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

November 23, 2010

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

Subject: Draft Environmental Impact Statement for the Proposed First Solar Desert Sunlight Solar Farm Project, Riverside County, California (CEQ #20100338)

Dear Mr. Kalish:

The U.S. Environmental Protection Agency (EPA) has reviewed the Draft Environmental Impact Statement (DEIS) for the Proposed First Solar Desert Sunlight Solar Farm 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, as recommended in the Energy Policy Act of 2005, 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. Given the large number of renewable energy project applications currently under consideration, particularly in the Desert Southwest, we believe it is imperative that project applicants coordinate early with federal agencies and stakeholders on site selection and project design in order to facilitate timely environmental reviews. 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 were 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. The vast majority 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 landfills, abandoned mines or other disturbed sites, including on private lands, 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, 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 January 27, 2010, EPA provided extensive formal scoping comments for the Project which included detailed recommendations regarding purpose and need, range of alternatives, cumulative impacts, biological and water resources, and other resource areas of concern. 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 the Pinto Wash and aeolian sand deposits, as well as the commitment to minimal water use during operation of the facility. We commend the early resource analyses and coordination that resulted in selection of the 4,410 acre site within the 19,000 acre Right-of-Way in order to avoid and minimize environmental impacts. We continue to recommend 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 to determine a project's viability, to avoid potential project delays, and to assist in identifying the least environmentally damaging alternative.

While we note positive aspects of the proposed Project, EPA remains concerned about the Project's potential direct and indirect impacts to desert dry wash woodlands, site hydrology, desert tortoise, air quality and groundwater, as well as cumulative impacts associated with the influx of the multitude of large-scale solar energy projects proposed in the Chuckwalla Valley.

We urge BLM to adopt the Reduced Acreage Alternative, Alternative 3, which would protect the site's highest desert tortoise densities, as well as other special status plants, on the northwest corner of the proposed Project site. Further, we recommend the design flexibility of the solar photovoltaic (PV) technology be fully utilized to avoid the 35 acres of desert dry wash woodlands located within the Reduced Acreage Alternative footprint.

EPA continues to have concerns with the solar farm's potential to increase erosion, migration of channels, and local scour. We recommend that the Final Environmental Impact Statement (FEIS) include detailed information on channel design which incorporates natural features to minimize disruption to upstream and downstream hydrology. We also strongly encourage design modifications to the PV array layout to maximize avoidance of drainages and sensitive habitat. We have requested further clarification of the efficacy of the proposed soil decompaction technique and use of rip-rap to minimize these impacts to site hydrology. In order to avoid complete clearing and grading of the site, we request a full evaluation of mounting PV panels at sufficient height above ground to maintain natural vegetation and reduce impacts to drainages.

We understand that the jurisdictional delineation of waters of the United States has not been finalized, and the full extent of impacts has not been determined. The FEIS should quantify the potential impacts to waters of the U.S. and discuss the steps that would be taken to avoid and

minimize such impacts, as necessary. The FEIS should also include a robust discussion of all avoidance and mitigation measures proposed for the Project and include an outline of the requirements of a compensatory mitigation plan.

We recommend that the Applicant and BLM work closely with the U.S. Fish and Wildlife Service in the identification of 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. Due to the large influx of other large-scale solar energy projects proposed in the Chuckwalla Valley, we request additional analysis of the indirect and cumulative impacts on sensitive species, groundwater use, and air quality. With respect to adverse air quality impacts resulting from the 26-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. Finally, we are concerned that the alternatives fully evaluated in the DEIS do not include a private lands or disturbed lands alternative.

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,

/S/Laura Fujii for

Kathleen M. Goforth, Manager
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
James Mace, US Army Corps of Engineers
Jody Fraser, United States Fish and Wildlife Service
Becky Jones, California Department of Fish and Game
Ray Brady, Energy Policy Team Lead, Bureau of Land Management

U.S. EPA DETAILED COMMENTS ON THE DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR THE PROPOSED FIRST SOLAR DESERT SUNLIGHT SOLAR FARM PROJECT, RIVERSIDE COUNTY, CALIFORNIA, NOVEMBER 23, 2010

Project Description

Desert Sunlight Holdings, LLC (Applicant), a wholly owned subsidiary of First Solar Development, Inc., has requested a right-of-way (ROW) authorization to develop a 4,410-acre, 550-megawatt (MW) solar photovoltaic (PV) generation facility (Project). The Project area is located approximately 6 miles north of the rural community of Desert Center, California and Interstate 10 on lands primarily managed by the Bureau of Land Management (BLM). The Project area is largely vacant, undeveloped, and relatively flat between the cities of Blythe and Coachella in the Chuckwalla Valley of the Sonoran Desert in eastern Riverside County.

