

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**

REGION IX

75 Hawthorne Street

San Francisco, CA 94105-3901

SEP 08 2009

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

Subject: Notice of Availability of Maps and Additional Public Scoping for the Programmatic Environmental Impact Statement to Develop and Implement Agency-Specific Programs for Solar Energy Development; Bureau of Land Management Approach for Processing Existing and Future Solar Applications in Six Western States

Dear Sir/Madam:

The U.S. Environmental Protection Agency (EPA) has reviewed the June 30, 2009 Notice of Availability (NOA) of Maps and Additional Public Scoping for the Programmatic Environmental Impact Statement (PEIS) to evaluate solar energy development in six western states, including Arizona, California, Colorado, New Mexico, Nevada, and Utah. Our review was conducted pursuant to Section 309 of the Clean Air Act, the National Environmental Policy Act (NEPA), and the Council on Environmental Quality (CEQ) NEPA implementing regulations (40 CFR Parts 1500-1508).

The Department of Energy (DOE) and the Bureau of Land Management (BLM) propose to prepare an Environmental Impact Statement (EIS) to develop and implement agency-specific programs that would facilitate environmentally responsible utility-scale solar energy development. The NOA informs the public of the availability of the solar energy study area maps and solicits public comments on environmental issues, existing resource data, and industry interest in the solar study areas. Previously on July 17, 2008, EPA submitted comments on the May 29, 2008 Notice of Intent (NOI) to prepare an EIS. EPA Region 8 also submitted comments on that NOI on July 7, 2008.

As part of the Solar PEIS, BLM and DOE propose to conduct in-depth environmental analyses of 24 solar energy study areas for the purpose of determining whether such areas should be designated as Solar Energy Zones (SEZs), locations that are best suited for large-scale production of solar energy. The solar energy study areas were identified based on preliminary results of California's Renewable Energy Transmission Initiative (RETI), the Western Governor's Association Western Renewable Energy Zone and Transmission (REAT) Study, and existing BLM resource information. The BLM and DOE are requesting information and comments on the potential for significant resource impacts within the solar energy study areas and the economic viability of solar energy development within these areas.

As stated in our July 17, 2008 letter, EPA supports increasing the development of renewable energy resources, as directed by the Energy Policy Act of 2005. Using renewable energy resources such as solar power can help the nation meet its energy requirements while reducing greenhouse gas emissions. We believe that the programmatic EIS is the appropriate venue to identify mitigation measures and approaches that are designed to minimize adverse impacts to sensitive resources in the surrounding landscape. We encourage BLM and DOE to draft a programmatic document that will result in the successful and environmentally-responsible development of solar resources within the six states. With that in mind, we would like to offer some additional suggestions for your consideration.

EPA recommends that the PEIS include a detailed description of each of the solar energy study areas and describe how these particular study areas were selected. We recommend that the PEIS provide an overview of the selection process, and include links to any studies, references, databases, or maps that were utilized in the selection process. The references and Internet links should be organized in a consistent format for each of the states and placed in an appendix. This information will provide a well-documented resource for state and federal agencies as well as the public. If this information is properly catalogued, the reader will be able to refer to it and determine if the most recent data has been used. If BLM and DOE determine that more accurate information on a particular topic is expected in the near future, we recommend they note that accordingly.

It is our understanding that the PEIS will also address existing and future solar energy development applications on BLM-administered lands outside the 24 solar energy study areas. We recommend that the PEIS also provide detailed information on these lands, including the most up-to-date sources of information on critical habitat, endangered species, wildlife corridors/crossings, and water resources. Maps that show the habitat corridors and presence of threatened and endangered species throughout the six states should be referenced and included in the appendices, if possible. This will provide the public and the decision makers with an excellent resource for detailed information in these areas.

EPA recommends that the maps presented in the PEIS clearly and accurately illustrate the current boundaries of State Parks, National Preserves, National Wildlife Refuges, National Parks, and National Monuments, including the Catellus lands.¹ The Catellus lands contain more than 600,000 acres located between the Mojave National Preserve and Joshua Tree National Monument Park and serve as an important linkage protecting wildlife corridors and ecological processes. The maps should also show existing habitat corridors and areas where threatened and endangered species may be present, especially if they are located in close proximity to the solar energy development areas.

¹ Senator Diane Feinstein has expressed an interest in incorporating the Catellus lands into a national monument. The national monument designation would ensure that hundreds of thousands of acres between the Joshua Tree National Park and the Mojave National Preserve are protected in perpetuity. The Catellus lands were previously donated to or purchased by the Department of the Interior for conservation.

