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

JUL 12 2010

Roxie Trost, Field Manager
Barstow Field Office, Bureau of Land Management
2601 Barstow Road
Barstow, CA 92311

Subject: Calico Solar Project Staff Assessment and Draft Environmental Impact Statement (EIS), San Bernardino County, California [CEQ #20100107]

Dear Ms. Trost:

The U.S. Environmental Protection Agency (EPA) has reviewed the above referenced document. Our review and comments are provided pursuant to the National Environmental Policy Act (NEPA), the Council on Environmental Quality (CEQ) Regulations at 40 CFR Parts 1500-1508, and our NEPA review authority under Section 309 of the Clean Air Act.

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. 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 inactive mining 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.

The proposed Calico Solar Project (Project) involves construction and operation of 34,000 SunCatchers on 8,230 acres, as well as a 2.0-mile long, 230-kV interconnection transmission line. A 65-mile-long transmission line upgrade needed to transmit electricity from the full project build-out is the subject of a future EIS, and is discussed in general terms in this Draft EIS. We understand that on June 2, 2010 the project proponent, Tessera Solar ("Tessera"), submitted Alternative Site Layout #2, which delineates a new project boundary and engineering layout. We are encouraged by this new layout, which, if developed and approved, would reduce the project area to 6,215 acres, reduce the loss of desert tortoise and desert tortoise habitat, allow for a 4,000-foot-wide desert tortoise corridor adjacent to existing open lands in the Cady Mountains, and reduce the loss of habitat for special status plant species. We commend Tessera and the State and federal agencies for working together to develop an alternative that reduces land disturbance by 25 percent in an effort to reduce the Project's environmental impacts. Although Tessera's new alternative layout is documented at the California Energy Commission's (CEC) web site, it is not evaluated in the Draft EIS. We have not been able to review this new layout relative to the proposed Calico Solar Project, the other build alternatives, or the no action alternatives, which are evaluated in the Draft EIS. EPA strongly recommends that this revised alternative be presented in the Final EIS, in a comparable format, so that its impacts can be fully disclosed to the public and decision-makers.

EPA has rated this Draft EIS as EC-2 – Environmental Concerns-Insufficient Information (see enclosed "Summary of Rating Definitions and Follow-Up Action"). Our rating of this document is based on our concerns regarding the proposed project's potential impacts to air quality and biological resources, and the need for additional information on these impacts and measures to avoid or mitigate them. We believe several reasonable alternatives exist that would reduce the environmental impacts of this project, including Alternative Site Layout #2. We encourage the BLM and CEC to work with the project proponent to fully incorporate and evaluate the proposed revised Alternative Site Layout#2 into the Final EIS and identify any additional measures to avoid significant impacts. Our detailed comments are enclosed.

We appreciate the opportunity to review this Draft EIS. We request a copy of the Final EIS when it is filed with our Washington, D.C. office. If you have any questions, please call me at (415) 972-3521, or have your staff call Jeanne Geselbracht at (415) 972-3853.

Sincerely,

For Connell Dunning

Kathleen M. Goforth, Manager
Environmental Review Office

Enclosures: EPA Summary of Rating Definitions and Follow-Up Action
EPA Detailed Comments

Cc: Jim Stobaugh, BLM - Reno
Christopher Meyer, California Energy Commission
Ashley Blackford, U.S. Fish and Wildlife Service – Ventura
Jim Abbott, BLM – Sacramento
Michael Picker, California Governor's Office

Calico Solar Project Draft EIS
EPA Detailed Comments – June, 2010

Project Purpose and Need

EPA supports the appropriate development of renewable energy resources and reducing the use of fossil fuels for energy development as a critical step towards reducing major sources of greenhouse gasses that contribute to climate change. To that end, we also support efforts to meet the State of California's Renewables Portfolio Standard (RPS) of 20 percent renewable energy sources by 2010. However, EPA is concerned that the stated Calico Solar Project objectives, purpose, and need are too narrow and restrict the spectrum of reasonable alternatives that could be analyzed.

The Draft EIS states that the California Energy Commission's (CEC) objectives for the project are:

1. to safely and economically construct and operate an up to 750 MW, renewable power generating facility in California capable of selling competitively priced renewable energy consistent with the needs of California utilities;
2. to locate the facility in areas of high solarity with ground slope of less than five percent;
3. to complete the impact analysis of the project so that, if approved, construction could be authorized in 2010 and beyond.

