



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

July 12, 2010

John Kalish
Field Manager
BLM Palm Springs-South Coast Field Office
Bureau of Land Management
1201 Bird Center Drive
Palm Springs, CA 92262

Subject: Draft Environmental Impact Statements for the Solar Millennium and Chevron Energy Solutions 1) Blythe Solar Power Project [CEQ#20100085] and 2) Palen Solar Power Project [CEQ#20100102], Riverside County, California

Dear Mr. Kalish:

The U.S. Environmental Protection Agency (EPA) has reviewed the Draft Environmental Impact Statements (DEIS) for the Solar Millennium and Chevron Energy Solutions 1) Blythe Solar Power Project and 2) Palen Solar Power Project in Riverside County, California. Our comments are provided pursuant to the National Environmental Policy Act (NEPA), Council on Environmental Quality (CEQ) regulations (40 CFR Parts 1500-1508), and our NEPA review authority under Section 309 of the Clean Air Act.

EPA supports the development of renewable energy resources in an expeditious and well planned manner. Using renewable energy resources, such as solar power, can assist the nation in meeting its energy requirements while minimizing the generation of greenhouse gases. While renewable energy facilities offer many environmental benefits, appropriate siting and design of such facilities is of paramount importance if the nation is to make optimum use of its renewable energy resources without unnecessarily depleting or degrading its water resources, wildlife habitats, recreational opportunities, and scenic vistas.

The Bureau of Land Management has identified thirty-four proposed renewable energy projects as "fast track" projects that are expected to complete the environmental review process and be ready to break ground by December 2010 in order to be eligible for funding under the American Recovery and Reinvestment Act. We are aware that many more projects that have not been designated "fast-track" are also being considered by BLM. Many, if not all, of these projects, fast track or otherwise, are proposed for previously undeveloped sites on public lands. In making its decisions regarding whether or not to grant rights-of-way for such projects, we recommend that BLM consider a full range of reasonable alternatives to minimize the adverse environmental impacts. Such alternatives could include alternative technologies or altered

project footprints at the proposed location, as well as alternate sites, such as closed landfill or other disturbed sites that may offer advantages in terms of availability of infrastructure and less vulnerable habitats. Given the large number of renewable energy project applications currently under consideration, particularly in the Desert Southwest, we encourage BLM to apply its land management authorities in a manner that will promote a long-term sustainable balance between available energy supplies, energy demand, and protection of ecosystems and human health.

On December 11, 2009, EPA provided separate scoping comments for the Blythe Solar Power Project and the Palen Solar Power Project which included detailed recommendations regarding purpose and need, range of alternatives, water resources, and other resource areas of concern. On June 15, 2010, we requested and received an extension on the Blythe Solar Power Project so that we could complete our reviews and prepare a single letter to convey our comments on both of these solar trough projects, which are in close proximity to each other. We appreciate your willingness to provide us with additional time to complete our review. We have rated the Blythe and Palen Solar Power Projects and DEISs as *Environmental Concerns – Insufficient Information* (EC-2). Please see the enclosed “Summary of EPA Rating Definitions.”

In the enclosed detailed comments, we provide specific recommendations regarding analyses and documentation needed to assess potential significant impacts from the proposed Projects. Specifically, EPA is concerned with the: 1) mitigation for impacts to biological resources and special status species, 2) current justification for the Project purpose and need, 3) facility siting and 4) mitigation for ephemeral wash and groundwater impacts.

In addition, the Blythe and Palen Solar Power Project DEISs evaluate Reconfigured Alternatives and Reduced Acreage Alternatives which would significantly reduce adverse impacts to state waters and higher quality desert tortoise and burrowing owl habitat. The Reduced Acreage Alternative for Blythe would generate 750 megawatts (MW) of power while reducing impacts to habitat by 40% and avoiding 305 acres of state waters which provide valuable hydrologic, biogeochemical, plant and wildlife functions. The Reduced Acreage Alternative for Palen would generate 375 MW of power while avoiding 242 acres of state waters and nearly 1,800 acres of desert tortoise habitat. Fewer direct adverse impacts would significantly reduce required mitigation security payments and adverse cumulative impacts. We encourage BLM to select the Reduced Acreage Alternatives for Blythe and Palen if it chooses to grant right-of-way permits and amend the California Desert Conservation Area Plan for the Projects.

