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

MAY 20 2010

Mr. Greg Thomsen
Bureau of Land Management
California Desert District Office
22835 Calle San Juan de los Largos
Moreno Valley, CA 92553

Subject: Draft Environmental Impact Statement and California Desert Conservation Area Plan Amendment for the Proposed Chevron Energy Solutions Lucerne Valley Solar Project, San Bernardino County, California [CEQ# 20100033]

Dear Mr. Thomsen,

The U.S. Environmental Protection Agency (EPA) has reviewed the Draft Environmental Impact Statement (DEIS) and California Desert Conservation Area Plan Amendment (CDCAPA) for the Proposed Chevron Energy Solutions Lucerne Valley Solar Project (Project). Our review and comments are provided pursuant to the National Environmental Policy Act (NEPA), the Council on Environmental Quality (CEQ) Regulations (40 CFR Parts 1500-1508), and our NEPA review authority under Section 309 of the Clean Air Act (CAA).

EPA supports increasing the development of renewable energy resources in an expeditious and well planned manner. Using renewable energy resources such as solar power can help the nation meet its energy requirements while minimizing the generation of greenhouse gas emissions. While renewable energy facilities offer many environmental benefits, they are not without impacts. Appropriate siting and design of such facilities is of paramount importance if the nation is to make optimum use of its renewable energy resources without unnecessarily depleting or degrading its water resources, wildlife habitats, recreational opportunities, and scenic vistas.

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

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

On August 4, 2009, EPA provided extensive formal scoping comments for the Lucerne Valley Solar Project, which included a variety of detailed recommendations regarding purpose and need, range of alternatives, and resource areas of concern. Based on our review of the Lucerne Valley Solar DEIS, we have rated the document as *Environmental Concerns – Insufficient Information* (EC-2). Please see the enclosed "Summary of EPA Rating Definitions." An "EC" signifies that EPA's review of the DEIS has identified environmental impacts that should be avoided in order to provide adequate protection for the environment. A "2" rating signifies that the DEIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment.

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. Specifically, EPA is concerned with the: 1) lack of sufficient hydrological analysis and impacts to water resources; 2) impacts to biological resources and special status species; 3) scope of cumulative impacts analysis and the potential impacts from reasonably foreseeable future actions; 4) current justification for the Project purpose, need, and independent utility; 5) range of alternatives; and 6) discussion of climate change.

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 Final EIS 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 415-972-3521, or contact Carter Jessop, the lead reviewer for this Project. Carter can be reached at 415-972-3815 or jessop.carter@epa.gov.

Sincerely,

Kathleen M. Goforth

Kathleen M. Goforth, Manager
Environmental Review Office (CED-2)

Enclosures: Summary of EPA Rating Definitions
Detailed Comments

Cc: Jim Abbott, Bureau of Land Management, California State Office
Shannon Pankratz, US Army Corps of Engineers
Brian Croft, United States Fish and Wildlife Service
Becky Jones, California Department of Fish and Game

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 analyzed 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 analyzed in the draft EIS, which should be analyzed 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.

US EPA DETAILED COMMENTS ON THE DRAFT ENVIRONMENTAL IMPACT STATEMENT AND CALIFORNIA DESERT CONSERVATION AREA PLAN AMENDMENT FOR THE PROPOSED CHEVERON ENERGY SOLUTIONS LUCERNE VALLEY SOLAR PROJECT, SAN BERNARDINO COUNTY, CALIFORNIA, MAY 20, 2010

Project Description

Chevron Energy Solutions (CES) has submitted an application to the Bureau of Land Management (BLM) to construct a 45-megawatt (MW) solar photovoltaic (PV) plant and associated facilities on 516 acres of federal land approximately eight miles east of Lucerne Valley in San Bernardino County. The proposal includes an interconnection to an existing Southern California Edison (SCE) distribution line to the north of the site as well as an amendment to the California Desert Conservation Area (CDCA) Plan designating the site as suitable for renewable energy generation. While EPA is pleased with certain aspects of this Project, including the close proximity to existing infrastructure and maintenance of existing site topography, we recommend that the Final EIS (FEIS) provide additional analyses (including any necessary supporting documentation) and identify specific minimization or mitigation measures, as discussed below.

