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

JUL 13 2012

Lynnette Elser
California Desert District Office
Bureau of Land Management
22835 Calle San Juan de Los Lagos
Moreno Valley, California 92553

Subject: Draft Environmental Impact Statement for the Proposed Desert Harvest Solar Project, Riverside County, California (CEQ #20120099)

Dear Ms. Elser:

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

EPA continues to support 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. We encourage BLM to apply its land management and regulatory 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 October 17, 2011, EPA provided extensive formal scoping comments for the project, including detailed recommendations regarding purpose and need, range of alternatives, cumulative impacts, biological and water resources, and other resource areas of concern. Additionally, since the proposed project is located within the Desert Renewable Energy Conservation Plan (DRECP) study area, as well as within the proposed Riverside East Solar Energy Zone identified in the Solar Programmatic DEIS, we recommended that the Desert Harvest DEIS integrate the latest analyses from, and demonstrate the proposed project's consistency with, these ongoing efforts.

Based on our review of the DEIS, we have rated the project and document as *Environmental Concerns – Insufficient Information* (EC-2) (see the enclosed "Summary of EPA Rating Definitions"). We were pleased to note avoidance of highly sensitive resources, such as Big Wash, which bisects the two parcels under consideration for development. We also commend the early resource analyses and agency coordination that resulted in the evaluation of 12 alternatives, including 4 solar farm configurations and 4 gen-tie alignments. EPA supports selection of the preferred Gen-Tie Alternative B, which would be co-located with the transmission line serving the adjacent Desert Sunlight Solar Farm. We were also pleased that two reduced footprint alternatives were evaluated that would avoid the 155-acre southern parcel and a 9-acre portion of the northern parcel that contains sensitive plant species.

Notwithstanding the positive aspects of the proposed project, EPA is concerned about the project's potential impacts to groundwater, air quality, desert dry wash woodlands, site hydrology, desert tortoise, and tribal resources, as well as about the cumulative impacts associated with the influx of other large-scale solar energy projects proposed in the Chuckwalla Valley.

In light of potential overdraft conditions in the Chuckwalla Valley Groundwater Basin, we recommend the FEIS include confirmation of an alternative water supply and conditions for its use. To inform the selection of the appropriate water supply, we suggest including an analysis of the anticipated drop in groundwater levels, and the associated impacts to groundwater-dependent vegetation and woodlands. We

also encourage BLM and the applicant to consider eliminating water use for panel washing as similar projects, such as Desert Sunlight, have agreed to do.

With respect to adverse air quality impacts resulting from the 24-month construction period, we recommend requiring more stringent mitigation measures, phased construction, and early coordination among multiple renewable energy project construction schedules to minimize adverse air quality impacts in the region.

Because the upper Chuckwalla Valley is considered an important habitat linkage, we recommend that the applicant and BLM work closely with the U.S. Fish and Wildlife Service to protect habitat connectivity for special status species, including the desert tortoise. In coordination with USFWS, the FEIS should identify sufficient lands for habitat compensation for the project's impacts, in order to ensure that compensatory lands are of comparable or superior quality, and are suitable compensation for the unique habitat on the project's site.

EPA generally recommends that early analyses of key resource areas, such as jurisdictional waters of the Unites States and impacts to threatened and endangered species, as well as identification of compensatory mitigation lands, be completed as early as possible, for integration into a DEIS. This information is important to determine a project's viability, avoid potential project delays, and assist in identifying the least environmentally damaging alternative. Such analyses were not included in the subject DEIS. We understand that, since the publication of the DEIS, the Army Corps of Engineers has determined that all aquatic resources on the project site are intrastate isolated waters not subject to section 404 of the Clean Water Act. While not federally jurisdictional, such resources are important features of the desert ecosystem, and we recommend that avoidance of those drainages and the desert wash woodlands on the site be maximized through design modifications to the photovoltaic array layout. To further minimize disruption of the site's hydrology, we recommend consideration of the extent to which vegetation could be maintained under the high-profile single-axis tracking panel proposed in Alternative 7.