EPA appreciates the opportunity to provide input on these Projects and the multitude of DEISs under preparation for renewable energy projects in our Region. We are available to further discuss all recommendations provided. When the FEISs are released for public review, please send one hard copy and one CD of each to the address above (Mail Code: CED-2). If you

have any questions, please contact me at 415-972-3521, or contact Stephanie Skophammer, the lead reviewer for these Projects. Stephanie can be reached at 415-972-3098 or skophammer.stephanie@epa.gov.

Sincerely,

/s/

Kathleen M. Goforth, Manager
Environmental Review Office (CED-2)
Communities and Ecosystems Division

Enclosures: Summary of EPA Rating Definitions
Detailed Comments

Cc: Jim Abbott, Bureau of Land Management, California State Office
Allison Shaffer, Bureau of Land Management, Palm Springs Field Office
Alan Solomon, California Energy Commission
Shannon Pankratz, US Army Corps of Engineers
Tannika Engelhard, United States Fish and Wildlife Service
Becky Jones, California Department of Fish and Game
Michael Picker, Office of the Governor

U.S. EPA DETAILED COMMENTS ON THE DRAFT ENVIRONMENTAL IMPACT STATEMENTS FOR THE SOLAR MILLENNIUM AND CHEVRON ENERGY SOLUTIONS BLYTHE AND PALEN SOLAR POWER PROJECTS, RIVERSIDE COUNTY, CALIFORNIA, JULY 1, 2010.

Project Description

Palo Verde Solar I and Palen Solar I, wholly owned subsidiaries of Solar Millennium, have submitted right-of-way (ROW) applications to the Bureau of Land Management (BLM) to construct separate concentrated solar thermal parabolic trough power plant facilities with a combined capacity of 1,500 megawatts (MW). Chevron Energy Solutions and Solar Millennium have a joint development agreement. The proposed projects lie in the southwestern deserts of California, approximately 40 miles from one another in Riverside County. Blythe Solar Power Project would consist of two 500 MW dry-cooled facilities that would use 600 acre feet per year (afy) of groundwater from onsite wells and be located on approximately 7,030 acres of public land near the Community of Blythe, CA. Palen Solar Power Project is also a dry-cooled facility, consisting of two 250 MW units on approximately 3,000 acres near Desert Center, CA, and would use 300 afy of groundwater from two onsite wells. Each facility is expected to operate for approximately 30 years.

Except where noted otherwise, all of the comments below apply to both Projects.

Ephemeral Washes and Drainage

Demonstrate that the proposed drainage plans will not disrupt downstream flows, functions, or values. The Blythe DEIS states that surface hydrology in the Project disturbance area is from storm water runoff originating in unnamed ephemeral washes west of the Project site from the McCoy Mountains. These washes are a component of the large alluvial fan that generally comprises the Palo Verde Mesa (p. C.2-16). The applicant's drainage plan proposes to replicate existing flow patterns and volume with five engineered channels adjacent to, through, or across the Project site with diffusers at the end which would restore sheet flow down slope of Project (p. C.2-54).

The Palen DEIS states that 364 acres of state jurisdictional waters will be impacted and that surface hydrology in the Project area is influenced largely by stormwater runoff off the northeastern flank of the Chuckwalla Mountains (p. C.2-20). The drainage plan for the Palen Project includes replicating existing flow patterns and volume of three channels; but channel design has yet to be finalized (p. C.2-67).

Recommendations:

Demonstrate that downstream flows will not be disrupted due to proposed changes to natural washes nor the excavation of large amounts of sediment.

