

**SONORAN SOLAR ENERGY
ENVIRONMENTAL IMPACT STATEMENT
PUBLIC AND AGENCY SCOPING REPORT**

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1.0 INTRODUCTION

1.1 Background Information

Boulevard Associates, LLC, the proponent of the Sonoran Solar Energy Project (project), is seeking a right-of way (ROW) grant from the Bureau of Land Management (BLM) to construct and operate an electrical generating facility with a nominal capacity of 375 megawatts (MW), using concentrated solar thermal (CST) power on BLM-managed lands south of the Town of Buckeye in Maricopa County, Arizona. The project would require up to 4,000 acres of land. Related linear facilities would consist of a 500 kilovolt (kV) transmission line, water supply facilities and pipeline, a natural gas pipeline, and access roads.

To comply with the requirements of the National Environmental Policy Act (NEPA), the BLM is preparing an environmental impact statement (EIS) to disclose the potential environmental impacts associated with the project's construction and operation, and to consider alternatives to the Boulevard proposal. This EIS process will inform the public and agencies about the potential impacts the project may have on human and natural resources.

As part of NEPA requirements, a notice of intent (NOI) to prepare the EIS was published in the *Federal Register* on July 8, 2009 (Appendix A). Publication of the NOI initiated a 60-day formal public and agency scoping period, during which the BLM solicited comments regarding the project and its potential impacts. The BLM held public and agency scoping meetings for the EIS in Phoenix, Arizona, and public meetings in Buckeye and Gila Bend, Arizona, to provide information on project planning activities to date and to give agency personnel and members of the public the opportunity to ask questions of the BLM's Lower Sonoran Field Office Manager, Emily Garber; Deputy State Director, Mike Taylor; National Project Manager, Joe Incardine; as well as staff from the project proponent, Boulevard Associates. Meeting attendees were also able to provide comments on the issues and alternatives that will be included in the EIS.

1.2 Purpose

This scoping report is intended to aid in clarifying preliminary issues, concerns, and opportunities, determining the appropriate scope of environmental analysis, and gathering new input on alternatives development from comments received in response to the July 8, 2009 NOI (see Appendix A). It summarizes public and agency comments received during the scoping period, describes the analysis of those comments, and provides a preliminary list of issues, concerns, and opportunities for analysis in the EIS. All substantive issues raised by respondents within the scope of the BLM's decisions will be included in the EIS, as will other resource categories and issues (e.g., visual resources, cultural resources) that are required by BLM but that were not mentioned specifically by respondents.

1.3 Document Organization

This document contains summary descriptions of the following:

- Scoping meetings, including advertising leading up to the meetings and opportunities for public and agency comment during the scoping period
- Scoping content analysis process, including how individual letters and comments were coded and tabulated
- Scoping comment summaries, organized by resource

- Appendices containing copies of the NOI, meeting advertising and outreach materials, meeting sign-in sheets, meeting presentation materials and handouts, scoping comment respondent contact information, and all comments received during the scoping period (July 8, 2009 to September 8, 2009) in a tabular format

As part of the NEPA process all comments are given equal consideration, regardless of the method of their transmittal.

2.0 DESCRIPTION OF FORMAL SCOPING MEETINGS

Three public scoping meetings and one agency scoping meeting were held for the project (Table 1).

Table 1. Formal Scoping Meeting Dates, Times, and Locations

Date	Time	City, State	Address
Public Scoping Meetings			
August 4, 2009	6:30–8:30 PM	Phoenix, Arizona	BLM National Training Center, 9828 N. 31st Ave
August 5, 2009	6:30–8:30 PM	Buckeye, Arizona	Buckeye Union High School, 1000 E. Narramore
August 6, 2009	6:30–8:30 PM	Gila Bend, Arizona	Gila Bend High School, 308 N. Martin Ave
Agency Scoping Meeting			
August 4, 2009	2:00–4:00 PM	Phoenix, Arizona	BLM National Training Center, 9828 N. 31st Ave

2.1 Meeting Advertising

Pursuant to NEPA requirements, the scoping meetings were advertised in a variety of formats (Table 2; Appendix B) at least 12 days prior to their scheduled dates. In each format, the advertisements provided logistics, explained the purpose of the scoping meetings, gave the schedule for the public and agency comment period, outlined additional ways to comment, and provided methods of obtaining additional information.