Finally, we recommend that BLM commit, in the FEIS and ROD, to measures for this project similar to those adopted for the Desert Sunlight Solar Project to protect the portions of the subject Right-of-Way that were specifically avoided due to resource impacts. We encourage BLM to consider such a land use policy modification through the development of the DRECP as well. The FEIS should update discussions of, and demonstrate consistency with, the DRECP and the Solar PEIS, supported by up-to-date maps illustrating proposed SEZ development boundaries.

In the enclosed detailed comments, we provide specific recommendations regarding analyses and documentation needed to assist in assessing potential significant impacts from the proposed project, and for minimizing adverse impacts. 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,

Enrique Manzanilla, Director
Communities and Ecosystems Division

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

cc: James Mace, US Army Corps of Engineers
Tera Baird, United States Fish and Wildlife Service
Shankar Sharma, California Department of Fish and Game

Charles Wood, Chairman and Tom Pradetto, Environmental Director (ED), Chemehuevi Indian Tribe
Jeff Grubbe, Acting Chairman and Jeanne Jussila, ED, Agua Caliente Band of Cahuilla Indians
Louis J. Manuel Jr, Chairman and Brenda Ball, ED, Ak-Chin Indian Community
Maryann Green, Chairperson and Bill Anderson, ED, Augustine Band of Cahuilla Indians
David Roosevelt, Chairman and Darlene Coombes, ED, Cabazon Band of Mission Indians
Luther Salgado, Sr., Chairman and Brian Bahari, ED, Cahuilla Band of Indians
Sherry Cordova, Chairperson and Kevin Conrad, ED, Cocopah Indian Tribe
Eldred Enas, Chairman and Guthrie Dick, Acting ED, Colorado River Indian Tribes
Daniel Gomez, Chairman and Oscar Serrano, ED, Colusa Indian Community Council of the Colusa Rancheria
Clinton Pattea, President and Mark Frank, ED, Fort Mcdowell Yavapai Nation
Timothy Williams, Chairperson and Luke Johnson, ED, Fort Mojave Indian Tribe
Gregory Mendoza, Governor and Rudy Mix, ED, Gila River Indian Community
Louise Benson, Chairman and Don Bay, ED, Hualapai Tribal Council
Manuel Savala, Chairman and LeAnn Skrzynski, ED, Kaibab Band of Paiute
Shane Chapparosa, Spokesperson and Chris Ortiz, ED, Los Coyotes Band of Cahuilla and Cupeno Indians
Robert Martin, Chairperson and Liz Bogdanski, ED, Morongo Band of Cahuilla Mission Indians
Keeny Escalanti, President and Chase Choate, ED, Quechan Indian Tribe
Joseph Hamilton, Chairman and Reginald Agunwah, ED, Ramona Band of Cahuilla
Diane Enos, President and Chris Horan, ED, Salt River Pima-Maricopa Indian Community
James Ramos, Chairman and Clifford Batten, ED, San Manuel Band of Serrano Mission Indians
John Marcus, Chairman and Steven Estrada, ED, Santa Rosa Band of Cahuilla Indians
Scott Cozart, Chairman and Erica Helms-Schenk, ED, Soboba Band of Luiseno Indians
Maxine Resvaloso, Chairwoman and Gerardo Bojorquez, ED, Torres Martinez Desert Cahuilla Indians
Darrell Mike, Chairperson and Marshall Cheung, ED, Twenty-Nine Palms Band of Mission Indians

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 PROPOSED DESERT HARVEST SOLAR PROJECT, RIVERSIDE COUNTY, CALIFORNIA, JULY 13, 2012

Water Resources

Groundwater

We are concerned about the potential significant groundwater drawdown and cumulative impacts to the Chuckwalla Valley Groundwater Basin (CVGB) associated with the construction and operational phases of the proposed project in conjunction with the reasonably foreseeable projects in the vicinity.

Construction of the proposed 150 MW project would require 800 to 1,000 acre-feet (AF) of water at an average pumping rate of 400 to 500 acre feet per year (AFY) over a period of 24 months, followed by 39 AFY during operations (pgs. 2-12, 3.20-7 & 4.20-21).

As determined by the Water Supply Assessment for the proposed project, overdraft conditions in the CVGB are anticipated to occur during each year of project operations, projected through 2043 (p. 4.20-21). Negative balances are expected to exceed 6,700 AFY in 2013 thru 2017 (p. 4.20-45). Mitigation measure MM WAT-2 would allow the applicant to use offsets for groundwater use contingent on demonstration that an amount of groundwater equal to that consumed by the project is conserved within the CVGB on an AF basis. This measure also instructs the applicant to identify an alternative water source for the project from any other source but the CVGB; however, there does not appear to be a requirement, or trigger event, for its use.