The Draft EIS states that the BLM's purpose and need for the project are to respond to Calico Solar, LLC's application for a right-of-way grant to construct, operate, and decommission a solar thermal facility on public lands in compliance with applicable regulations and laws.

EPA believes the discussion in the Draft EIS regarding the objectives, purpose, and need for the project should be expanded. CEC's objective includes construction and operation of a facility that generates up to 750 MW. This is one *solution* to the underlying need to develop sufficient renewable energy to meet the State RPS. 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. For purposes of the NEPA analysis, the project purpose and need 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. It is critical that the purpose and need not prescribe a solution, nor imply a predetermined solution, such as a specific type of renewable energy plant in a specific location that generates a specific amount of power. The purpose and need should focus on the underlying problems to address (e.g., lack of capacity to serve an increasing demand for energy, or the need to develop sufficient renewable energy to meet State renewable portfolio standards). A solar power plant may be an integral component of the potential solution to the problems identified in a purpose and need discussion; however, the purpose and need should 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.

Furthermore, the Draft EIS (p. B.2-3) states that the Reduced Acreage Alternative, which would result in generation of up to 275 MW of electricity, is analyzed because it would substantially reduce impacts of the project "while meeting most or all of the project objectives." Elsewhere, however, the Draft EIS states that while both this and the Avoidance of Donated and Acquired Lands alternatives would meet the project objectives, they may not attain the purpose and need for the project because they would reduce the generation capacity (p. B.2-84). This statement is confusing. The *objectives* of the project are identified for the CEC, and the *purpose and need* for the project are identified for BLM and the Department of Energy (DOE). Neither BLM's nor DOE's purpose and need statements involve attaining a specific generation capacity; therefore, it does not appear that smaller capacity project alternatives would fail to meet the stated purpose and need. Notwithstanding the overly narrow project objectives identified in the Draft EIS, it appears that alternatives exist for a project smaller than 750 MW, which could be designed to avoid environmentally and culturally sensitive areas in the general project vicinity or other areas.

> **Recommendation:** The Final EIS should reflect broader objectives and purpose and need statements that allow for, and carry through with, a full evaluation of other alternatives, including off-site locations and other environmentally preferable on-site alternatives.

Alternatives

We are aware of numerous renewable energy projects being considered by BLM. Many, if not all, of these projects 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, smaller generation capacities, or altered project footprints at the proposed locations, as well as alternate sites, such as inactive mining 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.

Alternative Site Layout #2, which Tessera Solar ("Tessera") recently submitted to the CEC, would reduce the project disturbance by 25 percent to 6,215 acres while still providing 850 MW of electrical generation capacity.[1] This new layout is not evaluated in the Draft EIS; therefore, we have not been able to review it relative to the proposed Calico Solar Project, the other build alternatives, or the no action alternatives, which are evaluated in the Draft EIS. It appears that this new layout would reduce the loss of desert tortoise and desert tortoise habitat, allow for a 4,000-foot-wide desert tortoise corridor adjacent to existing open lands in the Cady Mountains, and reduce the loss of habitat for special status plant species. However, it also appears that additional adjustments should be made to these project boundaries to further reduce impacts, even if such adjustments would reduce generation capacity.

[1] 6/2/10 letter from Tessera to CEC and BLM at http://www.energy.ca.gov/sitingcases/calicosolar/documents/applicant/2010-06-02_Applicants_Submittal_of_Alternative_Site_Layout_02_TN-57018.PDF

Recommendation: The Final EIS should thoroughly evaluate Alternative Site Layout #2 as well as additional boundary adjustments to further avoid sensitive areas and reduce impacts. For example, we recommend the eastern boundary be pulled in to avoid overlap with the 4,000-foot tortoise corridor. We also recommend the detention basins be sited to minimize impacts to habitat while meeting appropriate design specifications. The Final EIS should indicate the specific locations of the detention basins.

Recommendation: We recommend the Final EIS fully analyze an alternative that pulls the eastern boundary further in to avoid disturbance of sections 32, 5, and 8, which the Draft EIS indicates are either occupied or likely to be occupied by desert tortoise. The analysis should include a discussion of the generation capacity this site could accommodate.

Recommendation: The Final EIS should evaluate other configurations in the general project vicinity, such as including or deleting different parcels than those in the current action alternatives, to determine if they would be feasible, less environmentally damaging alternatives. If so, they should be fully evaluated.

