of two phases. Phase I would consist of 12,000 SunCatchers, with a nominal generating capacity of 300 MW and requiring approximately 2,600 acres. Other than the construction of a new 230-kV substation and a 10.3-mile, double-circuit, 230-kV interconnection transmission line, no new transmission lines or off-site substations would be required for the 300-MW Phase I construction.

Phase II would consist of 18,000 additional SunCatchers with a nominal generating capacity of 450 MW and requiring approximately 3,500 acres. Phase II of the project is dependent on the approval and construction of the 500-kV Sunrise Powerlink transmission line project proposed by San Diego Gas and Electric. Although the Sunrise project was recently approved by the California Public Utility Commission, that approval was highly controversial and may be the subject of litigation. Accordingly, serious questions remain as to whether and if so when this transmission line will be constructed, making the granting of a ROW for the Phase II project area premature.

*Recommendation:* Because of the uncertainty regarding the approval and construction of the Sunrise Powerlink, BLM should consider only granting a ROW for the Phase I project area until such time that the approval of the Sunrise Powerlink has been finalized. Only after that time should BLM consider granting a ROW for the Phase II project area and then only after consideration has been given to the issues identified immediately below.

##### **2. Initial testing and development phase**

Because the SunCatcher technology has not been built at a commercial scale, there are important questions regarding the technological and economic viability of the SES Solar

Two proposal. The proposal site has high value solar resources, as well as significant other values and resources.

Granting a ROW for the SES Solar Two project will prevent any other use of these lands and resources for the duration of the ROW. Because of the presence of solar resources and other values and the uncertainty of the SES Solar Two proposal, the agencies should consider granting an initial testing and development ROW with for a limited time frame and establishing requirements for demonstrating the economic and technological viability of the proposal before extending the ROW. To prevent undue impacts on extensive areas before testing and development is completed, the agencies should limit the acreage of the initial testing and development to the minimum amount necessary for such development.

If SES Solar Two is unable to demonstrate adequate technological and economic viability by the deadline, such an agreement would allow the land to become available for other uses, including the development of a commercial scale solar power facility using technologies which have been successfully constructed at a commercial scale.

*Recommendation:* BLM should consider establishing requirements for demonstration of technological and economic viability of the SES Solar Two project proposal within the first 3-5 years after the ROW is granted before extending the length of the ROW.

#### **D. Hydrogen**

##### **1. Hydrogen production**

The Data Response states that the SES Solar Two project will procure hydrogen through a competitive bidding process with suppliers of industrial gasses (Data Response p. PPE-3). The efficiency conversion is stated to be between sixty-five and seventy-five percent; assuming 65 percent, approximately 24,400 therms of natural gas would be utilized in the production process (Data Response p. PPE-3).

*Recommendation:* The agencies should do an analysis of the energy return on investment to determine the net energy production value of the project.

##### **2. Hydrogen leakage**

The Data Response states that the initial buildout of the SES Solar Two facility will require 6.3 million cubic feet of hydrogen (Data Response p. PPE-1). The Data Response states further that the annual leak replenishment consumption of hydrogen for the project is approximately 6.0 million cubic feet of hydrogen, meaning nearly the entire system must be replenished each year.

*Recommendation:* The agencies should analyze the environmental impacts of the leakage of 6.0 million cubic feet of hydrogen per year and develop strategies to minimize and mitigate any impacts.

## **E. Bonding**

The Data Response states that the plant is expected to have an operational lifetime of at least 40 years, and that when the project is decommissioned at the end of its lifetime, the scrap value of the metal steel and copper alone will cover decommissioning costs of the entire facility including buildings and associated facilities (Data Request p. BIO-10). To ensure that the costs of decommissioning and restoration of the project site are covered, it is critical for the agencies to have an estimate of the anticipated costs as well as a secure mechanism for covering those costs.

The normal accepted bonding method for development on public lands requires the purchase of actual cash bonds prior to development. The ROW could stipulate that the bond will be held in reserve, and the returns from selling scrap metal will be used first for decommissioning and reclamation costs, but the purchase of bonds before development is critical to guarantee protection of our public lands.

To prevent undue financial impacts to the project proponent while guaranteeing full funding for complete decommissioning and reclamation, bonding should be phased in parallel with the project, with bond requirements for each phase based on the amount of development associated with that phase.

*Recommendation:* The agencies should analyze the anticipated costs of decommissioning and restoring the project site. The agencies should also require actual cash bonds be purchased prior to development. Bonding should be phased in parallel with development, with bond requirements for each phase based on the amount of development associated with that phase.

Thank you for your consideration of these comments.

Sincerely,

The Wilderness Society  
Alex Daue, Renewable Energy Coordinator  
BLM Action Center  
Denver, CO 80202

Natural Resources Defense Council  
Johanna H. Wald, Senior Attorney  
111 Sutter Street  
San Francisco, CA 94104