> *Recommendations:*
> The FEIS should identify the alternative non-CVGB water source, as recommended by MM WAT-2, and analyze potential impacts to groundwater and air quality (e.g. from transportation) that may result. Clarify the circumstances under which this alternative water supply would be used.
>
> Address, in the FEIS, what mitigation 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, climate change, or the utilization of existing or pending water rights in the basin.
>
> Reconcile, in the FEIS, the statement that Table 3.20-2 indicates sufficient water supply is available within the CVGB to meet the project's water requirements (p. 4.17-25) with the Water Supply Assessment's findings that the CVGB will be in overdraft conditions as of 2013, in part, as a result of the project's construction water supply demands (p. 4.20-45).

The DEIS for the Desert Sunlight Solar Farm Project concluded that, in conjunction with the neighboring Eagle Mountain Pumped Storage Project, groundwater levels could decline in excess of 6 feet in the vicinity of Desert Sunlight(Desert Sunlight DEIS p. 4.17-37). As prior BLM NEPA documents have noted, even modest drawdowns of 0.3 foot can adversely affect vegetation if groundwater drops below the effective rooting levels for a sustained period of time.[1] A drop in groundwater levels could also impact neighboring wells, lower the water table, and adversely affect groundwater-dependent vegetation and

[1] Bureau of Land Management and California Energy Commission, March 2010. Staff Assessment and Draft Environmental Impact Statement for Genesis Solar Energy Project, p. C.2-4.

woodlands. MM VEG-10 and MM WAT-3 discuss measures to be taken if water levels decline 1 foot or more below the baseline trend, and if levels at off-site wells drop over 5 feet (pgs.4.3-36 & 4.20-24); however, the likelihood of these scenarios is not analyzed.

> *Recommendations:*
> Include, in Section 4.20 of the FEIS, a numerical analysis, based on expected pumping rates and overdraft conditions mentioned above, of the anticipated drop in groundwater levels and associated impacts to groundwater-dependent vegetation and woodlands.
>
> The FEIS should evaluate whether operations for all reasonably foreseeable projects could result in indirect impacts to the Palo Verde Mesa Groundwater Basin by inducing underflow. Such basin balance analyses for the cumulative effects to the Palo Verde Mesa Basin should be included in the FEIS.

Panel washing for the proposed project is expected to take place 2 to 3 times per year (p. 2-18). The Desert Sunlight Solar Farm applicant has agreed to the condition that water will not be used for panel washing. It is also our understanding that First Solar's Silver State facility in Nevada will also not require PV panel washing.

> *Recommendation:*
> In light of the overdraft conditions of the CVGB, and the technical feasibility of eliminating periodic washing of solar panels, consider adopting, as a condition of certification in the FEIS and ROD, that water will not be used for panel washing.

Drainages and Ephemeral Washes

Twelve natural washes traverse the proposed project site and they perform a diversity of hydrologic, biochemical, and geochemical functions that directly affect the integrity and functional condition of higher-order waters downstream. 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, such as adequate capacity for flood control, energy dissipation, and sediment movement; as well as impacts to valuable habitat for desert species.

The DEIS estimates that 98 to 180 acres of Blue Palo Verde-Ironwood Woodland would be impacted by the project solar site (Table 4.3-1). The gen-tie alternatives would impact an additional 39 to 60 acres of this habitat (Table 4.3-2). Blue Palo Verde-Ironwood Woodland is largely comprised of California Department of Fish and Game jurisdictional desert dry wash habitat. The DEIS states that 100 percent of the solar field would be impacted by some form of soil disturbance from either compaction, micro-grading, or disc-and-roll grading (p. 2-6). Clearing, grading and compaction of the solar farm site in preparation for project construction, in addition to access roads and transmission line development, would permanently impact 79 to 113 acres of CDFG jurisdictional streambeds on site (Table 4.3-1) and 39 to 60 acres along the Gen-Tie alignments (Table 4.3-2).