The Project will be comprised of three primary components: 1) the main PV generating facility, including administration, operations, and maintenance facilities; 2) a 220-kilovolt (kV) Gen-Tie (transmission line); and, 3) a 500/220-kV Substation (Red Bluff Substation) and supporting facilities. The Red Bluff Substation would be used to interconnect with the Southern California Edison (SCE) regional transmission system. While the Red Bluff Substation was included as part of the Project for planning and environmental analysis, it would be constructed, owned, and operated by SCE, not the Applicant.

The DEIS analyzes alternatives which include: the 550MW solar farm, a reduced size 413MW solar farm, and No Action alternatives; 3 different transmission line alignments; and two different substation locations.

Water Resources

Clean Water Act Section 404

Shortly after the publication of the DEIS, a request for an official jurisdictional determination of the extent of Waters of the United States (WUS) subject to Section 404 of the Clean Water Act (CWA) was made to the U.S. Army Corps of Engineers (Corps). The DEIS indicates desert dry washes on site may meet the criteria for WUS, based upon project surveys; however, they are potentially not subject to Corps jurisdiction under the Clean Water Act because of a lack of a surface water connection to a traditional navigable waterway or an intrastate commerce connection (p. 3.3-18). We understand the Applicant has requested an official jurisdictional determination from the Corps that it is still pending. In the absence of a formal jurisdictional determination verified by the Corps, it is difficult to discern the extent of impacts to waters.

> *Recommendation:*
> EPA recommends that the FEIS: (1) document whether the Project will require a CWA Section 404 permit based on completed consultation with the Corps, (2) include the findings of the jurisdictional delineation, and (3) identify avoidance and minimization of impacts to WUS and mitigation measures for impacts that cannot be avoided.

The DEIS estimates that 304 to 354 acres of desert dry washes will be impacted by the Project, the transmission line, and proposed Substations (p. 4.3-3). While the DEIS notes that the engineering contractor is exploring other vegetation removal methods to minimize impacts, it assumes that the entire solar farm will be cleared and graded (p. 2-76). Clearing, grading and compaction of the solar farm site in preparation for Project construction, in addition to access roads and transmission line development, could directly (via temporary or permanent fill) and indirectly affect drainages and ephemeral washes within the proposed Project area. Further, road crossings within potential WUS may result in the reduction of the physical extent of waters, adverse modification of stream hydrology and sediment transport, and adverse effects to habitat connectivity and wildlife movement.

If it is determined that there are jurisdictional waters within the Project area, a CWA Section 404 permit from the Corps will be required for any discharges of dredged or fill material into these waters. If a Section 404 permit is required, EPA will review the Project for compliance with the Federal Guidelines for Specification of Disposal Sites for Dredged or Fill Materials (40 CFR 230), promulgated pursuant to Section 404(b)(1) of the CWA (Guidelines). Pursuant to the Guidelines, any permitted discharge into WUS must be the Least Environmentally Damaging Practicable Alternative (LEDPA) available to achieve the project purpose. No discharge can be permitted if it will cause or contribute to significant degradation of WUS. Based on the information available within the DEIS, the Applicant has not demonstrated compliance with the Guidelines.