We encourage BLM and DOE to be as transparent and direct as possible within the PEIS, particularly with regards to conducting environmental reviews in compliance with state (e.g. California Environmental Quality Act - CEQA) and federal (NEPA) requirements. It is our understanding that future installations located in the SEZs will tier to the PEIS. Consequently, any criteria that will be used in identifying the appropriate level of NEPA analysis (EIS or Environmental Assessment) for these installations should be discussed within the PEIS. This will enable the public and the decision makers to be more fully informed about the overall process.

EPA is concerned about the magnitude of potential impacts associated with multiple large-scale installations in the desert Southwest, and how the BLM and DOE plan to evaluate these impacts, given the uncertainty of the number and scale of projects. Given the large number of solar applications, it seems probable that direct and indirect impacts associated with the ever-increasing number of projects may be more severe than initially recognized. We strongly recommend that BLM and DOE commit to monitoring impacts on an on-going, continuous basis and use this information to inform or guide the decision-making process with respect to the number of projects that will be permitted within the SEZs. This decision should be contingent on the future condition of the natural resources.

A rigorous monitoring program is essential, as is a firm commitment to collect unbiased data, and to monitor continuously for the duration of the projects. The monitoring program should include a comprehensive analysis of baseline data in all solar energy study areas. A uniform set of baseline data should be collected within each of the study areas and evaluated prior to the development of large-scale installations in that area. We recommend the collection of baseline data be initiated as soon as possible and suggest that the BLM and DOE consider engaging the U.S. Geological Survey (USGS) to collect water quality and water monitoring data. The USGS also has substantial expertise with biological monitoring, including desert tortoise research, and may be able to offer additional expertise in that area as well.

EPA is particularly concerned about water consumption associated with solar energy projects in the desert. Large-scale solar installations that utilize wet-cooling may require significant water resources. Solar installations that utilize dry-cooling require much less water—up to 90 percent less. We recognize that wet cooling technology has performance advantages over dry cooling, especially in arid regions, and may be less expensive; however, due to the general scarcity of water in the region, the large number of solar project applications submitted to BLM, and the ever-increasing demand for this commodity, EPA is concerned about the depletion of this resource, particularly in desert regions. EPA recommends that the PEIS compare the water demands of various solar thermal technologies and discuss power demands associated with moving the water needed for each technology. The PEIS should also address the potential benefits of requiring solar thermal companies to utilize technology that will minimize water use, such as dry cooling rather than wet cooling, and to implement water conservation measures that will reduce water demands. Water saving strategies can be found in the EPA's publications *Protecting Water Resources with Smart Growth* at www.epa.gov/piedpage/pdf/waterresources_with_sg.pdf, and *USEPA Water Conservation Guidelines* at www.epa.gov/watersense/docs/app_a508.pdf.

The PEIS should also evaluate the life cycles of various solar energy technologies in order to identify impacts that may result from the pursuit of one technology versus another. Such an evaluation should discuss the impacts associated with obtaining, processing, and transporting the raw materials needed for each technology. In addition, the life cycle analysis should address future dismantling of the assemblies and material recovery for reuse and/or recycling.

If there are locations within SEZs that are suitable for other types of renewable energy development (e.g., wind, geothermal), we urge BLM and DOE to consider which energy source has the potential, at each such location, to generate the greatest amount of power with the least environmental impact. For example, if the location of an SEZ overlaps an optimum location for wind energy development, consider whether the development of solar energy at that location would likely result in greater or lesser adverse environmental impacts than would be expected from the generation of the same or greater amount of power from wind energy at that location. We urge BLM and DOE to ensure that the outcome of the Solar PEIS does not discourage or preclude the development of other renewable energy sources in locations where such development may be more appropriate, in terms of efficiency and relative environmental impacts, than development of solar energy.

Although we support BLM and DOE in their efforts to identify the SEZs, we also recognize that there are other alternatives and venues that may be preferable from an ecological perspective. For example, the EPA has worked closely with the DOE's National Renewable Energy Laboratory (NREL) to develop maps² showing contaminated lands and mining sites with renewable energy generation potential. These maps were developed in conjunction with the *RE-Powering America's Land: Renewable Energy on Contaminated Land and Mining Sites* program,³ which was launched by the EPA Office of Solid Waste and Emergency Response (OSWER) in September 2008. Under this initiative, EPA is taking a multi-pronged approach⁴ to encouraging reuse of EPA tracked lands⁵ into clean and renewable energy production facilities. EPA has developed a Renewable Energy Interactive Mapping Tool⁶ that utilizes Google Earth to display these sites. We estimate that there are approximately 480,000 disturbed and contaminated sites and almost 15 million acres of potentially contaminated properties across the United States. Many of the contaminated properties are suitable for renewable energy development and have existing transmission capacity and infrastructure in place, as well as adequate zoning. We strongly encourage BLM, DOE, and other interested parties to pursue siting renewable energy projects on disturbed, degraded, and contaminated sites, before considering large tracts of

² To develop the maps, EPA and NREL collected renewable energy resource information and merged it with EPA and state data on contaminated lands and mining sites across the country. The mapping analysis applied basic screening criteria, such as distance to electric transmission lines, distance to roads, renewable energy potential, and site acreage in order to identify EPA tracked lands that might be good candidates for solar, wind, or biomass energy production facilities.