Hydrology and Water Resources

Ephemeral Washes

Natural washes perform a diversity of hydrologic and biogeochemical 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. EPA is concerned about the potential impacts to the ephemeral water segments located within the project area. The DEIS provides basic hydrologic information on the location of washes in the project area, but does not include a detailed map nor analysis of the origin and termini of these ephemeral waters.

Recommendations:

- Include a more detailed discussion and map of the water resources and hydrographic basins surrounding the proposed project.
- Include information on the functions and locations of ephemeral washes in the project area.

Flooding and Drainage

The DEIS states that the project site is prone to intense flooding events, including flash flooding (p. 3.5-5), however no floodplain studies nor mapping exercises have been conducted to assess flood hazards. In addition, the document states that "No hydrologic modeling has been done at this stage." (p. 2-16). Considering the lack of information regarding site hydrology and flood danger, it is impossible to properly assess the risks that the proposed project poses to local and regional hydrology, water quality, and human health.

Recommendations:

- Demonstrate that downstream flows will not be disrupted due to proposed site development.
- Include a functional assessment of the waters on the proposed project site and describe the changes to the function of those waters that would result from the proposed project.

The DEIS does not provide information about fencing (pg. 2-16) nor the effects of fencing on drainage systems. As previously discussed, storms in this region 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[1] 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 with this project.

Recommendation:

- Provide more detailed information about fencing and potential effects of fencing on drainage systems within the FEIS. Ensure that the fencing proposed for this project will meet appropriate hydrologic performance standards.

The DEIS includes a Modified Site Layout Alternative (Alternative 4). This alternative would redirect drainage on the site to a vegetated screen designed to screen views of the project for nearby residents and drivers on Santa Fe Fire Road (p. 2-24). This alternative is chosen as the BLM "Preferred Alternative" (p. 2-36). By rerouting drainage, this alternative would alter site hydrology, potentially impacting water quality, groundwater recharge, soil erosion, vegetation, and wildlife. The potential for such consequences is not addressed, however. In addition, insufficient information is provided on specifically how and where drainage would be rerouted.

Recommendation:

- Provide details on where and how drainage would be rerouted across the site under Alternative 4: Modified Site Layout.
- Analyze the potential impacts of Alternative 4 in greater detail, in particular considering impacts to hydrology, water quality, groundwater, soil, vegetation and wildlife.

Waters of the United States

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

We are concerned with possible impacts on waters of the U.S. (WUS). We understand the project proponent is re-evaluating whether or not any of the washes flowing through the proposed site may qualify as WUS. We encourage BLM to consult with the Army Corps of Engineers regardless of the outcome of that analysis. A jurisdictional determination of waters of the United States must be completed in order to determine whether waters of the US will be impacted by the proposed project. In addition, we understand from our correspondence with BLM that the washes that flow through the site terminate before reaching any known waters of the US; however, this is not discussed in detail in the document and this information should be provided in the interest of public disclosure.

Recommendation:

- Consult with the Army Corp or Engineers regarding a jurisdictional determination for the proposed project site, and include the results of that determination in the FEIS.