If impacts to aquatic resources cannot be avoided, alternatives that minimize impacts must be fully considered. With projects such as transmission lines and solar farms, there are opportunities to avoid and minimize direct, indirect, and cumulative impacts to potential jurisdictional washes by applying sensitive design criteria. EPA offers the following recommendations to help facilitate compliance of the Project with the Section 404 Guidelines:

Recommendations:

The 404 (b)(1) Guidelines require that projects first avoid, then minimize, and, finally, mitigate any impacts to WUS. The FEIS should quantify the direct, indirect/secondary and temporary impacts to waters in a table, and discuss steps that would be taken to avoid and minimize impacts for the project alternatives. The FEIS should identify the LEDPA, if applicable, and describe how the project would comply with the 404(b)(1) Guidelines. The location of desert dry wash woodlands and other sensitive habitat and species should be considered during development of the LEDPA. Additionally, compensatory mitigation measures for potential impacts to WUS should be included in the FEIS, as appropriate.[1]

Explore additional avoidance and minimization measures such as bridging and the use of at-grade crossings or Arizona crossings. Sensitive design criteria should also be included such as: reducing the fill footprint; locating PV arrays out of waters, including drainages and washes; utilizing existing drainage channels; and, if necessary, constructing drainage channels with natural features. Pursuant to the Guidelines, the Applicant must mitigate for unavoidable impacts to WUS.

[1] Compensatory Mitigation for the Loss of Aquatic Resources, Final Rule, 33CFR 325 and 332, April 10, 2008.

Drainages, Ephemeral Washes, and Floodplains

While we are pleased that the Applicant has chosen to avoid direct impacts to the Pinto Wash and the aeolian sand deposits, we remain concerned with the scope of indirect and direct impacts to natural washes and site hydrology. Although specific Project objectives include "to minimize environmental impacts and land disturbance by locating the project near existing transmission infrastructure and roads and by avoiding sensitive environmental areas, recreational resources and wildlife habitats" (p. 1-10), the DEIS fails to consider the up and downstream reach and extent of waters or their importance in this landscape.

The Project would permanently or temporarily impact between 304 and 354 acres of California Department of Fish and Game (CDFG) jurisdictional resources subject to CDFG's Lake and Streambed Alteration Agreement Program (p. 4.3-3). In addition to filling gullies, removing topographic irregularities, and eliminating existing washes, construction grading activities could have direct effects on the water quality and hydrology of desert dry washes located downstream of the solar farm (pps. 4.17-20 and 4.3-4). These activities could indirectly affect desert dry wash woodlands downstream and adjacent to the Project site (including Pinto Wash) by creating opportunities for nonnative invasive weed species to colonize or spread (p. 4.3-5). The DEIS states that a total project loss of 10.5 percent of the desert dry wash woodland habitat in the Palen Watershed from existing and foreseeable future projects would constitute a significant cumulative impact (p. 4.3-84). These desert dry wash habitats likely serve as important wildlife movement corridors in the area (p. 4.4-9).

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, such as adequate capacity for flood control, energy dissipation, and sediment movement; as well as impacts to valuable habitat for desert species.

Recommendations:

To the extent any aquatic features that could be affected by the Project are determined not to constitute waters of the U.S., EPA recommends that the FEIS characterize the functions of such features and discuss potential mitigation.

To avoid and minimize direct and indirect impacts to desert washes (such as erosion, migration of channels, and local scour):

- do not place PV panel support structures in washes or desert dry wash woodlands,
- utilize existing natural drainage channels on site and more natural features, such as earthen berms or channels, rather than concrete-lined channels,

- commit to the use of natural washes, in their present location and natural form and including adequate natural buffers, for flood control to the maximum extent practicable,
- reconfigure the project layout, roads, and drainage channels to avoid ephemeral washes, including desert dry wash woodlands within the Project footprint, and
- minimize the number of road crossings over washes and design necessary crossings to provide adequate flow-through during storm events.

Discuss the availability of sufficient compensation lands within the Chuckwalla Valley watershed to replace desert wash functions lost on the Project site.

In order to address the potential impacts to on-site hydrology, the Applicant's primary mitigation measure is to decompact soil between solar panels to increase infiltration potential (p. 4.17-23). Additional mitigation measures may include placing riprap on the site, installing retention ponds upstream to capture run-on, constructing check dams to slow runoff within or at the downstream end of the site, and constructing strip detention basins to retain and slow runoff within the site (p. 4.17-22). We are particularly concerned that decompaction may result in indirect effects such as erosion and an increase in sedimentation to downstream channels. Retention basins and check dams may have indirect impacts associated with them as well.

