UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
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JUL 12 2010

John Kalish
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Bureau of Land Management
1201 Bird Center Drive
Palm Springs, California 92262

Subject: Draft Environmental Impact Statement for the NextEra Energy Resources Genesis Solar Energy Project, Riverside County, California (CEQ #20100115)

Dear Mr. Kalish:

The U.S. Environmental Protection Agency (EPA) has reviewed the Draft Environmental Impact Statement (DEIS) for the NextEra Energy Resources Genesis Solar Energy Project (Project). Our review and comments are provided pursuant to the National Environmental Policy Act (NEPA), the Council on Environmental Quality (CEQ) Regulations (40 CFR Parts 1500-1508), and our NEPA review authority under Section 309 of the Clean Air Act (CAA).

EPA supports increasing the development of renewable energy resources in an expeditious and well planned manner. Using renewable energy resources such as solar power can help the nation meet its energy requirements while reducing greenhouse gas emissions. 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 (BLM) 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 (Section 1603). Twenty-eight of these projects are located in our Region, of which fourteen are located in California. 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 locations, as well as alternate sites, such as inactive 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 continue to 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 November 30, 2009, EPA provided extensive formal scoping comments for the Project which included a variety of detailed recommendations regarding purpose and need, range of alternatives, water resources, and other resource areas of concern. Based on our review of the DEIS, we have rated the document as *Environmental Objections – Insufficient Information* (EO-2). Please see the enclosed "Summary of EPA Rating Definitions."

The primary basis for EPA's rating is that the technology for the Project includes wet cooling, and the extraction of over 500 million gallons of groundwater annually to support it, while similar proposed projects within the vicinity propose less-impactful, available Dry Cooling technology (e.g. the Blythe and Palen Solar Power Projects). EPA continues to recommend technologies maximizing water conservation in desert environments as a key criterion for renewable energy projects. EPA supports the Dry Cooling Alternative evaluated in the DEIS, which would substantially reduce groundwater extraction, as well as impacts to air quality and species. In addition, we strongly encourage BLM to consider a reduced-footprint alternative, including the Reduce Acreage Alternative or, at a minimum, an alternative that protects the 23 acres of critical desert tortoise habitat as well as the 65 acres of sand dune and sand drift over playa habitats. EPA believes that there are cases where effective mitigation for impacts on rare or unusual habitat can only be obtained by avoiding impacts. Fewer adverse impacts would significantly reduce required mitigation security payments and adverse cumulative impacts.

In the enclosed detailed comments, we also provide specific recommendations regarding analyses and documentation needed to assess potential significant impacts from the proposed Project. Specifically, EPA is concerned with the: 1) mitigation for groundwater and ephemeral wash impacts, 2) mitigation for impacts to biological resources and special status species, 3) analysis of cumulative impacts to air quality, 4) current justification for the Project purpose, need and range of alternatives, 5) project siting, and 6) impacts to cultural resources.

EPA appreciates the opportunity to provide input on this Project 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 FEIS is released for public review, please send two hard copies and two CDs to the address above (Mail Code: CED-2). If you have any questions, please contact me at (415) 972-3843 or contact Tom Plenys, the lead reviewer for this Project. Tom can be reached at (415) 972-3238 or plenys.thomas@epa.gov.

Sincerely,

Cornell Dennis

FOR

Enrique Manzanilla, Director
Communities and Ecosystems Division

Enclosures: Summary of EPA Rating Definitions
EPA's Detailed Comments

cc: Jim Abbott, Bureau of Land Management, California State Office
Michael Picker, California Governor's Office
Allison Schaffer, Bureau of Land Management, Project Manager
Shannon Pankratz, US Army Corps of Engineers
Tannika Engelhard, United States Fish and Wildlife Service
Becky Jones, California Department of Fish and Game
Mike Monasmith, California Energy Commission

SUMMARY OF EPA RATING DEFINITIONS*

This rating system was developed as a means to summarize the U.S. Environmental Protection Agency's (EPA) level of concern with a proposed action. The ratings are a combination of alphabetical categories for evaluation of the environmental impacts of the proposal and numerical categories for evaluation of the adequacy of the Environmental Impact Statement (EIS).

ENVIRONMENTAL IMPACT OF THE ACTION

"LO" (Lack of Objections)

The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

"EC" (Environmental Concerns)

The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact. EPA would like to work with the lead agency to reduce these impacts.

"EO" (Environmental Objections)

The EPA review has identified significant environmental impacts that should be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

"EU" (Environmentally Unsatisfactory)

The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potentially unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the Council on Environmental Quality (CEQ).

ADEQUACY OF THE IMPACT STATEMENT

"Category 1" (Adequate)

EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

"Category 2" (Insufficient Information)

The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analysed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

"Category 3" (Inadequate)

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analysed in the draft EIS, which should be analysed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

*From EPA Manual 1640, Policy and Procedures for the Review of Federal Actions Impacting the Environment.