Recommendation: The Final EIS should identify and discuss the environmentally preferable alternative.

As additional alternatives are considered for evaluation in the Final EIS, as well as for future projects, EPA continues to recommend the identification of locations that have been previously disturbed or contaminated. EPA's Re-Powering America initiative works to identify disturbed and contaminated lands appropriate for renewable energy development. For more information on that initiative, visit http://www.epa.gov/oswercpa/.

Recommendations: EPA strongly encourages BLM to promote the siting of renewable energy projects on disturbed, degraded, and contaminated sites, before considering large tracts of undisturbed public lands. The Final EIS should discuss any methods or tools BLM has used to identify and compare locations for siting renewable energy facilities, and to ascertain whether or not any disturbed sites are available that would be suitable for the proposed project.

Air Quality

EPA is concerned about the project's potential impacts to air quality. As the Draft EIS indicates, the portion of the Mojave Desert Air Basin (MDAB) where the project is located is classified as a moderate non-attainment area for the federal and state ozone and PM10 (particulates smaller than 10 microns) standards and for the state PM2.5 standard. According to the Draft EIS (p. C.1-15), the proposed project's predicted total maximum annual emissions of oxides of nitrogen (NOx) and PM10 appear to approach their respective General Conformity Rule applicability (or de minimis) thresholds for moderate attainment areas. It is important that the emissions estimates be accurate for this analysis and that the construction emissions not exceed the applicable de minimis thresholds. A conformity determination would be needed if any pollutant would exceed its applicable de minimis threshold. Please note that the Mojave Desert Air

Quality Management District (MDAQMD) has petitioned EPA to classify the MDAB as severe non-attainment, and a new classification for ozone is expected by the end of this year. The General Conformity Rule applicability threshold for volatile organic compounds (VOC) and NOx in severe ozone non-attainment areas is 25 tons per year.

The Draft EIS includes several effective mitigation measures for project construction and operation phases. EPA supports incorporating additional mitigation strategies to reduce or minimize fugitive dust emissions as well as more stringent emission controls for PM10, PM2.5, and ozone precursors.

Recommendations: We recommend all applicable state and local requirements and the additional and/or revised measures listed below be included in the Final EIS in order to reduce impacts associated with PM and toxic emissions from project-related activities:

Fugitive Dust Source Controls:

- Install wind fencing, and phase grading operations, where appropriate.
- 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.

Mobile and Stationary Source Controls:

- Reduce use and trips 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 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.
- Develop a construction traffic and parking management plan that minimizes traffic interference and maintains traffic flow.

Air Quality – Cumulative Impacts Analysis

EPA is concerned that the scope of the cumulative air impacts analysis has been improperly confined, both temporally and geographically. Because there are no projects under construction or that have received permits from MDAQMD or San Bernardino County within six miles of the proposed project, the Draft EIS concludes that no stationary sources require a cumulative modeling analysis. However, a cumulative impact is the impact on the environment which results from the incremental impact of the action when added to other past, present, and *reasonably foreseeable future actions* regardless of what agency or person undertakes such other actions (40 CFR Part 1508.7). Cumulative impact analyses are important because they describe the threats to resources as a whole, and understanding cumulative impacts can illuminate opportunities for minimizing those threats. The Draft EIS includes maps depicting reasonably foreseeable future projects in the vicinity of the Calico Solar Project, including two projects that are either adjacent or within a couple of miles and several located within 40 miles. Construction for the Calico Solar Project could last at least 42 months and operations would continue for several decades. Regardless of whether other projects in the cumulative effects study area have received permits to date, they appear to be reasonably foreseeable and should be analyzed in the cumulative impacts analysis.

Furthermore, the scope of the cumulative impact analysis in the Draft EIS is geographically limited to focus on 'localized' cumulative impacts. Determination of the affected environment should not be based on a predetermined geographic area, but rather on perception of meaningful impacts for each resource at issue. The Draft EIS (p. C.1-43) indicates that, based on CEC staff's modeling experience, beyond six miles there is no statistically significant concentration overlap for non-reactive pollutant concentrations between two stationary emission sources. EPA disagrees that there is never significant overlap for sources separated by six miles. This would depend on the emissions, size of the source, and release height, among other criteria. For example, in our permitting process, we require modeling of the significant impact area plus 50 kilometers out. In an area classified as nonattainment for ozone, the cumulative effects study area could be the entire air basin because ozone precursors are reactive over hundreds of miles. It is also unclear what "significant" means with respect to concentration overlap. While this may be true in CEC's experience for some source types, the Final EIS will need to substantiate this in the specific case of the Calico Solar Project emissions.