Biological Resources and Special Status Species

Desert Wash Communities

According to the DEIS, construction of the proposed Project is expected to result in direct loss of 18 acres of land characterized as desert wash communities (p. 3.6-7). In addition, the proposed Project will degrade the functions of waters throughout the site through the placement of road crossings, fencing, and photovoltaic cell posts. As noted above (see Hydrology and Water Resources, Ephemeral Washes) natural washes perform a diversity of hydrologic and biogeochemical functions that directly affect the integrity and functional condition of higher-order waters downstream, and ephemeral washes support unique plant populations and provide habitat for breeding, shelter, foraging, and movement of wildlife. Desert wash ecosystems are highly sensitive to disruption, and impacts to their natural state may be impossible to remediate

Recommendations:

- Avoid and minimize direct and indirect impacts to desert washes to the maximum extent practicable. Impacts to be accounted for and minimized include erosion, migration of channels, and local scour.
- Minimize the number of road crossings over washes in order to minimize erosion, migration of channels, and scour. Road crossings should be designed to provide adequate flow through during large storm events.
- 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.
- Demonstrate that downstream flows will not be disrupted due to proposed changes to any natural washes.

Special Status Species

The proposed project and any of the BLM action alternatives would result in direct impacts to vegetation and wildlife, including a number of special status species. EPA

recommends that the FEIS and ROD contain specific and binding commitments to the mitigation measures put forth in the Biological Assessment (BA) and DEIS. Furthermore, additional details regarding the mitigation measures to be employed would assist in the assessment of impacts to biological resources. For instance, mitigation measure MM BIO-12 (p. 4.6-15) would offset impacts to desert tortoises by preserving off-site desert tortoise habitat. Further details regarding the location and nature of this off-site compensatory mitigation should be provided, as available. In addition, we recommend that the BLM consider applying compensatory mitigation at a ratio higher than the 1:1 ratio put forth in the DEIS. As stated in the DEIS, the impacts to desert tortoise would likely extend beyond the project boundaries due to sensitivity to noise, vibrations, invasive species introduction, and collision with vehicles traveling to and from the site. We therefore recommend that compensatory mitigation be expanded to account for these additional impacts. Lastly, in the interest of full public disclosure, EPA recommends that the FEIS include the most up to date information available regarding the status of consultation with U.S. Fish and Wildlife Service and California Department of Fish and Game.

Recommendation:

- The FEIS and ROD should include specific and binding commitments to mitigation measures put forth in the BA and DEIS.
- Consider the implementation of compensatory mitigation under MM BIO-12 that exceeds the 1:1 ratio discussed in the DEIS.
- The FEIS should include the most up to date information available regarding the status of consultation with the US FWS and CDFG.

The DEIS contains a brief discussion of biological soil crusts or cryptobiotic crusts (p. 3.4-2). The analysis dismisses these crusts as not serving a critical role in dust suppression on the proposed project site, however no further details are provided. EPA recommends that this discussion be expanded to include details regarding the extent of biological soil crusts on the site, the role they play on the site, and any impacts the proposed project may have on these crusts.

Recommendation:

- Expand the discussion of biological soil crusts to include details regarding their extent on the proposed project site, the role they play on the proposed project site, and possible impact resulting from BLM action alternatives.

Cumulative Impacts Analysis

The BLM has received more than 220 ROW applications for utility-scale solar energy projects in California, Nevada, Arizona, New Mexico, Utah, and Colorado. We understand that BLM and the Department of Energy are jointly preparing a Solar Programmatic Environmental Impact Statement (PEIS); however, the DEIS does not include a discussion of the PEIS. The 24 solar energy study areas identified in conjunction with the Solar PEIS encompass 670,000 acres, and that area could be used to generate nearly 100,000 MW of solar electricity.

The DEIS lists 3 solar projects in close proximity to the proposed project, but limits the scope of the cumulative impact analysis to only those projects occurring within 6 miles of the proposed project site. The reasoning for limiting the scope of the cumulative impact analysis to

that radius is not provided. Without further information about projects in the region, it is difficult to conduct a thorough cumulative impacts analysis. The FEIS should include a more extensive analysis that defines the parameters of the analysis and the reasons for the establishment of those parameters.

Recommendations:

- Update the list of reasonably foreseeable projects to include all projects that may have impacts that may cumulatively affect the Lucerne Valley. In particular, the analysis should include discussions of the cumulative impacts on transmission capacity, water resources, and biological resources.
- Evaluate site conditions at locations with existing ROW applications. Determine and disclose whether the ROW applications are active and viable.