Table 2. Advertising of Formal Public and Agency Meetings

Newspaper Advertisements
Newspaper display advertisements were placed in the Arizona Republic on July 25, 2009; July 29, 2009; July 31, 2009; August 1, 2009; and August 5, 2009.
Newspaper display advertisements were placed in the West Valley View on July 21, 2009 and July 24, 2009.
A newspaper display advertisement was placed in the Gila Bend Sun on July 23, 2009.
Media Notices and Other Forms of Advertising*
A news release was posted July 8, 2009 on the BLM website and was e-mailed or faxed to print, television, and radio media representatives statewide (see Appendix B).
Meeting information was posted on the BLM's website, http://www.blm.gov/az/st/en/prog/energy/solar/sonoran_solar.html , on July 8, 2009.
Letters and Postcard Invitations
A total of 844 "Dear Interested Party" invitational letters were mailed the week of July 7, 2009 to a mailing list comprising past BLM project contacts, Logan Simpson Design Inc. (LSD) project area contacts, adjacent property owners obtained from county assessor's web site, and special interest groups (environmental, elected officials, business interests, recreational, and tribal).
A postcard was mailed on July 27, 2009 to the same mailing list, announcing the extension of the public comment period from August 10, 2009 to September 8, 2009.

Table 2. Advertising of Formal Public and Agency Meetings

Tribal consultation letters were sent on July 6, 2009 to 15 individuals representing the following 8 tribes: Ak-Chin Indian Community, Fort McDowell Yavapai Nation, Gila River Indian Community, Hopi Tribe, Pascua Yaqui Tribe, Salt River Pima-Maricopa Indian Community, Tohono O'odham Nation, and the Yavapai-Prescott Indian Tribe.

Cooperating agency invitation letters were sent to on July 7, 2009 to 20 potential cooperating agencies.

Neighborhood Outreach and Flyers

Staff from LSD visited various community outlets, such as community centers, libraries, grocery stores, city offices, and recreational outlets in Avondale, Goodyear, Buckeye, and Gila Bend, Arizona to distribute flyers announcing the public meetings and to encourage attendance.

LSD staff conducted 60 personal telephone calls to key stakeholders identified by the BLM to provide project and scoping meeting information.

*Meeting announcements on the BLM website were all available in 508-compliance format and provided information on how to request special accommodations per ADA or for translation services.

2.2 Meeting Set-up

The scoping meetings provided an open-house period, formal project presentation, and question and answer period. Attendees were greeted at the entrance and asked to provide contact information on meeting sign-in sheets. Attendees were informed about the meeting format and were given a scoping comment form and a question card, on which they could submit written questions to be answered during the question and answer phase of the meeting (Appendix C). Attendees were informed about ways to submit comments to the BLM (including the location of a comment box in the meeting room) and were informed about the flow of information on the display boards in the room. A Spanish translator was also present to assist with any translation requests.

After meeting sign-in and seating, the BLM project manager introduced the BLM and Boulevard Associates meeting presenters, and a Microsoft PowerPoint overview of the project was presented (see Appendix C). The presenters were as follows:

- BLM Lower Sonoran Field Office Manager, Emily Garber
- BLM Deputy State Director, Resources, Mike Taylor
- BLM National Project Manager, Joe Incardine
- Project Proponent Boulevard Associates Project Management Team

Following the presentation, the BLM project manager read off the questions that had been submitted on question cards, and the questions were answered by the appropriate BLM or proponent staff. Attendees were also encouraged to seek out appropriate staff for answers to their questions during the open-house portion of the meeting.