U.S. EPA DETAILED COMMENTS ON THE DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR THE NEXTERA ENERGY RESOURCES GENESIS SOLAR ENERGY PROJECT, RIVERSIDE COUNTY, CALIFORNIA, JULY 8, 2010

Project Description

NextEra, LLC (NextEra) has requested a right-of-way (ROW) authorization to develop an 1,890-acre, 250-megawatt (MW) solar generation facility including a substation, administration, operations and maintenance facilities, evaporation ponds, surface storm water control facilities, and temporary construction areas (Project). The Project area is located approximately 25 miles west of the city of Blythe, California and north of Ford Dry Lake and Interstate 10 on lands managed by the Bureau of Land Management (BLM). The Project area is located in an undeveloped area of the Sonoran Desert that has been used for grazing and off-highway vehicle (OHV) use in the past.

NextEra proposes to construct two, independent, concentrated solar electric generating facilities with a combined electrical output of 250 MW. Electrical power would be produced using steam turbine generators fed from solar steam generators. The solar steam generators would receive heated transfer fluid from arrays of parabolic solar troughs. The Project would use a wet cooling tower for power plant cooling. Water for cooling tower makeup, process water makeup, and other industrial uses such as mirror washing would be supplied from on-site groundwater wells. Project cooling wastewater would be piped to lined, on-site evaporation ponds. The Project would tie into a 230 kilovolt (kV) on-site switchyard and 500 kV transmission line with an interconnection to the Colorado River Substation.

Water Resources

Dry Cooling

To maximize environmental acceptability, EPA continues to recommend technologies which conserve water as a key criterion for renewable energy projects currently under review by our agency. The proposed use of wet cooling would result in groundwater extraction in the Sonoran Desert of over 500 million gallons of water annually (1,644 acre-feet per year). The Project does not propose the use of reclaimed water nor the recycling of water.

The proposed Project's use of wet cooling is inconsistent with the recommendations of the "Best Management Practices and Guidance Manual: Desert Renewable Energy Projects," which was jointly developed by the Bureau of Land Management (BLM), the U.S. Fish and Wildlife Service (USFWS), the California Energy Commission, and others[1]. That manual states, "[t]he following critical actions provide guidance on how to address the major significant issues that usually arise when conducting environmental reviews... 2) The project will not use fresh groundwater or surface water for power plant cooling."

[1] Renewable Energy Action Team (California Energy Commission, California Department of Fish and Game, U.S. Department of Interior Bureau of Land Management and Fish and Wildlife Service). CEC-700-2009-016SD-REV

Under the Dry Cooling Alternative, water use would be reduced by over 90% to 132 acre-feet per year (at pg. C.2-157). Additionally, dry cooling provides environmental benefits beyond water conservation. Dry cooling reduces emissions of particulate matter, both 10 micron (PM_{10}) and 2.5 micron ($PM_{2.5}$), due to the elimination of cooling towers. The Dry Cooling Alternative reduces annual PM_{10} emissions by 19% (3.8 tons) and $PM_{2.5}$ emissions by 53% (3.8 tons) (at pg. C.1-19 and C.1-33). Additionally, the six, eight-acre evaporation ponds that would collect blowdown water from the cooling towers pose several threats to wildlife. The ponds are a danger to the birds attracted by the water due to the toxic concentration of salt and possibly other constituents within the groundwater (at pg. C.2-95). The ponds could also attract ravens which could increase predation rates on juvenile desert tortoise in adjacent habitats. A combination of dry cooling with zero liquid discharge (ZLD) would eliminate impacts from wildlife exposure to the evaporation ponds and is recommended by staff, California Department of Fish and Game and the US Fish and Wildlife Service (USFWS) (at pg. C.2-95).

We also point out the limited use of wet cooling in similar large scale solar energy projects. Of the 21 solar energy projects within Region 9 that have appeared in the Federal Register recently (as a notice of intent to prepare an Environmental Impact Statement), only four projects continue to propose wet cooling. Of those projects, three are sponsored by a subsidiary of the same corporate entity, FPL Energy. NextEra concludes that the use of dry cooling will decrease the project output, which will render the Project economically unsound or noncompetitive (at pg. B.2-18). However, as the DEIS indicates, the Final Staff Assessment for the Beacon Solar Energy Project found that dry cooling was economically feasible because it surpassed the benchmark internal rate of return established for economic feasibility. Further, three solar thermal projects (Blythe, Palen and Desert Sunlight Solar Projects) propose the use of dry cooling in the same general area with a similar climate as the proposed Project, and have similar if not identical efficiency losses from using dry cooling (at pg. B.2-18).