As an indirect result of providing additional power, it can be anticipated that this project will allow for development and population growth to occur in those areas that receive the generated electricity.

Recommendation:

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

Project Purpose, Need and Independent Utility

Project Purpose and Need

EPA believes the discussion in the DEIS regarding the purpose and need for the CES 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.

Building upon the comment above, the Purpose and Need for a project should be stated broadly enough to spur identification of the full range of reasonable range of alternatives, regardless of what the future findings of an alternatives analysis may be. The Purpose and Need should focus on the underlying problems to address (e.g., lack of capacity to serve an increasing demand for energy, or the need to develop sufficient renewable energy to meet State renewable portfolio standards). A solar power plant may be an integral component of the potential solution to the problems identified in a Purpose and Need discussion; however, the Purpose and Need statement should allow for the analysis of a full scope of alternatives, including off-site locations, environmentally preferable on-site alternatives or other modes of renewable energy generation.

The DEIS eliminates all off-site and alternative technology alternatives from consideration. In addition, the analysis of potential on-site alternatives was limited to the

proposed action, a single reduced project alternative and a single modified site layout alternative. This somewhat narrow range of alternatives is, in part, influenced by the Bureau of Land Management's (BLM) narrowly defined Purpose. According to the DEIS, BLM's purpose for the CES proposed action is "to approve, approve with modifications, or deny issuance of a Right-of-Way (ROW) grant to CES for the proposed solar project." (at p. 1-2). While this may be the immediate federal purpose of the project, we recommend that the FEIS use a combined BLM and Project Proponent Purpose and Need statement as the foundation upon which later sections, such as the alternatives analysis, are based. It would also be helpful to include a discussion of the types of modifications that BLM could require, the circumstances under which BLM is authorized to deny a ROW grant, and the consequences of such a denial. The purpose statement should be broad enough to allow for a reasonable range of alternatives, including environmentally preferable alternatives.

Recommendation:

- The FEIS should reflect a broader purpose and need statement that allows for a full evaluation of other alternatives, including off-site locations and other environmentally preferable on-site alternatives.
- The FEIS should explain BLM's options for acting upon an application for a right-of-way grant. For instance, it would be helpful if BLM would explain the extent of its authority in regards to requiring the adoption of a "modified" project alternative.

While the DEIS indicates that the need for the proposed action has its basis in Federal orders and laws regarding renewable energy generation, the current Purpose and Need section does not fully describe the specific Federal, State, and individual utility power provider renewable energy targets, timelines, and underlying needs to which BLM is responding. EPA believes this context is imperative for decision makers and the public to have, in light of the large number of renewable energy projects moving forward.

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

Recommendations:

- Fully describe the specific Federal and State renewable energy targets, timelines, and underlying needs to which BLM is responding, and explain how the Project meets those needs in the context of the many renewable energy project applications in the Desert Southwest and California.
- To the extent practicable, the FEIS should discuss how many of the total renewable energy applications received by BLM are likely to proceed pursuant to the joint Department of Energy (DOE)/BLM Programmatic Solar DEIS effort and the Desert Renewable Energy Conservation Plan (DRECP) process, and the level of energy production those applications represent.

- Further describe the utility purchases of power and provide a description of how the power would be bought, sold, and used so that the reader can better evaluate the tradeoffs between resource protection and power generation.