> **Recommendation:** 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 Final EIS should discuss this.

Biological Resources

EPA is concerned that the Calico Solar Project would result in adverse impacts to wildlife, including desert tortoise, Mojave fringe-toed lizard, bighorn sheep, white-margined beardtongue, and wildlife movement in the project vicinity.

According to a recent U.S. Fish and Wildlife Service (FWS) report, maintaining a functional corridor through the Pisgah Valley is critical for the long term recovery of the federally listed threatened desert tortoise.[2] Pisgah Valley connects the West Mojave Desert Wildlife Management Areas and Mojave National Preserve, as well as the Western Mojave and Eastern Mojave recovery units and the Western Mojave and Colorado Desert recovery units. FWS considers a 4,000-foot corridor around the Cady Mountains at the Calico Solar Project site "a minimum area to accommodate home ranges such that resident tortoises occupy the area and continue to interact with their neighbors within and outside the corridor."

EPA is concerned that the proposed Calico Solar Project and the Avoidance of Donated and Acquired Lands Alternative would not accommodate this important 4,000-foot corridor.

> **Recommendation:** As discussed on pages 1 through 3 above, we recommend that alternatives and other measures be developed to avoid significant impacts to desert tortoise and other sensitive wildlife and plant species. These should be thoroughly evaluated in the Final EIS.

The Draft EIS (p. C.2-6) states that several surveys (e.g., vegetation, desert tortoise, and breeding status of the burrowing owl) that were not completed before publication of this Draft EIS will be completed and included in the Final EIS. This information will be needed to complete the development of appropriate avoidance and mitigation measures to minimize impacts to these resources. We also understand, however, that the Biological Opinion for the Calico Solar 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.

> **Recommendation:** We urge BLM and CEC to coordinate with FWS on the timing of publication of these two documents so the Final EIS can incorporate the Biological Opinion.

> **Recommendation:** The Final EIS should incorporate complete information on the compensatory mitigation proposals (including quantification of acreages, estimates of species protected, costs to acquire compensatory lands, etc.) and analyze the environmental and economic trade-offs of acquiring the off-site lands versus reducing the size of on-site alternatives for equivalent protection.

Mitigation measure BIO-28 requires netting over the evaporation ponds to preclude birds. Such ponds in the desert are an attractive nuisance to wildlife. It is important that the pond netting and

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[2] U.S. Fish and Wildlife Service, Connectivity of Desert Tortoise Populations, 6/3/10

fencing be regularly inspected and maintained to ensure there are no tears or holes through which birds and other wildlife can access potentially toxic water or get trapped and drown.

> **Recommendation:** Mitigation measure BIO-28 should include a requirement that the evaporation ponds, fences, and nets be inspected regularly (e.g., daily) to ensure they are in proper working order and are effectively precluding wildlife access, injury, and mortality.

Water Quality

According to the Draft EIS (p. C.7-23), waste water generated by the reverse osmosis unit will be discharged to evaporation ponds onsite. It is unclear whether the salts will remain in the ponds permanently or eventually be disposed offsite.

> **Recommendation:** The Final EIS should describe the fate of the salts that build up in the evaporation ponds.

At the time of publication of this Draft EIS, 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 Final EIS.

Climate Change

The Draft EIS provides the estimated greenhouse gas emissions (GHG) from the project and discusses the tradeoffs and benefits of this and other renewable energy projects in the context of overall strategies to reduce GHG emissions. However, the document includes very little analysis of climate change on the resources affected by the project or on the project itself. For example, climate change is analyzed as part of the cumulative impact analysis for golden eagle, but not for other wildlife or plant species, or for water resources.

> **Recommendation:** The Final EIS should discuss the impact of climate change on the proposal and the potential effects of the project on climate change. The Final EIS and ROD should also indentify specific mitigation measures to reduce greenhouse gas emissions.

Indirect Impacts

It can be anticipated that this project will allow for development and population growth to occur in those areas that receive the generated electricity.

> **Recommendation:** The Final EIS 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 and timing of growth, likely location, and the biological and environmental resources that would be affected by induced growth.