> *Recommendations:*
> Demonstrate that downstream flows would not be adversely impacted due to proposed changes to natural washes and on-site disc-and-roll grading.

Include the finalized drainage plan in the FEIS to facilitate assessment of impacts and effectiveness of mitigation measures.

To avoid and minimize direct and indirect impacts to desert washes, EPA recommends that the FEIS evaluate, and include commitments to, the following:

- selecting a project alternative with the smallest footprint practicable, such as Alternative 6 or 7;
- implementing all practicable opportunities to further reduce the footprint of project elements (parking, buildings, roads, etc.);
- distributing PV panel support structures to avoid desert dry wash woodlands and minimizing placement in washes;
- utilizing existing natural drainage channels on site and more natural features, such as earthen berms or channels for site drainage, rather than engineered and armored channels;
- maintaining natural washes and including adequate buffers for flood control to the maximum extent practicable;
- configuring the project layout, roads, drainage channels and ancillary facilities (including the yet to be determined site of the O&M facility) to avoid, to the extent practicable, ephemeral washes, including desert dry wash woodlands within the project footprint; and,
- minimizing the number of road crossings over washes and designing necessary crossings to provide adequate flow-through during storm events.

As proposed, Alternative 7 would incorporate high-profile single-axis tracking panels that would have a total height of 15 feet, but natural vegetation and dry desert washes would still be cleared and graded. It is our understanding that other PV solar companies have proposed designs that reduce the need for site clearing and grading by mounting PV panels at sufficient height above ground to maintain natural vegetation, which could minimize drainage disturbance, the need for site grading and generation of fugitive dust.

Recommendation:
The FEIS should evaluate mounting PV panels at sufficient height above ground to maintain natural vegetation and minimize drainage disturbance. Quantify acreage that would not require clearing and grading as a result. Compare these results to existing alternatives, and incorporate project design changes into site design and conditions of certification, accordingly.

It remains unclear whether or when the earthen berm constructed by the Desert Sunlight project will be removed and how it would affect hydrology on the proposed project site. According to the DEIS, this berm forms the southern boundary of the Desert Sunlight project and the northern boundary of the proposed Desert Harvest site. The DEIS states that "the berm is not anticipated to interfere with surface water flows onto the DHSP site" but later states that "the berm is expected to interfere with surface water runoff associated with smaller storms" (p. 3.20-12). The berm would concentrate flows east and west of the project site, but larger storms are expected to be less affected due to the height of the berm and anticipated flow depths. EPA is concerned that each scenario could be very different from a hydrologic and habitat perspective and that the berm could have significant long-term effects on the project site if it were to remain in place.

Recommendation:
The FEIS should provide a better description of the short and long-term effects of the berm on the proposed project's surface hydrology and habitat, including how it would change the frequency and duration of flows and the resulting impact on desert woodland habitat.

Section 4.20, Water Resources, includes a discussion of the impacts and mitigation measures for state jurisdictional drainages and concludes that "no unavoidable adverse effects to water resources would result from implementation"; however, it appears that the project would result in a net loss of desert wash resource functions. Application of MM VEG-6 (Provide Off-Site Compensation for Impacts to Vegetation and Habitat) would result in preservation of off-site habitat to compensate for the loss of desert wash habitat.

> *Recommendation:*
> Consider whether opportunities are available to restore or enhance other lands within the Chuckwalla Valley watershed to replace desert wash functions lost on the project site.

Fencing

The DEIS does not provide information about fencing nor the effects of fencing on drainage systems. By entraining debris and sediment, fencing can interfere with natural flow patterns. Fence design should address hydrologic criteria, as well as security performance criteria.

> *Recommendations:*
> Describe, in the FEIS where permanent fencing will be used and the potential effects of fencing on drainage systems. Ensure that the fencing proposed for this project will meet appropriate hydrologic performance standards.
>
> Review the National Park Service's published article[2] on the effects of the international boundary pedestrian fence on drainage systems and infrastructure, and ensure that such issues are adequately addressed with this project.

Floodplain Hazards

Executive Order 11988 Floodplain Management requires federal agencies to avoid, to the extent possible, the long and short-term adverse impacts associated with the occupancy and modification of floodplains. According to the DEIS, the project site is located within an "Awareness Floodplain" mapped by the Department of Water Resources as part of the Awareness Floodplain Mapping project. The Preliminary Flood Plain & Hydrology Analysis prepared for the Eagle Mountain Area found 100-year storm flows would be distributed and flow depth is not expected to exceed 3 to 5 feet in the area (p. 3.20-11).