Recommendation:
The FEIS should quantify the effectiveness of decompacting soils and the use of rip rap, check dams, retention ponds and strip detention basins to support the assertion that these measures would reduce the magnitude of change in onsite and offsite hydrology to within one percent of pre-development hydraulic conditions (p. 4.3-13).

The DEIS fails to evaluate mounting PV panels at sufficient height above ground to maintain natural vegetation and minimize drainage disturbance in order to avoid complete clearing and grading of the site. It is our understanding that other PV solar companies have proposed such designs which can reduce the need for site clearing and grading.

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.

We note that limited research has been conducted regarding effects associated with development on relatively flat topographical areas and alluvial fans in the Mojave Desert, and assumptions that the effects would be insignificant are contingent on the accuracy of surface water modeling. The DEIS fails to describe the expected post-Project flooding conditions and potential impacts to vegetation downstream.

Finally, if substantial maintenance would be needed based on the proposed Project design, the implementation mechanism, accountability, enforcement, and funding of such a program should

be identified. In general, the DEIS does not discuss the viability of mitigation, and mitigation specifics are deferred to a later approval process.

Recommendation:
The FEIS should include the results of the final hydrology report, site design and drainage plan and incorporate the following:

- description of how offsite flows will be collected and how erosion of offsite areas will be mitigated and identification of discharge points and flow controls for the sediment/retention basins' water,
- maintenance program necessary to prevent significant erosion and offsite damage and flooding, including the implementation mechanism, responsible parties, enforcement, and funding sources,
- description of the expected post-Project flooding conditions, potential impacts to vegetation downstream, and explanation of the basis for these expectations,
- modeled impacts (hydraulics of flow, velocity, sediment transport, sediment delivery and potential stream channel changes) of diverting drainages and floodplains,
- demonstration 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.

Fencing

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[2] 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 in the FEIS on the proposed fencing design and placement, and its potential effects on drainage systems on the Project site. Ensure that fencing proposed for this Project will meet appropriate hydrologic, wildlife protection and movement, and security performance standards. Describe those standards in the FEIS.

Groundwater

EPA supports the Project's proposal to minimize water use once in operation (p. 2-112); however, we are concerned about the potential groundwater drawdown and cumulative impacts to the Chuckwalla Valley Groundwater Basin and the Palo Verde Mesa Basin, associated with

[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,

the construction phase of the proposed Project in conjunction with the reasonably foreseeable projects in the vicinity.

Construction of the proposed 550 MW Project would require 1,300 to 1,400 acre-feet (AF) of water at an average pumping rate of 600 to 650 acre feet per year (AFY) over a period of 26 months (p. 4.17-3). The DEIS indicates that the source of this water has not been determined. It states that water demand could be met by local groundwater, either from nearby existing wells that are located in the Project study area or though a new, temporary well to be constructed closer to the Solar Farm site (pps. 2-81 and 4.17-3).

The DEIS relies on groundwater budgets for the Chuckwalla Valley Groundwater Basin prepared for the Palen and Genesis Solar Power Project DEISs (p. 4.17-4). The DEIS uses the Net Inflow Budget Balance in Table 4.17-1 to justify sufficient water supply to meet the Project needs.

Recommendation:
The FEIS should confirm the approved source of water for Project construction and quantify the combined water use, by year, from reasonably foreseeable projects projected to draw from the Chuckwalla Valley Groundwater Basin and Palo Verde Mesa Basin (including the Genesis, Blythe and Palen solar projects and the next five solar projects that have submitted Plans of Development to the BLM Palm Springs Office).

The DEIS acknowledges that, due to the high volume of projects in the region with potentially similar construction schedules, impacts to groundwater could be cumulatively considerable, leading to declining groundwater levels basin-wide during the construction period, and possible substantial local declines in water levels (p. 4.17-36). In conjunction with the neighboring Eagle Mountain Pumped Storage Project, groundwater levels could decline in excess of 6 feet in the vicinity of the Project (p. 4.17-37). 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. A drop in groundwater levels could also impact neighboring wells, lower the water table, and adversely affect groundwater-dependent vegetation and woodlands.