³ For additional information on EPA's RE-Powering America's Land, please use the following weblink: <http://www.epa.gov/renewableenergyland/index.htm>

⁴ See Internet site: http://www.epa.gov/renewableenergyland/docs/repower_contaminated_land_factsheet.pdf

⁵ EPA tracks abandoned mine lands, Brownfields, Resource Conservation and Recovery Act (RCRA) sites, Federal Superfund Sites, and Non-Federal Superfund Sites.

⁶ See Internet site: http://www.epa.gov/renewableenergyland/mapping_tool.htm. Open the Renewable Energy Interactive Map (KMZ) to launch the Renewable Energy Mapping Tool. More detailed information on the EPA tracked sites is available at: http://epa.gov/renewableenergyland/maps/ocpa_renewable_energy_data.xls.

undisturbed public lands.

To that end, we note that the BLM Arizona State Office recently issued a call for proposals⁷ for the National System of Public Lands Restoration Design Energy Project, funded under the Department of Interior's American Recovery and Reinvestment Act (ARRA) of 2009. Implementation of this initiative will result in the identification of disturbed or previously developed sites within the National System of Public Lands in Arizona that, after remediation or site preparation, can be made available for renewable energy development or generation. EPA Region 9 submitted an initial list of sites for consideration on August 28, 2009.

Another alternative that deserves further consideration is residential and wholesale distributed generation in urban areas. Distributed generation is the use of small-scale power sources on-site that can also supply energy to a utilities distribution center. Examples include solar photovoltaic (PV) systems mounted on rooftops, commercial warehouses, or parking lots. Systems can range up to several megawatts and are typically located near load demand. Because such systems are typically built on existing structures, they cause fewer environmental impacts than large-scale installations. Installing units on rooftops in urban areas also eliminates the need to build new transmission lines. Distributed generation offers several other benefits including: reducing generation costs by reducing line losses through the transmission and distribution system; reducing congestion; reducing peak demand loads; enhancing the efficiency, reliability and operational benefits of the distribution system; and improving the overall security of our energy supply.

Wholesale distributed generation is gaining popularity in California as the cost of PV systems continues to decrease. The California RETI has determined⁸ that there is tremendous potential (up to 27,500 MW) associated with the development of small-scale (1-20 MW; less than 160 acres) PV facilities located near existing substations. On June 18, 2009, the California Public Utilities Commission approved⁹ Southern California Edison's plan to install scores of 1-2 MW PV grid-connected systems (up to 500 MW) on the rooftops of commercial buildings across Southern California. In another recent decision,¹⁰ the California Energy Commission denied an application for a 100-megawatt (MW) natural gas-fired peaker plant in part because rooftop solar PV could potentially achieve the same objectives for comparable costs. EPA recommends that distributed generation be evaluated further because it would avoid most of the environmental impacts associated with the development of large-scale installations in the desert. EPA recommends that the PEIS discuss the feasibility of using residential and wholesale distributed generation, in conjunction with increased energy efficiency and conservation, as an alternative within the alternatives analysis.

⁷ See notice at Internet site: http://www.blm.gov/pgdata/etc/medialib/blm/az/pdfs.Par.82107.File.dat/External-Call-for-submissions_June30.pdf

⁸ See RETI Phase 1B Report at Internet site: <http://www.energy.ca.gov/2008publications/RETI-1000-2008-003/RETI-1000-2008-003-F.PDF>

⁹ See press release at Internet site: http://docs.cpuc.ca.gov/word_pdf/NEWS_RELEASE/102580.pdf

¹⁰ See article at Internet site: http://www.cadesertco.org/Natural_Gas_&_Electricity_Journal_2009_August.pdf

We appreciate the opportunity to provide comments on the preparation of the PEIS and look forward to continued participation in this process as more information becomes available. When the Draft PEIS is released for public review, please send one hard copy and one CD to the address above (mail code: CED-2) at the same time it is officially filed with our Washington D.C. Office. We also request that you send additional hard copies and CDs to the following reviewers: Mr. James Hanley, EPA Region 8; Ms. Sharon Osowski, EPA Region 6; and Ms. Elaine Suriano, EPA HQ. If you have any questions, please contact me at (415) 972-3545 or mcpherson.ann@epa.gov.

Sincerely,



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