The area is also designated by FEMA as a Flood Zone D, or area with "possible but undetermined flood hazards", which means no analysis of flood hazards has been conducted (p. 3.20-11).

> *Recommendations:*
> Describe in the FEIS, how BLM's review of the proposed project is consistent with the provisions of Executive Order 11988.
>
> Provide, in the FEIS, a detailed description of the current FEMA floodplain, and include results of consultation with FEMA, if appropriate.

---

[2] 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.

Air Quality

EPA is concerned about the direct, indirect and cumulative impacts of construction and fugitive dust emissions associated with the project, even after mitigation measures have been taken into account. The DEIS includes estimated emissions for criteria pollutants and description of the mitigation measures that will be implemented to reduce the adverse air impacts identified in the DEIS; however, even with implementation of these mitigation measures, maximum daily construction emissions are predicted to exceed South Coast Air Quality Management District's thresholds of significance in 2012 thru 2014 for volatile organic compounds (VOCs), oxides of nitrogen (NO_x), carbon monoxide, and particulate matter 10 microns or less in size (PM_{10}) (p. 2-13 & 4.2-5).

According to the DEIS, while the area is in attainment for federal National Ambient Air Quality Standards, the project area is in nonattainment for state ozone and PM_{10} standards (p. 3.2-12). In light of the nonattainment status, the 4,400 truck trips and 82 construction vehicles expected during the 24 month construction phase, the close proximity of a federal Class I area, and the numerous projects proposed in the area, all feasible measures should be implemented to reduce and mitigate air quality impacts to the greatest extent possible.

Recommendations:
Ensure that mitigation measures in the DEIS, and additional mitigation measures that go beyond those in the DEIS (see recommendations, below), are implemented on a schedule that will reduce construction emissions to the maximum extent feasible.

Include, in the FEIS and ROD, all mitigation measures proposed in the DEIS and any additional measures adopted.

Describe, in the FEIS, how these mitigation measures will be made an enforceable part of the project's implementation schedule. We recommend implementation of applicable mitigation measures prior to or, at a minimum, concurrent with the commencement of construction of the project.

Evaluate, in the FEIS, the benefits of maximizing natural vegetation under the higher PV panel Alternative 7 in reducing fugitive dust.

Discuss, and consider adopting in the ROD, a requirement to use the local distribution line to power construction activities, rather than the five mobile generators, described on page 2-15, which would produce their own emissions.

Additional mitigation for non-road and on-road engines

EPA commends BLM for incorporating SCAQMD's Rule 403 to ensure best available and enhanced dust control measures that will limit impacts from PM_{10}. We also note MM AIR-2 recommends Tier 3 engines, if available (p. 4.2-9). 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. We also advocate minimizing disturbance to the natural landscape as much as possible, so that the need for measures to reduce fugitive is minimized or eliminated.

We recommend that the applicant and BLM commit to implementing best available emission control technologies for construction, ahead of the California Air Resources Board's in-use off-road diesel

vehicle regulations, regardless of fleet size.[3] EPA began phasing-in Tier 4 standards for non-road engines in 2008[4]; however, the DEIS does not mention the availability of Tier 4 non-road engines. The use of such engines would result in an approximately 90% reduction in NO_x and PM emissions as compared to Tier 3.

Recommendations:
The FEIS should discuss, and include emission tables for, various classifications of on-road and non-road engines, highlighting emission levels for PM_{10}, $PM_{2.5}$ and NO_x.

The FEIS should indicate the expected availability of Tier 3 and Tier 4 engines for the construction equipment list provided on page 2-13.

The FEIS and ROD should commit to using non-road construction equipment that meets Tier 4 emission standards, when available, and best available emission control technology, for construction that occurs prior to Tier 4 standards availability.

The FEIS should update the tables in the Section 4.2 impact analysis to reflect the additional criteria pollutant emissions reductions that would result from using Tier 4 engines for each component of project construction.