Recommendations:
The FEIS should: 1) incorporate mitigation and monitoring plans, for effects on groundwater levels and water quality, as proposed for the Genesis and Palen solar projects, 2) describe the effectiveness of, and commitments to, these mitigation and monitoring plans, and 3) address 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, and the utilization of existing or pending water rights in the basin.

The FEIS should describe the estimation of the impacts from withdrawing groundwater that is recharged by the Colorado River and incorporate and discuss the effectiveness of any 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 evaluate whether 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 as was discussed in the Genesis Solar DEIS. Such basin balance analyses for the cumulative effects to the Palo Verde Mesa Basin, as well as the Chuckwalla Valley Groundwater Basin, should be included in the DEIS.

As proposed in the DEIS, the FEIS and ROD should include as a condition of certification that there will be no water use for washing.

Biological Resources

Endangered Species and Other Species of Concern

The site supports a diversity of mammals, birds, and reptiles, including special status wildlife species. Grading on the Project site would result in direct impacts to special status animal species through the removal of vegetation that provides cover, foraging, and breeding habitat for wildlife. Depending on the alternative selected, between 3,045 and 4,245 acres of wildlife habitat would be permanently disturbed (p. 4.1-1). Long-term impacts may occur as a result of permanent loss of habitat, increased predation, and habitat fragmentation. In addition to desert tortoise, the Project site hosts nesting sites for the burrowing owl, as well as, foraging habitat for the northern harrier and golden eagle. It is conservatively estimated that the entire Project site falls within the active territory of a pair of golden eagles. The proposed Project would comprise 5.5% of the foraging habitat for this pair (p. 4.4-7). Further, the Gen-Tie Line and the Substation will contribute to between 176 and 390 acres of impacts to the Chuckwalla Desert Wildlife Management Area (DWMA) and the Chuckwalla Critical Habitat Unit (CHU) (p. 4.4-3). These areas are likely important movement corridors for the desert tortoise (p. 4.4-17).

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 (p. 4.4-1). 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:
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. We strongly recommend including 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 northern harriers should be included in the FEIS and, ultimately, the ROD.

EPA appreciates the extensive discussion on the impacts to desert tortoise. The Reduced Acreage Alternative – Alternative 3 - would reduce Project acreage by roughly 25% while potentially avoiding more than 60% of the desert tortoises on site. Additionally, the southwest portion of Alternative 3 appears to have a cluster of desert tortoise activity. 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.[3]

Recommendations:
We recommend adoption of the Reduced Acreage Alternative that could reduce impacts to desert tortoise by approximately 60%. In addition, modify the Project layout to further protect desert dry wash woodlands and to avoid high density desert tortoise habitat and activity on the southwest corner of the Reduced Acreage Alternative.

The FEIS should discuss the tradeoff between the Gen Tie Line B-2/Substation B alignment versus the Gen-Tie A-2/Substation A alignment. The Gen Tie Line B-2/Substation B combination effects far less Chuckwalla Desert Wildlife Management Area (DWMA) and Critical Habitat Unit (CHU) habitat; however, the Gen-Tie A-2/Substation A combination potentially impacts less desert tortoises. Incorporate USFWS recommendations as to which alignment provides the best long-term approach to protect biological resources and wildlife species and whether alternate Gen-Tie alignments and Substation locations would be preferable.

Mitigation Commitments

We note that a draft compensation plan has been included as an Appendix to the DEIS. We recommend the FEIS include the final compensation ratios for all direct and indirect impacts to sensitive habitat and species with the associated compensation costs. EPA remains concerned with the availability of suitable habitat to compensate for habitat losses for the Project, in addition to the multiple projects pending approval in the Chuckwalla Valley.

Recommendations:
Quantify, in the FEIS, available lands for compensatory habitat mitigation for this Project, the Palen, Blythe and Genesis solar projects, as well as reasonably foreseeable projects in the area (e.g. those that have submitted Plans of Development to date).

Quantify, in the FEIS, the extent to which the Chuckwalla Desert Wildlife Management Area (DWMA) has already been developed and calculate the additional percentage of the Chuckwalla DWMA proposed for development under each Project alternative.

[3] *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

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) exclude the non-developed portion of the subject 19,000 acre ROW from further disturbance or development based on this Project's resource analyses and the decision to select the proposed Project's footprint to minimize environmental impacts.