Discuss the feasibility of utilizing existing drainage channels on site. Discuss the feasibility of utilizing more natural features, such as earthen berms or channels, rather than concrete-lined channels, if proposed.

Include the finalized drainage plan for each project in its respective Final Environmental Impact Statement (FEIS), to facilitate assessment of impacts and effectiveness of mitigation measures.

Provide more detailed information about fencing and its potential effects. The DEIS does not provide detailed information about fencing nor the effects of fencing on drainage systems and wildlife. In this region, storms can be sudden and severe, resulting in flash flooding. Fence design must address hydrologic criteria, as well as security performance criteria. The National Park Service recently published an article¹ on the effects of the international boundary pedestrian fence on drainage systems and infrastructure. We recommend that BLM review this article to ensure that such issues are adequately addressed. Fencing should also be designed to effectively preclude wildlife access, injury, and mortality.

Recommendation:

Provide more detailed information about fencing and its potential effects on drainage systems within the FEIS. Ensure that the fencing proposed for this project will meet appropriate hydrologic, wildlife protection and movement, and security performance standards.

Biological Resources

Describe the final biological resources mitigation commitments and how they will be funded and implemented. The Palen DEIS Biological Resources Table 6 (p. C.2-65) summarizes the recommended mitigation acreage for the proposed project, including 4,740 acres for desert tortoise, 3,011 acres for the Mojave fringe-toed lizard and 585 acres for direct impacts to State waters. The applicant proposes to achieve a 1.5:1 compensation ratio for desert wash woodland and a 0.5:1 ratio for unvegetated ephemeral swales. The Blythe project DEIS proposes to acquire 7,040 acres for desert tortoise (p. C.2-60), and achieve a 1.5:1 compensation ratio for desert wash woodland and a 1:1 ratio for vegetated ephemeral swales (p. C.2-54). For both projects, the costs associated with desert tortoise compensatory mitigation include an acquisition fee of \$500 per acre, an initial habitat improvement cost of \$330 per acre, and a long-term management endowment of \$1,450 per acre (for total of \$2,280 per acre security fee).

Detailed mitigation measures are determined on a project specific basis, and must be contained in each project's environmental analyses and decision documents. Project proponents have a number of options by which they can fulfill their mitigation requirements. The California Renewable Energy Action Team (REAT) recently announced a Memorandum of Agreement (MOA) with the National Fish and Wildlife Foundation for operation of the Renewable Energy Action Team Mitigation Account (REAT Account). The REAT Account is designed to help project proponents and the State and Federal governments more effectively implement biological resources mitigation for renewable energy projects in the Mojave and Colorado Desert region of southern California. It also will aid project proponents in carrying out contracting and construction activities in a timely manner per requirements for American Recovery and

¹ National Park Service, August 2008, Effects of the International Boundary Pedestrian Fence in the Vicinity of Lukeville, Arizona, on Drainage Systems and Infrastructure, Organ Pipe Cactus National Monument, Arizona,

Reinvestment Act (ARRA) funding eligibility. Use of the REAT Account is only one of several options available to the proponent, and participation is voluntary.

Recommendations:

The FEISs should describe the final biological resources mitigation commitments for both projects and how they would be funded and implemented. They should state whether and how the Project applicant would utilize the REAT account or other mechanism.

Include, in the FEISs, mitigation plans for unavoidable impacts to waters of the State and biological resources such as desert tortoise, desert kit fox, burrowing owls, Nelson's bighorn sheep, golden and bald eagles, and their habitats. Such mitigation plans are described briefly in the sections BIO-1 to 24 in the Palen and Blythe DEISs; further details should be provided in the FEISs. Specifically, if the applicant is to acquire compensation lands, the location(s) and management plans for these lands should be fully disclosed.

All mitigation commitments should be included in the Record of Decision (ROD).