Project Independent Utility

The FEIS should clearly demonstrate the independent utility of the Project within its current geographic limits as it relates to the need for the Project. If the Project need cannot be met without future planned improvements, such as the reconductoring or further upgrading of the Southern California Edison transmission lines proposed to serve the site, the scope of the Project should be expanded accordingly, since these would be considered connected and similar actions (40 CFR 1508.25). In that case, the NEPA evaluation should include the full extent of the planned Project, including the necessary transmission lines and how it will operate. This broader scope should be applied to the identification and evaluation of project alternatives that may be less environmentally damaging. EPA believes this is the most effective way to address indirect and cumulative environmental impacts. The DEIS indicates that a separate environmental analysis would be conducted if further renovation of the SCE transmission lines were necessary; however, if the Project cannot meet its Purpose and Need without the transmission line project (thereby qualifying it as a connected action), the FEIS should address both projects together. Generally, funding or constraints of project staging and construction should not be used as a basis for segmenting the evaluation of environmental impacts under NEPA.

The DEIS indicates that "It has not been determined if upgrades to the existing 33-kV SCE distribution line, beyond the proposed reconductoring, would be required to accommodate Phase II" (p. 2-5). EPA recommends that the FEIS describe the current capacity of the existing transmission line and perform all necessary transmission analyses before the publication of the FEIS. The FEIS should also include a discussion of the existing transmission capacity compared to the future capacity after both reconductoring and any other potentially necessary upgrades. Considering the excess capacity that is stated to exist on the current transmission line (p. 2-15), the FEIS should consider an alternative that does not rely on the upgrade.

Recommendations:

- Demonstrate the independent utility of the Proposed Project within its current geographic limits as it relates to the need for the Project. If the Project need cannot be met without future planned improvements, the scope of the Project should be expanded accordingly by including an analysis of future improvements to the full extent of the planned Project, including the necessary transmission lines and how it will operate, since these would be considered connected and similar actions (40 CFR 1508.25).
- EPA recommends that the FEIS disclose: 1) the current available capacity of the existing Southern California Edison transmission line; 2) the estimated capacity of the transmission line following reconductoring and any other necessary renovation; and 3) to what degree the line is capable and expected to accommodate additional renewable energy generated in the Project's vicinity.

<u>Alternatives Analysis</u>

Reasonable Range of Alternatives

The DEIS presents an unduly limited alternatives analysis. EPA believes that the alternatives analysis needs to be expanded to include a full analysis of a reasonable range of alternatives.

CEQ Regulations for implementing NEPA (40 CFR, Parts 1500 - 1508) state that the alternatives section of an EIS should "*rigorously explore and objectively evaluate all reasonable alternatives, and for alternatives which were eliminated from detailed study, briefly describe the reasons for their having been eliminated*" (40 CFR, part 1502.14). All reasonable alternatives that fulfill the purpose of the project's purpose and need should be evaluated in detail, including alternatives outside the legal jurisdiction of the BLM (Council on Environmental Quality's (CEQ) Forty Questions[2], #2a and #2b). The more alternatives considered, the greater the possibility of avoiding significant impacts. "*Reasonable alternatives include those that are practical and feasible from the technical and economic standpoint and using common sense, rather than simply desirable from the standpoint of the applicant.*" (CEQ Forty Questions, #2a)

The DEIS states that "identifying alternative land is beyond the scope of this EIS" (p. 2-32); however, as stated at 40 CFR 1502.14 (c), the NEPA analysis must include a full range of alternatives, including those that may not be within the jurisdiction of the lead agency. For reasons stated earlier, EPA believes BLM's current Purpose and Need statement is too narrow. Furthermore, when eliminating alternatives from consideration, the DEIS provides insufficient justification. Each alternative was described and a qualitative reason for elimination was provided. This qualitative discussion of the reasons for eliminating alternatives does not identify a clear set of criteria that were used to screen all alternatives in a similar manner. For example, no criteria outlining thresholds for competitively priced renewable energy, minimal plant efficiency rates, and levels of air, water, or habitat impacts were provided. If such criteria were used, the criteria and resulting quantification of impacts should be incorporated into the FEIS. The alternatives analysis should be constrained based upon specific and, as appropriate, quantifiable criteria, such that only those alternatives that do not meet these specific parameters are eliminated from further consideration.