Include, in the FEIS, mitigation plans for unavoidable impacts to waters of the US and State, and biological resources such as desert tortoise, burrowing owls, golden eagles, and their habitats. Specifically, if the applicant is to acquire compensation lands, the location(s), management plans, implementation mechanisms, and funding for these lands should be fully disclosed.

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

Air Quality

EPA commends BLM for incorporating fugitive dust control measures to limit impacts from particulate matter 10 microns or less in size (PM_{10}), and mitigation measures to address exhaust emissions. 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 advocate minimizing disturbance to the natural landscape as much as possible, so that measures to reduce fugitive dust are not required or are minimized.

Recommendation:
The FEIS should describe the effectiveness of utilizing dust suppressants only once per year, as proposed in the DEIS, and how decompaction of soils may affect this effectiveness.

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 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.

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.[4] 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 Air Quality Analysis

Construction of the Genesis and Palen Solar projects as well as the transmission line projects (Devers-Palo Verde 2, Desert Southwest, and Green Energy transmission lines) may overlap with the proposed Project (p. 4.2-90). We note the construction schedule for the Project was included in Appendix B of the DEIS. However, the DEIS does not provide an equivalent analysis of construction emissions from the proposed Project, combined with the reasonably

[4] 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.

foreseeable projects in the area. Without further information about projects in the region, it is difficult to conduct a thorough cumulative impacts analysis.

Recommendations:
Discuss, in the FEIS, the cumulative emissions from the proposed Project combined with the Genesis and Palen Solar projects, as well as the transmission line projects (Devers-Palo Verde 2, Desert Southwest, and Green Energy transmission lines). In consultation with the local air quality management agency, we recommend this cumulative emissions data be used to develop an incremental construction schedule that will not result in any violations of local, state or Federal air quality regulations. EPA strongly recommends incremental construction on-site to ensure air quality impacts are limited and are sufficiently staggered.

The FEIS should provide technical justification for any projects that are deemed too far from the proposed Project to contribute to cumulative air quality impacts.

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.

Climate Change

EPA commends the BLM for devoting a substantive section of the DEIS to greenhouse gases (GHG), including detailed estimates of 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. Considering 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, particularly groundwater resources.

Recommendation:
EPA recommends that BLM provide information detailing what impacts climate change may have on the Project, particularly sensitive species, its sources of groundwater, and reclamation and restoration efforts after construction and decommissioning.

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.

We commend BLM for including a Reduced Acreage Alternative, as well as, consideration of EPA's RE-Power America disturbed sites. However, the DEIS eliminates all off-site, including

private lands alternatives, and alternative technology alternatives from consideration and full evaluation. 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 (p. 1-7). 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. The "project" Purpose and Need should address the need to generate renewable energy to reduce our dependence on fossil fuels as well as the Federal and State renewable energy targets, timelines, and underlying needs to which BLM is responding. BLM's purpose statement should be broad enough to allow for a reasonable range of alternatives, including off-site alternatives.

Recommendations:
The FEIS should reflect a 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 on private lands, and other modes of renewable energy generation. The FEIS should further explain how the Project meets those needs in the context of the many renewable energy project applications in the Desert Southwest and California.

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.

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 73 significant cultural resources including 6 prehistoric sites (p. 4.6-3). 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. The FEIS should 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.

Socio-Economic Analysis

The Desert Sunlight, Blythe, Palen, and Genesis projects are located within approximately 40 miles of one another. Thus, the region anticipates an influx of hundreds of workers. According to the Genesis Solar DEIS, combined construction for the Genesis, Blythe and Palen 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. The FEIS should discuss the additional workforce necessary for the proposed Project and how the construction schedule will overlap with those of other approved and reasonably foreseeable projects. We were pleased to note the DEIS included carpooling measures to the Project site from central off-site locations.

Recommendations:
We recommend the FEIS for all projects contain analyses of the impacts of the influx of workers on 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

final transit options (including formal Rideshare, Carpooling, and Bussing) and how they will service the other projects in the vicinity to transport workers from the nearest population centers to the remote project sites, as well as other measures to facilitate accessibility.

Provide supporting documentation for the estimate that 89.5% of workers would use shuttle buses.