Groundwater

Further describe groundwater mitigation and detail its effectiveness in minimizing groundwater withdrawal. Both the Palen and Blythe proposed projects could impact water resources, and BLM and CEC staff have proposed mitigation measures to reduce identified groundwater impacts to levels that are less than significant (p. C.9-1). The Soil and Water Resources section C.9 of the Palen and Blythe DEISs references these mitigation measures, but a discussion of the effectiveness and the impacts of the mitigation is not included.

The Palen DEIS acknowledges that, due to the high volume of projects in the region, cumulative impacts to groundwater could be significant and may place the Palen project's Chuckawalla basin in overdraft condition. Overdraft is described as the amount of water withdrawn exceeding the amount of water that recharges the basin (p. C.9-38). Although the amount of water in basin storage greatly exceeds the potential overdraft, the Palen DEIS notes that a drop in groundwater levels could impact basin wells and lower the water table (C.9-40). Such basin balance analyses for the Palo Verde Mesa Basin are not provided in the Blythe DEIS.

Recommendation:

The Blythe FEIS should include a basin balance analysis for the Palo Verde Mesa Groundwater Basin.

Impacts to groundwater in the Chuckawalla Valley Groundwater Basin (Palen) and the Palo Verde Mesa Groundwater Basin (Blythe) should be minimized as much as possible. This may involve altering project design, implementing recycled water techniques, as well as considering reduced acreage alternatives. The FEISs should describe the effectiveness of, and commitments to, the mitigation and monitoring plans described in

the Mitigation Measures C.9.12 Soil&Water-1 to 11 (Palen) and C.9.10 Soil&Water-1 to 17 (Blythe).

The Blythe FEIS should also further describe the estimation of the impacts from withdrawing groundwater that is recharged by the Colorado River (p. C.9-108) and the effectiveness of the mitigation proposed. The expected effectiveness of the mitigation must be documented and committed to, and the FEIS should clarify whether or not an entitlement to water from the Colorado River aquifer would be needed. This information should be made available in the FEIS and the ROD.

Purpose and Need

Update the discussion regarding the need for the proposed project. In the last three years, there has been tremendous growth in renewable energy, and decline in the more traditional sectors, including the postponement/indefinite delay and modification of large coal-fired power plants. Many factors have triggered this shift, including concerns about global warming and climate change. These events have spawned an unprecedented increase in the number of applications submitted to BLM for large-scale renewable energy projects on public lands in the desert southwest. BLM has received over 470 renewable energy project applications, to date, with a projected capacity of 97,000 MW of electricity².

EPA believes the discussion in the Blythe and Palen DEISs regarding the purpose and need for the proposed Project should be expanded to include more robust information regarding the *need* for the proposed project. As indicated in our scoping comments dated December 11, 2009, the DEIS should briefly discuss the proposed project in the context of the larger energy market that this project would serve; identify potential purchasers of the power produced; and discuss how the project will assist the State and nation in meeting renewable energy portfolio standards and goals.

Recommendation:

Update the discussion regarding the *need* for the individual proposed projects, utilizing more accurate, robust, and up-to-date references.

Re-state the Purpose and Need to allow analysis of all reasonable alternatives. The DEISs for Blythe and Palen present separately the purpose and need statements for BLM, Department of Energy (DOE), CEC, and project applicant. The BLM defines its purpose and need narrowly as approval or disapproval of the application for a ROW grant to construct, operate and decommission a solar power generation facility and associated infrastructure. Thus, BLM states that all site alternatives proposed to be located on lands not under the jurisdiction of BLM are considered unreasonable because none would accomplish the need to respond to Palo Verde Solar I ROW request (p. B.2-1) or Palen Solar I ROW request (p. B.2-2). The DOE's purpose and need would be to comply with its mandate under the Energy Policy Act (EPAct) to select eligible projects that meet the goals of the EPAct, and is contingent upon the decision to

² "Secretary Salazar, Senator Reid Announce 'Fast-Track' Initiatives for Solar Energy Development on Western Lands", U.S. Department of Interior, News Release, June 29, 2009.
http://www.blm.gov/wo/st/en/info/newsroom/2009/june/NR_0629_2009.html

enter into negotiation of a loan guarantee. CEC's purpose and need is to certify the construction, modification, and operation of thermal electric power plants 50 MW or larger (p. A-3).