Lastly, during our recent meeting with BLM's California and Nevada State Directors on June 30, 2010, Ron Wenker indicated he had sent a letter to renewable energy applicants in Nevada to eliminate wet cooling as an option for projects in the Amargosa Valley. EPA supports this guidance and request that it apply to all applications on BLM's lands throughout the Desert Southwest.

> *Recommendations:*
> EPA strongly recommends that BLM not approve the use of wet cooling. The Dry Cooling Alternative would reduce water use from 1,644 acre-feet per year to 132 acre-feet per year, and reduce the projects impacts on air quality and birds.

Groundwater

BLM has proposed monitoring future changes to groundwater levels and water quality caused by the proposed Project and other pumping in the Basin (Soil & Water – 4 and 20). Measures are also proposed to mitigate potential future impacts to neighboring well owners (Soil & Water – 5) and potential impacts to the Colorado River from pumping (Soil & Water –15). While the Soil

and Water Resources section references these monitoring and mitigation measures, the DEIS does not include a discussion of the effectiveness of the monitoring and the impacts of the mitigation. The FEIS should further describe groundwater mitigation and detail its effectiveness in minimizing groundwater withdrawal.

The DEIS also acknowledges that, due to the high volume of projects in the region, cumulative impacts to groundwater may place the Chuckawalla Valley Groundwater Basin in overdraft condition. Overdraft is described as the amount of water withdrawn exceeding the amount of water that recharges the basin (at pg. C.9-71). Cumulative impacts from reasonably foreseeable projects as well as other unidentified renewable energy projects in the I-10 corridor are dismissed due to the total recoverable groundwater in storage (estimated to be as much as 15,000,000 acre feet) (at pg. C.9-72). The Soil and Water section does not provide a reference for this groundwater storage figure and does not discuss other estimates for the storage amount which may be lower (at pg. C.9-72).

Despite the amount of water in basin storage which exceeds the potential cumulative overdraft during the 30 year Project life, the DEIS indicates that even modest drawdowns of 0.3 feet can adversely affect vegetation if groundwater drops below the effective rooting levels sustained over time so that plants are unable to recover (at pg. C.2-4 and C.2-98). Modeling results presented in the DEIS suggest that during the life of all the reasonably foreseeable projects, groundwater level declines of five feet or more would be located at a distance of approximately 4 miles from the Project site and up to one foot or more up to 8 miles from the proposed production wells. A drop in groundwater levels could also potentially impact neighboring wells, lower the water table, and impact groundwater dependent vegetation and microfill woodlands (at pg. C.2-20).

The DEIS also indicates that operations for all reasonably foreseeable projects could result in indirect impacts to the Palo Verde Mesa Groundwater Basin by inducing underflow from the Colorado River to the Palo Verde Mesa Groundwater Basin. Such basin balance analyses for the cumulative effects to the Palo Verde Mesa Basin are not provided in the DEIS.

Recommendations:

Impacts to groundwater in the Chuckawalla Valley Groundwater Basin and the Palo Verde Mesa Groundwater Basin should be minimized as much as possible. In addition to adopting the Dry Cooling Alternative, this may involve altering project design, implementing recycled water techniques, as well as considering reduced acreage alternatives. The FEIS should describe the effectiveness of, and commitments to, the mitigation and monitoring plans described in the Mitigation Measures Section C.9 Soil & Water - 3, 4, 5, 15, 18 and 20.

The FEIS should also further describe the estimation of the impacts from withdrawing groundwater that is recharged by the Colorado River (at pg. C.9-2) 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.

The FEIS should discuss and estimate the additional impact from other renewable energy projects in the I-10 corridor that may result from its selection as an area for further renewable energy development (at pg. C.9-116).

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

The FEIS should address what measures would be taken, and by whom, should groundwater resources in the basins become overextended to the point that further curtailment is necessary due to, for example, additional growth, the influx of large-scale solar projects, drought, and the utilization of existing or pending water rights in the basin.

The FEIS should describe the reasonably foreseeable future land use and associated impacts that will result from the additional power supply. The document should provide an estimate of the amount of growth, likely location, and the biological and environmental resources at risk.

Reclaimed Water

The DEIS considered the use of reclaimed water (treated wastewater), but eliminated the option from detailed evaluation. EPA seeks further clarification and discussion of this, particularly in light of the viability of reclaimed water uses described in the Alternatives Evaluated section (at pg. B.2-57). These sources should also be discussed in light of the smaller amount of water necessary for the Dry Cooling Alternative. A subsidiary of FPL Energy has sponsored the Beacon Solar Energy Project on BLM land in California. The California Energy Commission's Final Staff Assessment[2] evaluates dry cooling and two water sources for wet cooling considered feasible. The water sources are treated wastewater from 15 and 40 miles away. Both treated wastewater sources have similar costs. In one alternative the solar energy facility will pay the cost of a 40 mile pipeline, in the other, the facility will pay the cost of a 15 mile pipeline and the cost to connect residents to the treatment plant (to generate a sufficient quantity of wastewater).