All applicable state and local requirements, and the additional and/or revised measures listed below, should be included in the FEIS, and the FEIS and ROD should include a condition that the applicant incorporate the following measures into construction contracts:

Mobile Source Controls:
- Employ periodic, unscheduled inspections to limit unnecessary idling and to ensure that construction equipment is properly maintained, tuned, and modified consistent with established specifications.
- Prohibit any tampering with engines and require continuing adherence to manufacturer's recommendations.

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.[5] Where appropriate, use alternative fuels.
- Develop a construction traffic and parking management plan that minimizes traffic interference and maintains traffic flow in coordination with the Desert Sunlight project.

Cumulative Air Quality Analysis

Analyses conducted for the Desert Sunlight Solar Farm showed exceedances of SCAQMD's daily thresholds of significance for VOCs, NO_x, CO, PM_{10} and $PM_{2.5}$. Analysis of the nearby Eagle Mountain

[3] See CARB's Factsheet at: http://www.arb.ca.gov/msprog/ordiesel/faq/overview_fact_sheet_dec_2010-final.pdf
[4] See EPA website: http://www.epa.gov/nonroad-diesel/2004fr/420f04032.htm#standards
[5] 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.

Pumped Storage Project also indicated unavoidable adverse NO_x impacts (p.4.2-24). Construction of these projects, as well as seven other foreseeable projects, could overlap with construction of the proposed project; however, the DEIS does not analyze the combined emissions that would result. The DEIS concludes the project would have temporary significant and unavoidable NO_x and PM_{10} impacts during construction (p. 4.2-26).

Recommendations:
Estimate, in the FEIS, the cumulative emissions from the proposed project combined with the present and reasonably foreseeable projects highlighted in Table 4.2-9. We recommend that theses cumulative emissions data be used to develop, in consultation with the SCAQMD, a phased construction schedule, for projects that will undergo construction concurrently that will not result in any violations of local, state or federal air quality regulations. EPA recommends incremental construction on-site to ensure air quality standards are not exceeded.

The FEIS should provide technical justification for any determination that a projects is too far from the proposed project to contribute to cumulative air quality impacts. While the DEIS states that a cumulative air quality analysis should be limited to an area within six miles of a project, the appropriate area to consider depends on the emissions, size of the source, and release height, among other criteria.

If additional mitigation measures would be needed, based on the evaluation of cumulative emissions, or if the project would affect the ability of other foreseeable projects to be permitted, the FEIS should discuss this.

Greenhouse Gas Emissions - Construction and Operation Bid Specifications

In soliciting future contracts for project construction and operations, consider including in the FEIS, and adopting in the ROD, the following additional requirements:

a) Soliciting bids that include use of energy- and fuel-efficient fleets;
b) Requiring that contractors ensure, to the extent possible, that construction activities utilize grid-based electricity and/or onsite renewable electricity generation rather than diesel and/or gasoline powered generators;
c) Employing the use of zero emission or alternative fueled vehicles;
d) Using lighting systems that are energy efficient, such as LED technology;
e) Using the minimum amount of GHG-emitting construction materials that is feasible;
f) Using cement blended with the maximum feasible amount of fly ash or other supplemental cementitious materials that reduce GHG emissions from cement production;
g) Using lighter-colored pavement where feasible; and,
h) Recycling construction debris to maximum extent feasible.

<u>Biological Resources</u>

Endangered Species and Other Species of Concern

The site supports a diversity of mammals, birds, and reptiles, including special status wildlife species. Project construction would result in permanent and long-term impacts to 1,206 acres including direct impacts to special status animal species through the removal of native vegetation that provides cover, foraging, and breeding habitat for wildlife (p. 4.4-5). Long-term impacts may occur as a result of increased predation and habitat fragmentation. In addition to desert tortoise, the project site provides

suitable habitat for burring owls and Nelson's Bighorn Sheep, as well as foraging habitat for the golden eagle (pgs. 3.4-29 & 4.4-12). The project site is located within 10 miles of known golden eagle nesting territories.

We understand that the Biological Opinion for this project has not yet been finalized. 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.

Recommendations:
The FEIS should provide an update on the consultation process and include the Biological Opinion as an appendix.

Mitigation and monitoring measures that result from consultation with USFWS to protect sensitive biological resources, including desert tortoise, burrowing owl, golden eagles and Nelson's big horn sheep should be included in the FEIS and, ultimately, the ROD.