The Purpose and Need for each project should be stated broadly enough to allow for the analysis of a full scope of alternatives, including off-site locations, environmentally preferable on-site alternatives, or other modes of renewable energy generation. The Purpose and Need should focus on the underlying problem(s) to be addressed, such as a lack of capacity to serve an increasing demand for energy, or the need to develop sufficient renewable energy to meet State renewable portfolio standards. Council on Environmental Quality (CEQ) regulations and guidance state that an environmental impact analysis shall include reasonable alternatives not within the jurisdiction of the agency (1502.14c) and “reasonable alternatives include those that are practical or feasible from the technical and economic standpoint and using common sense, rather than simply desirable from the standpoint of the applicant” (NEPA’s 40 Most Asked Questions 2a)³.

Recommendations:

We recommend that the Purpose and Need be stated, in each FEIS, in a manner that is broad enough for analysis and consideration of a full range of reasonable alternatives for addressing the underlying need. Reasonable alternatives may include off-site locations, environmentally preferable on-site alternatives, or other modes of renewable energy generation.

Each FEIS should describe BLM’s options for acting upon an application for a right-of-way grant. For instance, describe the extent of BLM's authority to require the adoption of a “modified” project design or alternate site on BLM land, to deny an application, or to select another ROW application submitted by the same applicant or its corporate owner.

Describe the number of total renewable energy applications that are likely to proceed, any utility purchase agreements, and how generated power will be bought, sold, and used. The DEISs for Blythe and Palen state that the need for the proposed action has its basis in State and Federal orders and laws regarding renewable energy generation. The cumulative scenario describes the large number of renewable energy projects proposed on BLM land in California, Nevada, and Arizona, which are in various stages of environmental review or under construction. Presumably, some of these or other renewable energy facilities will be constructed pursuant to the joint Department of Energy (DOE)/BLM Programmatic Solar DEIS (PEIS) effort as well as the Desert Renewable Energy Conservation Plan (DRECP) process.

Recommendations:

To the extent practicable, each FEIS should discuss how many of the total renewable energy applications received by BLM are likely to proceed pursuant to the joint Department of Energy (DOE)/BLM Programmatic Solar DEIS effort and the Desert Renewable Energy Conservation Plan (DRECP) process, and the level of energy production those applications represent.

³ <http://ceq.hss.doe.gov/nepa/regs/40/1-10.HTM#2>

We recommend that each FEIS include additional information on the utility purchase agreements for the proposed power, and provide a description of how the power would be bought, sold, and used so that the reader can better evaluate the tradeoffs between resource protection and power generation.

Project Siting

Describe the criteria used to identify and compare siting locations. Provide a comparison of life-cycle costs and other regional projects. EPA continues to recommend the identification of potential project site locations that have been previously disturbed or contaminated. For example, the EPA's Re-Powering America initiative works to identify disturbed and contaminated lands appropriate for renewable energy development. For more information on this initiative visit <http://www.epa.gov/oswerepa/>. EPA strongly encourages BLM to promote the siting of renewable energy projects on disturbed, degraded, and contaminated sites before considering siting on large tracts of undisturbed public lands. We also recommend consideration of each proposed renewable energy project in comparison with others proposed in the desert southwest region and their adverse effects on waters of the State, jurisdictional waters of the United States, biological resources, air quality, and visual and cultural resource impacts.

Recommendations:

Each FEIS should describe the criteria used to identify and compare siting locations for renewable energy facilities, and to ascertain whether or not any disturbed sites are available that would be suitable for the proposed project.

We recommend reconsideration of alternatives such as the Private Land and Reduced Acreage Alternatives (for the Blythe and Palen projects) that would avoid and minimize adverse effects on biological, cultural, and visual resources. Fewer adverse impacts would significantly reduce required mitigation security payments and adverse cumulative impacts.