Recommendations:

- Provide a clear discussion of the reasons for the elimination of alternatives that are not evaluated in detail and provide a clear set of criteria to screen all alternatives. The potential environmental impacts of each alternative should be quantified to the greatest extent practicable. For example, the FEIS should include a matrix that rates each of the alternatives on each of the selection criteria and include this information in the Executive Summary.
- Clearly identify the economic criteria used for analyzing alternatives. As appropriate, fully consider alternatives rejected in the earlier analysis. The FEIS should also include a concise summary of any cost-benefit analyses preformed in the evaluation

[2]Forty Most Asked Questions Concerning CEQ's NEPA Regulations, 40 CFR Parts 1500-1508, Federal Register, Vol. 46, No. 55, March 23, 1981.

of the Proposed Project and the various alternatives. This information should also be included in the Executive Summary.

- Discuss how unquantified environmental impacts (such as a reduction in visual impacts) have been determined in the environmental analysis.

Consideration of Disturbed Site Alternatives

As additional alternatives are considered for evaluation in the FEIS, as well for future projects, EPA continues to recommend the identification of locations that have been previously disturbed or contaminated. The FEIS should discuss any methods or tools BLM has used to identify and compare locations for siting renewable energy facilities, and to ascertain whether or not any disturbed sites are available that would be suitable for the proposed project. For example, the EPA's Re-Powering America initiative works to identify disturbed and contaminated lands appropriate for renewable energy development. For more information on the project visit http://www.epa.gov/oswercpa/

Recommendations:

- EPA strongly encourages BLM to promote the siting of renewable energy projects on disturbed, degraded, and contaminated sites before considering large tracts of undisturbed public lands.
- The FEIS should include information regarding all criteria used to evaluate the CES site and alternatives.

Consideration of Additional Modified Site Layout Alternatives

The Action Alternatives carried forward for further analysis by BLM include CES's Proposed Action Alternative, a Smaller Project Alternative and a Modified Site Layout Alternative. The Modified Site Layout Alternative is modified so as to reduce visual impacts; however, in order to do so, it increases impacts to hydrology and water resources (see below). EPA recommends that additional alternatives designed to avoid impacts to desert washes be considered in greater detail.

Recommendations:

- Consider additional on-site "Modified Layout" alternatives, particularly those that avoid and/or minimize impacts to sensitive desert washes and their associated communities.

<u>Climate Change</u>

We commend BLM for the attention given to the issue of climate change (Section 3.1). However, the DEIS does not include measures to avoid, minimize, or mitigate the effects of climate change on the proposed project, nor does it discuss the extent to which climate change may alter the impacts of the proposed project on the environment. Scientific evidence supports the concern that continued increases in greenhouse gas emissions resulting from human activities will contribute to climate change. Effects on weather patterns, sea level, ocean acidification,

chemical reaction rates, and precipitation rates can be expected. These changes may affect the scope and intensity of impacts resulting from the proposed project.

Recommendations:

- Consider how climate change could affect the proposed project and the affected environment, specifically within sensitive areas, and assess how the impacts of the proposed project could be exacerbated by climate change.
- Identify strategies to more effectively monitor for climate change impacts in the surrounding area, such as monitoring groundwater change or special status species.
- Quantify and disclose the anticipated climate change-related *benefits* of solar energy. We suggest quantifying the greenhouse gas emissions that would be produced by other types of electric generating facilities (solar, geothermal, natural gas, coal-burning, and nuclear) generating comparable amounts of electricity, and compiling and comparing these values.

Miscellaneous Edits

The DEIS contains numerous inconsistencies. For example, while the text states that no intermittent streams or rivers exist on or adjacent to the site, the figures (such as 3.5-1) label hydrologic features running through the site as "intermittent stream / river". Furthermore, the discussion of the outcome of the desert tortoise survey at 3.6-21 does not agree with the data presented on figure 3.6-3. A number of such inconsistencies exist in the document. Please correct these errors.