Recommendation:
The FEIS should evaluate potential sources of reclaimed water from all wastewater treatment plants in at least a 40-mile radius.

[2] Final Staff Assessment, Beacon Solar Energy Project, Application for Certification (08-AFC-2) Kern County, California Energy Commission (http://www.energy.ca.gov/2009publications/CEC-700-2009-005/CEC-700-2009-005-FSA.PDF)

Floodplains, Drainages and Ephemeral Washes

The Project would directly impact 91 acres of state jurisdictional waters including 16 acres of micro phyllous riparian vegetation, eliminating the functions of this network of ephemeral drainages (at pg. C.2-2).

Natural washes perform a diversity of hydrologic, biochemical and geochemical functions that directly affect the integrity and functional condition of higher-order waters downstream. Healthy ephemeral waters with characteristic plant communities control rates of sediment deposition and dissipate the energy associated with flood flows. Ephemeral washes also provide habitat for breeding, shelter, foraging, and movement of wildlife. Many plant populations are dependent on these aquatic ecosystems and adapted to their unique conditions. The potential damage that could result from disturbance of flat-bottomed washes includes alterations to the hydrological functions that natural channels provide in arid ecosystems: adequate capacity for flood control, energy dissipation, and sediment movement, as well as impacts to valuable habitat for desert species.

The DEIS states that off-site storm water flows impacting the Project site are from a large watershed area to the north of the site which covers approximately 91,627 acres. The upstream extents of the contributing watershed extend into the Palen Mountains (at pg. C.9-32). The proposed Project is located on an alluvial fan where flash flooding and mass erosion could impact the Project (at pg. C.9-115). As a result, natural drainage across the site is episodic, shallow, and occurs over a broad area primarily as sheet flow or in shallow washes (at pg. B.1-16). All existing washes and floodplains within the Project boundary will be completely eliminated by the grading of approximately 1,800 acres to provide the flat, uniform and vegetation-free topography required for the construction and operation of the solar mirror array (at pg. C.9-56).

The applicant proposes to divert flows downstream of the site utilizing existing drainage paths. Three engineered channels and associated diversion berms across the Project site with energy dissipaters at the end would restore sheet flow down slope of the Project (at pg. B.1-16 and pg. C.9-55). Onsite flows would be discharged directly into detention basins via a series of smaller internal swales and channels (at pg. C.9-55). According to staff analysis in the DEIS, the applicant's drainage plans do not provide sufficient information to establish the post-Project flooding conditions or to determine the potential impacts to vegetation downstream (at pg. C.2-66).

> *Recommendations:*
> Demonstrate that downstream flows will not be disrupted due to proposed changes to natural washes, the excavation of large amounts of sediment or as a result of major storm events.
>
> Discuss the feasibility of utilizing existing natural 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 the Project in the FEIS, to facilitate assessment of impacts and effectiveness of mitigation measures.

The FEIS should clarify the flow path of exterior storm water flow, and summarize modeled impacts (hydraulics of flow, velocity, sediment transport, sediment delivery and potential stream channel changes) of diverting drainages and floodplains.

The Project proposes to minimize and offset the direct and indirect impacts to state waters via acquiring and enhancing 132 acres of ephemeral dry washes within the Chuckwalla Valley watershed. In light of the multiple applications for renewable energy projects in the near vicinity, availability of such compensation lands should be discussed, including a comparison of the quality and functions of the desert washes to those lost on the Project site.

Recommendation:
Discuss the availability of sufficient compensation lands to replace desert wash functions lost on the Project site.

As the DEIS indicates, the Concept Drainage Study and the Draft Channel Maintenance Plan do not appear to adequately address the issue of the collection of offsite flows or the mitigation of erosion to offsite areas caused by the presence and operation of the proposed collector and conveyance channels. We also have concerns that reliance on substantial maintenance will reduce effectiveness of the mitigation, and question whether the main goals of the channel maintenance program will be met. If such substantial maintenance is needed, the implementation mechanism, accountability, enforcement, and funding of such a program should be identified. In general, the viability of this mitigation is not discussed and the mitigation specifics are deferred to a later approval process. Additionally, the DEIS does not clarify discharge locations for any sediment or detention basins.

Recommendations:
The FEIS should fully describe how offsite flows will be collected and how erosion to offsite areas will be mitigated. Describe the specifics of the needed maintenance program necessary to prevent significant erosion and offsite damage and flooding, including the implementation mechanism, responsible parties, enforcement, and funding sources.

The FEIS should describe the Best Management Practices to be used to ensure that discharges from the project site match pre-development conditions. The FEIS should also define the term "peak discharges," explain procedures for non-peak discharges, describe the downstream impacts of flow changes, and identify discharge points and flow controls for the sediment/retention basins' water.