Explain, and correct as necessary, how the reduced footprint Alternatives 6 and 7 differ in their impacts to the Palen-Ford Wildlife Habitat Management Area in Table 4.4-1.

Identify specific measures to reduce impacts to eagles. Specify in the FEIS how approval of the proposed project would comply with the Migratory Bird Treaty Act, and the Bald and Golden Eagle Protection Act.

Discuss the applicability of the recent Eagle Conservation Plan Guidelines[6] to the proposed project and, as necessary, describe compensatory mitigation to reduce the effect of permitted mortality to a no-net-loss standard.

Include, in the FEIS, design practices to be followed for the above ground power lines to minimize bird collisions. A useful reference for this is the Avian Power Line Interaction Committee document, *Mitigating Bird Collisions with Power Lines: The State of the Art in 1994.*

Include in the FEIS a requirement for the Avian Protection Plan (now called Bird and Bat Conservation Strategies (BBCS)) to be developed using the 2005 Avian Power Line Interaction Committee and U.S. Fish and Wildlife Service Avian Protection Plan Guidelines. Include, in the FEIS, practices that reduce the potential for raptor fatalities and injuries from power lines. These practices can be found in the Suggested Practices for Avian Protection on Power Lines: State of the Art in 2006 manual.

Habitat Connectivity

The upper Chuckwalla Valley is considered an important habitat linkage, characterized by diffuse gene flow between the Mojave and Colorado portions of the desert tortoise's range. There are only a few such linkage areas providing connectivity among desert tortoise populations within conservation areas (p. 4.4-17). The project's impacts on wildlife movement and biological connectivity within the upper Chuckwalla Valley could affect biological resources within the Joshua Tree National Park (p.4.4-17). While the DEIS acknowledges that residual cumulative effects to habitat connectivity within the upper Chuckwalla Valley would be substantial due to the loss of wildlife movement habitat, the DEIS concludes

[6] See Draft Eagle Conservation Plan Guidelines, February 2011: See internet address: http://www.fws.gov/windenergy/eagle_guidance.html

that, since the site is modeled as low habitat value, had low density of tortoises, and would not interfere with the most important desert tortoise movement habitat, the impacts from the proposed project would be relatively minor (p. 4.4-63).

Recommendations:
Reconsider, in the FEIS, not extending the eastern boundary of the site beyond the eastern boundary of the Desert Sunlight Solar Farm to improve habitat connectivity consistent with USFWS' suggested "Alternative to Facilitate Wildlife Movement" (p. 2-68).

Confirm, in the FEIS, based on consultation with the USFWS, that the wildlife movement and habitat connectivity impacts from the proposed project would be "relatively minor".

Discuss, in the FEIS, potential impacts to wildlife movement in the area under future climate change scenarios.

Review University of California, Riverside's recently published article[7] on the sensitivity to climate change of the desert tortoise in the area of Joshua Tree National Park. Discuss the applicability of such research and modeling in the vicinity of the project, and how such issues will be addressed with this project.

Compensatory Mitigation

We note that mitigation measure MM VEG-6 provides an extensive protocol to ensure adequate compensatory mitigation and requires protection of compensatory lands 'into perpetuity'; however, the DEIS states that specific compensation land availability cannot be identified or quantified at this time and acquisition 'may be challenging' (p. 4.4-10). In light of the numerous renewable energy projects in the Riverside East Solar Energy Study Zone area, the availability of land to adequately compensate for environmental impacts to resources such as state jurisdictional waters, desert dry wash woodlands, and desert tortoise, may serve as a limiting factor for development.

Recommendations:
Identify compensatory mitigation lands or quantify, in the FEIS, available lands for compensatory habitat mitigation for this project, as well as reasonably foreseeable projects in the Riverside East Solar Energy Study Zone. Demonstrate that sufficient lands are available to meet the compensation land selection criteria outlined on page 4.3-22.

Clarify the rationale for the 1:1 mitigation ratio for desert tortoise habitat and how this relates to the mitigation ratios recommended by other agencies and to the higher mitigation ratios used for other renewable energy projects in California and Nevada.

Specify provisions to be adopted in the ROD that set out a clear timetable for ensuring adequate compensatory mitigation has been identified, approved and purchased, as appropriate.