Each FEIS should include a table comparing the life-cycle costs of the different alternatives. Include information on the cost of the land, different project design criteria that would be required, acquisition effort, scheduling effects, and cost of mitigation.

Each FEIS should demonstrate that the approved project site is consistent with the Desert Renewable Energy Conservation Plan for the Mojave and Colorado Desert Regions. At a minimum, the FEIS should describe and commit to a process to ensure approved projects are consistent with the Desert Renewable Energy Conservation Plan.

Climate Change

The DEISs present a brief discussion on climate change but do not include measures to avoid, minimize, or mitigate the effects of climate change on the proposed projects (Appendix Air-1). Scientific evidence supports the concern that continued increases in greenhouse gas emissions

resulting from human activities will contribute to climate change. Effects on weather patterns, sea level, ocean acidification, chemical reaction rates, and precipitation rates can be expected.

Recommendations:

Consider how climate change could affect each proposed project, specifically within sensitive areas, and assess how the impacts of the proposed project could be exacerbated by climate change.

Identify strategies to more effectively monitor for climate change impacts in the surrounding area, such as monitoring groundwater change or special status species.

Briefly discuss the climate change *benefits* of solar energy. We suggest quantifying the greenhouse gas emissions that would be produced by other types of electric generating facilities (solar, geothermal, natural gas, coal-burning, and nuclear) generating comparable amounts of electricity, and compiling and comparing these values.

General Comments

Commit to compliance with LORS and mitigation requirements prior to Project approval. The Palen and Blythe DEISs state that there are technical areas currently undetermined with respect to mitigation of potential impacts and/or conformance with applicable laws, ordinances, regulations and standards (LORS) (Executive Summary, p. 15). These undetermined technical areas include biological resources, cultural resources, land use, soil and water resources, traffic and transportation, and transmission system engineering (Blythe) and air quality, cultural resources, soil and water resources, and transmission system engineering (Palen). Since neither project is already identified in the California Desert Conservation Area Plan, a Plan amendment is required. The amendment process includes a determination that the proposed amendment is in accordance with applicable laws and regulations.

Recommendation:

We recommend the FEISs include a firm commitment to the determination of compliance with LORS and mitigation requirements prior to final decisions on the projects and finalization of the CEC Conditions of Certification.

Complete all surveys and analyses to ascertain impacts to Cultural Resources. Include this information in each FEIS. The DEISs for the Palen and Blythe Projects state that current data have been analyzed; but, due to a lack of data, the impacts to cultural resources are indeterminate.

Recommendation:

EPA recommends that all surveys be completed and all impacts to cultural resources be assessed for the Blythe and Palen projects and that this information be made available in the FEISs.

Describe the reasonably foreseeable development and population growth as a result of proposed projects. The Blythe and Palen projects are located within approximately 40 miles of one another and the region anticipates an influx of hundreds of workers. Blythe Project construction will require an average of 604 workers over the 5 year construction period with a peak at approximately 1,004 workers in spring 2012 (Executive Summary p. 3). The Palen Project construction will demand an average of 566 employees over the 3 year construction period and peak at approximately 1,140 workers, also in spring 2012 (Executive Summary p. 3). The DEISs for both projects state that construction workers would be from the local counties of La Paz, AZ, Riverside, CA, and San Bernardino, CA.

Recommendation:

We recommend that the FEISs for both projects contain analyses of the impacts of workers to the areas of Desert Center and Blythe, CA. The documents should provide an estimate of the amount of growth, likely location(s), the impacts on municipal services, and the biological and environmental resources at risk. The documents should also include a discussion of potential transit options (including formal Rideshare, Carpooling, and Bussing) to transport workers from the nearest population centers to the remote project sites as well as other measures to facilitate accessibility to the job sites and reduce greenhouse gas emissions resulting from worker transportation.