The FEIS should clarify discharge locations for any detention or sediment basins and describe the impacts of excess water provided to some drainages and reduced or no discharges to other drainages.

The DEIS indicates that the proposed Project does not comply with the State of California's water policies including the proposed method of wastewater discharge which is inconsistent with the Energy Commission's policy that encourages the use of Zero Liquid Discharge (ZLD) systems that are designed to eliminate wastewater discharge and inherently conserve water (at pg. C.9-88). While mitigation measure Soil and Water – 18 is intended to address inconsistencies with state water policies, the measure as presented in the DEIS does not contain any specifics.

> *Recommendations:*
> The FEIS should fully describe compliance with state water policies and incorporate specific measures as part of measure Soil and Water – 18.
>
> The FEIS should discuss how the Dry Cooling Alternative combined with Zero Liquid Discharge (ZLD) systems may assist the Project in achieving consistency with California's water policies.

Fencing

The FEIS should 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. 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 article[3] 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.

> *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.

Jurisdictional Determination

At the time of publication of this DEIS, the U.S. Army Corps of Engineers had not yet made a jurisdictional determination for this Project. We understand this has been completed and the findings should be discussed in the FEIS. Measures to reduce impacts to any waters of the United States should be included in the FEIS, as well as measures to mitigate impacts that cannot be reduced or avoided.

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[3] 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,

Biological Resources

Endangered Species and Other Species of Concern

The site supports a diversity of mammals, birds, and reptiles, including some special status wildlife species. Grading on the Project site would result in direct impacts to special status animal species and special status plant species through the removal of vegetation that provides cover, foraging, and breeding habitat for wildlife (at pg. C.2-61 to C.2-65). As the DEIS states, severe damage involving vegetation removal and soil disturbance can take from 50 to 300 years for partial recovery; complete ecosystem recovery may require over 3,000 years (at pg. C.2-61). We understand that the Biological Opinion for this Project is not scheduled for completion until after the Final EIS is published. The Biological Opinion will play an important role in informing the decision on which alternative to approve and what commitments, terms, and conditions must accompany that approval.

Approximately 1,786 acres of desert tortoise habitat (including 23 acres of critical habitat) would be permanently impacted by the proposed Project. Long-term impacts may occur as a result of permanent loss of habitat, increased predation, and habitat fragmentation. Additionally, 66 acres of Mojave fringe-toed lizard (MFTL) habitat would be permanently lost in addition to 453 acres of indirect impacts to sand dunes that would result from disruption to the sand transport corridor on site (at pg. C.2-62). The MFTL is restricted to Aeolian (wind-blown) sand habitats. The Project site contains stabilized and partially stabilized sand dune habitat (28 acres) and playa/sand drift over playa habitat (37 acres) (at pg. C.2-35).

EPA appreciates the extensive discussion on the impacts to MFTL and desert tortoise as well as the proposed mitigation measures and compensatory mitigation. The Reduced Acreage Alternative would roughly reduce impacts to desert tortoise habitat by 50% and have substantially less impact on the MFTL. While EPA supports consideration of this alternative, we also suggest evaluation of a "Resource Avoidance" alternative in the FEIS which modifies the proposed 1,800 acre Project footprint by protecting, at a minimum, the 23 acres of critical desert tortoise habitat as well as the 65 acres of sand dune habitat and sand drift over playa habitats. This alternative may provide an opportunity to balance species protection with power production and allow sufficient acreage to offset any potential efficiency losses due to dry cooling. EPA believes that there are cases where effective mitigation for impacts on rare or unusual habitat can only be obtained by avoiding impacts. Rarely, if ever, is restoration or compensation an adequate mitigation for the loss of these habitats. In such cases, mitigation occurs by siting projects away from habitats of concern[4].

EPA continues to recommend that proposed designs for renewable energy projects should avoid and minimize impacts to all federally threatened and endangered species, as well as BLM species of concern and State species of concern. In addition to desert tortoise and MFTL, the site of the proposed Project includes potential breeding and foraging habitat for sensitive species such as the American badger, desert kit fox, Western burrowing owl, golden eagle, among others. Any

[4] *Habitat Evaluation: Guidance for the Review of Environmental Impact Assessment Documents* (January, 1993), p. 88. Available: http://www.epa.gov/compliance/resources/policies/nepa/habitat-evaluation-pg.pdf

mitigation measures that result from consultation with the USFWS to protect sensitive biological resources should be included in the FEIS and, ultimately, the ROD. The FEIS should also clearly articulate under which alternatives sensitive biological resources, including the desert tortoise, MFTL and Western burrowing owl, would be least impacted and to what extent impacts can be mitigated.

Recommendations:
We urge BLM to coordinate with USFWS on the timing of FEIS and the Biological Opinion. The FEIS should provide an update on the consultation process, and we strongly recommend including the Biological Opinion as an appendix.