The FEIS and ROD should discuss mechanisms and incorporate proposed conditions for certification that would: 1) protect into perpetuity any compensatory lands that are selected, and 2) as was agreed upon for the Desert Sunlight Solar Farm, exclude the non-developed portion of the subject ROW from further disturbance or development, based on this project's resource

[7] Barrows, C.W., 2011. Sensitivity to climate change for two reptiles at the Mojave-Sonoran Desert interface. Journal of Arid Environments 75, 629-635.

analyses and the decision to select the proposed project's footprint to minimize environmental impacts.

Climate Change

EPA commends the BLM for including estimates of greenhouse gas emissions from construction and operation of the project. The DEIS, however, does not include a discussion of the potential impacts of climate change on the project.

Recommendation:
Considering that the project is planned to be in operation for 30, and possibly as many as 50 years, the FEIS should include a description of how climate change may affect the project. Include, in the FEIS, information detailing the impacts that climate change may have on the project, particularly its sources of groundwater, and reclamation and restoration efforts after construction and decommissioning. The FEIS should also discuss how climate change may affect the project's impacts on sensitive species.

Consistency with the California Desert Renewable Energy Conservation Plan and the Solar PEIS

The California DRECP, scheduled for completion in 2013, is intended to advance state and federal conservation goals in the desert regions while also facilitating the timely permitting of renewable energy projects in California. The DRECP will include a strategy that identifies and maps areas for renewable energy development and areas for long-term natural resource conservation. The Solar Programmatic EIS, scheduled for completion later this Fall, is being developed by the Department of Energy and the BLM and is intended to apply to all pending and future solar energy development right of way applications. The Desert Harvest project is located in the DRECP boundary area and, potentially, in the Riverside East Solar Energy Zone identified in the PEIS.

Recommendation:
The FEIS should elaborate on the DRECP and Solar PEIS, and include up-to-date maps illustrating the current boundaries and conceptual alternatives that are relevant to the proposed project. Discuss whether the site is expected to be included within the Riverside East Solar Energy Zone and acknowledge that additional requirements and/or conditions may apply upon approval of the DRECP and/or the Solar PEIS.

Cultural Resources and Consultation with Tribal Governments

A total of 34 cultural resources have been inventoried to date for the project, including six prehistoric resources and 18 historic resources (p. 3.6-29). The DEIS states that BLM has formally invited 15 Native American Tribes to consult at the government-to-government level throughout the review of the project (p. 5-6).

While we commend BLM for initiating consultation in the Fall of 2011, the DEIS indicates that it is unknown at this time if impacts on cultural resources as a result of the construction of the solar farm can be satisfactorily mitigated, primarily because identification efforts have not been completed for this project (p. 4.6-10). Further, National Register of Historic Places eligibility determinations and findings of effect are still pending and the indirect effects studies are not complete (p. 4.6-4)

Consultation with Indian Tribes, and discussions with Tribal organizations and individuals, have revealed concern about the importance and sensitivity of cultural resources near the project site, as well as cumulative effects to cultural resources and landscapes (p. 5-6).

Recommendations:
Describe, in the FEIS, the process and outcome of government-to-government consultation between the BLM and the tribal governments listed on page 5-7.

Discuss issues that were raised, how those issues were addressed in relation to the proposed project, and how impacts to tribal or cultural resources will be avoided or mitigated consistent with Executive Order 13175, *Consultation and Coordination with Indian Tribal Governments,* Section 106 of the National Historic Preservation Act, and Executive Order 13007, *Indian Sacred Sites.*

Include, in the FEIS, the NRHP eligibility determinations and the results of the indirect effects studies.

Update the Cultural Resources chapter to reflect the above recommendations related to tribal resources and revise the "*The Desert Harvest Solar Project in the Cumulative Context*" section (p. 4.6-26) to account for tribal concerns.

Please note, we have identified, and copied, 9 additional tribes on our comments. These tribes, while not geographically located near the project, are affiliated with the tribal groups (Cahuilla, Serrano, Chemehuevi, Mojave, Quechan, and Maricopa) identified in Section 3.6 as historically living in the area of the project.

Recommendation:
Contact the additional tribal representatives copied on this comment letter to ensure they have been provided the opportunity to participate in the ongoing government-to-government consultation for the project.