Mitigation measures that result from consultation with the US Fish and Wildlife Service to protect sensitive biological resources, including desert tortoise and MFTL should be included in the FEIS and, ultimately, the ROD.

We recommend consideration of the Reduced Acreage Alternative that would reduce impacts to desert tortoise by 50% and have substantially fewer impacts to the MFTL. The FEIS should also evaluate a "Resource Avoidance" alternative in the FEIS which modifies the proposed 1,800 acre Project footprint by protecting, at a minimum, the 23 acres of critical desert tortoise habitat as well as the 65 acres of sand dune habitat and sand drift over playa habitats. Present environmental impacts from all alternatives considered in comparative form, sharply defining the issues and providing a clear basis for choice among options for the decision maker and the public (40 CFR 1502.14).

Mitigation Commitments and Funding

The Biological Resources Table 6 (at pg. C.2-65) summarizes the recommended mitigation acreage for the proposed Project, including 1,878 acres for direct impacts to desert tortoise, 424 acres for direct and indirect impacts to the Mojave fringe-toed lizard and 132 acres for direct impacts to State waters. The Applicant proposes to achieve a 3:1 compensation ratio for direct impacts to microphyllous riparian vegetation and a 1:1 ratio for unvegetated ephemeral swales. 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) (at pg. C.2-75).

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

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 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 FEIS, mitigation plans for unavoidable impacts to waters of the State and biological resources such as desert tortoise, desert kit fox, burrowing owls, Mojave fringe toed lizard, golden eagles, and their habitats. Such mitigation plans are described briefly in the sections BIO-1 to 27 in the DEIS; further details should be provided in the FEIS. Specifically, if the applicant is to acquire compensation lands, the location(s) and management plans for these lands should be fully disclosed.

Analyze the environmental and economic trade-offs of acquiring the off-site lands versus reducing the size of on-site alternatives for equivalent protection.

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

Air Quality

Mitigations

EPA commends BLM for incorporating fugitive dust control measures to limit PM_{10} impacts, and mitigation measures to address exhaust emissions (at pg. C.1-22). We also were pleased at the inclusion of mitigation measure AQ-SC2 which would require the development of an Air Quality Construction Mitigation Plan (AQCMP) as well as engine requirements for diesel equipment specified by mitigation measure AQ-SC5.

In light of the number of renewable energy projects to be constructed in the area as well as staff's conclusion that fugitive dust emissions and the results of the air dispersion modeling were underestimated (at pg. C.1-17), EPA supports incorporating mitigation strategies to reduce or minimize fugitive dust emissions as well as more stringent emission controls for PM and ozone precursors for construction-related activity. However, we also support minimizing disturbance to the natural landscape as much as possible, so that measures to reduce fugitive dust are not required to mitigate land disturbance from the Project. All applicable state and local requirements and the additional and/or revised measures listed below should be included in the FEIS in order to reduce impacts associated with PM, ozone precursors, and toxic emissions from construction-related activities:

Fugitive Dust Source Controls:

- Reduce land disturbance activities as much as possible so that natural, stable soil conditions remain.

- Stabilize open storage piles and disturbed areas by covering and/or applying water or chemical/organic dust palliative where appropriate. This applies to both inactive and active sites, during workdays, weekends, holidays, and windy conditions.
- Install wind fencing, and phase grading operations, where appropriate, and operate water trucks for stabilization of surfaces under windy conditions.
- When hauling material and operating non-earthmoving equipment, prevent spillage, and limit speeds to 15 miles per hour (mph) or lower. Limit speed of earth-moving equipment to 10 mph, 5 mph on unpaved roads and unsealed site areas. *(Note the discrepancy between vehicular speeds on pages C.1-22 and C.1-27 in the DEIS).*

Mobile and Stationary Source Controls:

- Reduce use, trips, and unnecessary idling from heavy equipment.
- Maintain and tune engines per manufacturer's specifications to perform at California Air Resources Board (CARB) and/or EPA certification, where applicable, levels and to perform at verified standards applicable to retrofit technologies. Employ periodic, unscheduled inspections to limit unnecessary idling and to ensure that construction equipment is properly maintained, tuned, and modified consistent with established specifications. CARB has a number of mobile source anti-idling requirements. See their website at: http://www.arb.ca.gov/msprog/truck-idling/truck-idling.htm
- Prohibit any tampering with engines and require continuing adherence to manufacturer's recommendations
- If practicable, lease new, clean equipment meeting the most stringent of applicable Federal or State Standards.
- Utilize EPA-registered particulate traps and other appropriate controls where suitable, to reduce emissions of diesel particulate matter and other pollutants at the construction site.

Administrative controls:

- Identify all commitments to reduce construction emissions and incorporate these reductions into the air quality analysis to reflect additional air quality improvements that would result from adopting specific air quality measures.
- Identify where implementation of mitigation measures is rejected based on economic infeasibility.
- Prepare an inventory of all equipment prior to construction, and identify the suitability of add-on emission controls for each piece of equipment before groundbreaking. (Suitability of control devices is based on: whether there is reduced normal availability of the construction equipment due to increased downtime and/or power output, whether there may be significant damage caused to the construction equipment engine, or whether there may be a significant risk to nearby workers or the public.) Meet CARB diesel fuel requirement for off-road and on-highway (i.e., 15 ppm), and where appropriate use alternative fuels such as natural gas and electric.
- Develop a construction traffic and parking management plan that minimizes traffic interference and maintains traffic flow.
- Identify sensitive receptors in the project area, such as children, elderly, and infirm, and specify the means by which you will minimize impacts to these populations. For

example, locate construction equipment and staging zones away from sensitive receptors and fresh air intakes to buildings and air conditioners.

Cumulative Analysis

The methodology used for the cumulative impacts air quality analysis appears to be quite robust; however, the results are not presented nor described. The methodology describes consideration of projects in close proximity to the proposed Project, but limits the scope of the cumulative impact analysis to only those projects occurring within 6 miles of the proposed Project site. The scope of the cumulative impact analysis is limited to focus on 'localized' cumulative impacts; however, in an area in nonattainment for multiple criteria pollutants, including PM_{10}, the cumulative impacts analysis should cast a wider net. Without further information about projects in the region, it is difficult to conduct a thorough cumulative impacts analysis. The FEIS should include a more extensive analysis that defines the parameters of the analysis and the reasons for the establishment of those parameters.

Recommendations:
Update the list of reasonably foreseeable projects used in the air quality analysis to include all projects that may have impacts that may cumulatively affect the region's ability to continue achieving air quality goals.

The FEIS should include a more extensive cumulative air impacts analysis as discussed above, and specify the parameters of the analysis and the reasons for the establishment of those parameters. If additional mitigation measures would be needed, or if the Project would affect the ability of other foreseeable projects to be permitted, the FEIS should discuss this.

Update Air Quality Standards

The Federal Standards noted in Air Quality Table 2 (at pg.C.1-8) should be updated as recommended below.

Recommendations:
Sulfur Dioxide 1 hour standard should be corrected to read 0.075 ppm. Also, the Annual and 24 hour standards were revoked.

Lead standard should be updated to reflect a 3 month rolling average of 0.15 ug/m3

Climate Change

EPA commends BLM for including a substantive discussion on greenhouse gases as well as estimates of carbon dioxide emissions from the construction of the proposed Project. 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. These

changes may affect the proposed Project as well as the scope and intensity of impacts resulting from the proposed Project. The DEIS does not include measures to avoid, minimize, nor mitigate the effects of climate change on the proposed Project.

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

Identify specific mitigation measures needed to 1) protect the Project from the effects of climate change, 2) reduce the Project's anticipated adverse air quality effects, and/or 3) promote pollution prevention or environmental stewardship.

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

Quantify and disclose the anticipated 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.

Purpose, Need and Reasonable Range of Alternatives

EPA believes the discussion in the DEIS regarding the purpose and need for the Project should be expanded. As we indicated in our scoping comments, the *purpose* of the proposed action is typically the specific objectives of the activity, while the *need* for the proposed action may be to eliminate a broader underlying problem or take advantage of an opportunity. The Purpose and Need for a project should be broad enough to spur identification of the full breadth of a reasonable range of alternatives, regardless of what the future findings of an alternatives analysis may be.

While we commend BLM for including a Reduced Acreage Alternative and the Dry Cooling Alternative, for NEPA purposes, the DEIS eliminates all off-site and alternative technology alternatives from consideration. Elimination of such alternatives is, in part, influenced by the BLM's narrowly defined Purpose and Need. According to the DEIS, BLM's Purpose and Need for the proposed action is to approve, approve with modifications, or deny issuance of a Right-of-Way (ROW) grant for the Project (at pg. B.2-10). EPA understands the rationale in considering the "federal" Purpose and Need for the Project; however, EPA recommends that the FEIS further characterize the "project" Purpose and Need as part of BLM's statement. BLM's purpose statement should be broad enough to allow for a reasonable range of alternatives, including off-site alternatives such as the Gabrych Alternative. The Gabrych Alternative, evaluated by the California Energy Commission under the California Environmental Quality Act (CEQA) in the DEIS, was identified by the Renewable Energy Transmission Initiative (RETI) Final Phase 2a Report as disturbed land that would support renewable energy development (at pg. B.2-23). The Gabrych Alternative is preferred over the proposed Project for six resource

elements including biological, cultural, soils and water and recreation and wilderness (at pg. B.2-52).

Recommendations:
The FEIS should reflect a broader purpose and need statement that is broad enough for analysis and consideration of a full range of reasonable alternatives for addressing the underlying need including off-site alternatives, such as the Gabrych Alternative or other environmentally preferable off-site alternatives, and other modes of renewable energy generation.

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.

Include supporting documentation and additional discussion on BLM's rationale for the elimination of off-site alternatives from further consideration under NEPA.

As indicated in our scoping comments, the FEIS should discuss the proposed Project in the context of the larger energy market that this Project would serve. While the DEIS appears to indicate the need for the proposed Project has its basis in Federal orders and laws that require government agencies to evaluate energy generation projects and facilitate the development of renewable energy sources, EPA does not believe the current Purpose and Need section fully describes the specific Federal, State, and individual utility power provider renewable energy targets, timelines, and underlying needs to which BLM is responding. EPA believes this context is imperative for decision makers and the public to have, in light of the large number of renewable energy projects moving forward.

Presumably, some number of renewable energy facilities will be constructed pursuant to the joint Department of Energy (DOE)/BLM Programmatic Solar DEIS effort as well as the Desert Renewable Energy Conservation Plan (DRECP) process. It would be helpful to know the likely locations, construction timing, and generation capacities of such facilities relative to the proposed Project.

Recommendations:
Fully describe the specific Federal and State renewable energy targets, timelines, and underlying needs to which BLM is responding, and explain how the Project meets those needs in the context of the many renewable energy project applications in the Desert Southwest and California. Update the discussion regarding the *need* for the individual proposed projects, utilizing more accurate, robust, and up-to-date references.

To the extent practicable, the 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.

Further describe the utility purchases of 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

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:

- 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.

  Incorporate alternatives such as the Gabrych Alternative and a "Resource Avoidance" alternative that would avoid and minimize adverse effects on biological, aquatic and cultural resources. Fewer adverse impacts would significantly reduce required mitigation security payments and adverse cumulative impacts.

  The 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.

  The 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.

Cultural Resources and Coordination with Tribal Governments

The Project could have direct impacts on 14 historically significant archaeological resources including 8 prehistoric to historic period Native American archaeological sites (at pg. C.3-1) According to the DEIS, BLM is presently in the process of initiating formal consultation with the ACHP, the State Historic Preservation Officer (SHPO), California Energy Commission staff,

Native American groups, and the public at large on the development of a Programmatic Agreement (PA) for the proposed Project (at pg. C.3-18). The DEIS indicates that CUL-1 would require compliance with the PA under Section 106 of National Historic Preservation Act (NHPA).

Executive Order 13175, *Consultation and Coordination with Indian Tribal Governments* (November 6, 2000), was issued in order to establish regular and meaningful consultation and collaboration with tribal officials in the development of federal policies that have tribal implications, and to strengthen the United States government-to-government relationships with Indian tribes.

> *Recommendation:*
> The FEIS should discuss how the concerns raised by Tribes were addressed and resolved, provide an update on the status of the Programmatic Agreement and whether coordination with Tribes is occurring, and indicate whether the Tribes are in agreement that the Programmatic Agreement will reduce impacts to prehistoric and sacred sites to less than significant. We recommend that these measures be adopted in the Record of Decision (ROD).

Consultation for tribal cultural resources is required under Section 106 of NHPA. Section 106 of the NHPA requires a federal agency, upon determining that activities under its control could affect historic properties, consult with the appropriate State Historic Preservation Officer/Tribal Historic Preservation Officer (SHPO/THPO). Under NEPA, any impacts to tribal, cultural, or other treaty resources must be discussed and mitigated. Section 106 of the NHPA requires that Federal agencies consider the effects of their actions on cultural resources, following regulation in 36 CFR 800.

Executive Order 13007, *Indian Sacred Sites* (May 24, 1996), requires federal land managing agencies to accommodate access to, and ceremonial use of, Indian sacred sites by Indian Religious practitioners, and to avoid adversely affecting the physical integrity, accessibility, or use of sacred sites. It is important to note that a sacred site may not meet the National Register criteria for a historic property and that, conversely, a historic property may not meet the criteria for a sacred site.

> *Recommendation:*
> The FEIS should address Executive Order 13007, distinguish it from Section 106 of the NHPA, and discuss how the BLM will avoid adversely affecting the physical integrity, accessibility, or use of sacred sites, if they exist.

<u>Socio-Economic Analysis</u>

The Blythe, Palen, and Genesis projects are located within approximately 40 miles of one another and the region anticipates an influx of hundreds of workers. Combined, construction of these three projects will require an average of 1,816 workers over the three to five year

construction periods. Construction workers may come from the local counties of La Paz, AZ, Riverside, CA, and San Bernardino, CA.

Recommendation:
We recommend that the FEIS for all 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 FEIS should 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.