Eleven BLM informational display boards (see Appendix C) were arranged in stations around the meeting rooms in the following order for review during the open-house portion of the meeting:

1. Explanation of Solar Programmatic EIS
2. Explanation of renewable energy initiatives and Solar Programmatic EIS
3. Explanation of the BLM mission
4. Description of the field office locations of BLM's Arizona offices
5. General description and BLM's project propose and need and the proponent's objective
6. Location map of pending solar ROW applications in Arizona
7. General project description and BLM decisions to be made
8. List of preliminary environmental and compliance considerations, by resource

9. Schedule of the project's EIS process
10. Overview of NEPA process
11. Explanation of the importance of public comment and a description of comment methods and scoping comment deadline

Seven proponent informational display boards were also included (see Appendix C):

1. Graphic depiction of the concentrated solar trough technology and generation process
2. Project area aerial and site photographs
3. Examples of concentrated solar trough technology projects in California
4. Schematic of the proposed generation facility layout
5. Description of the relationship between Boulevard Associates and its parent company NextEra Energy Resources
6. Location map of Boulevard Associate's wind and solar portfolio
7. Overview of Boulevard Associate's community involvement activities

At each information station, BLM staff and resource specialists from the EIS consultant team were available to answer questions. Refreshments were provided at each meeting.

2.3 Methods for Public and Agency Comment

Members of the public and representatives of agencies were afforded several methods for providing comments:

- Comments could be recorded on comment forms at the scoping meetings. Comment forms (see Appendix C) were provided to all meeting attendees and were also available throughout the meeting room and at an informational station where attendees could write and submit comments during the meeting.
- E-mailed comments could be sent to a dedicated e-mail address: sonoransolar@blm.gov.
- E-mailed comments could be sent to National Project Manager, Joe Incardine's e-mail address: Joe_Incardine@blm.gov.
- Individual letters and comment forms could be mailed via United States (U.S.) Postal Service to BLM Phoenix District Office, Sonoran Solar Energy Project, ATTN: Joe Incardine, 21605 N. 7th Ave., Phoenix, AZ 85027.

3.0 SCOPING CONTENT ANALYSIS

3.1 Comment Processing

Each comment letter or form was numbered sequentially (beginning with 1) and labeled with a comment type code indicating the entity from in which it was received (Table 3).

Table 3. Comment Type Codes

Type	Type Code
Individual	I
Government Agency	G
Non-Government Organization (special interest)	O
Business	B
Tribe	T

This combination of number and comment type code results in a unique alphanumeric identifier for each individual letter or form submitted. This system provides ease in referencing and cross-checking the letters and forms received and the comments contained within them.

3.2 Comment Analysis

After all letters and forms were labeled with alphanumeric identifiers, each was reviewed for the specific comment(s) it contained. Each letter or form may contain one or multiple comments, and each comment was categorized and coded by resource issue or topic. Comments were assigned codes corresponding to their respective issue (Table 4). For example, a comment concerning dust during construction would be coded as AQ to identify it as an air quality resource issue. This form of analysis allows for specific comments to be captured and grouped by general topic or resource issue.

Table 4. Resource Issue Identification

Resource Code	Resource Issue
ALT	Alternatives
AQ	Air Quality
CC	Climate Change
CUL	Cultural Resources
CUM	Cumulative Impacts
HAZ	Hazardous Materials
LR	Lands and Realty
LU	Land Use
MISC	Miscellaneous
MIT	Mitigation
NOIS	Noise
OPR	Operations
PN	Purpose and Need
PRO	Process
REC	Recreation
SOC	Socioeconomics
SD	Special Designations
SOL	Soils
TES	Threatened and Endangered Species
TRAN	Transportation
VEG	Vegetation
VIS	Visual Resources
WAT	Water
WL	Wildlife

3.3 Comment Disposition

After specific comments were categorized and coded by resource issue, they were also coded according to their disposition. A comment's disposition refers to the way in which it would be addressed in the EIS. Within this analysis, comments fell into one of six disposition categories (Table 5).

Table 5. Comment Disposition

Disposition Code	Comment Disposition	Explanation
PRO	Process	Identifies certain elements of the NEPA process that must be documented and disclosed in the EIS, but does not require specific resource analysis in the EIS
PN	Purpose and Need	Requires additional documentation or clarification of the project Purpose and Need
ALT	Alternatives Development	Requires analysis of existing alternatives or consideration of new alternatives
IA	Impacts Analysis	Requires EIS analysis of impacts to specific resources of concern
OOS	Out of Scope	Comments that are not within the scope of the BLM's decision regarding the project, or are otherwise not substantive and not addressed in the EIS.
NS	Non-substantive	

4.0 SUMMARY OF SCOPING COMMENTS FROM LETTERS AND FORMS

Substantive scoping comments fell into the following four broad disposition categories described in Table 5: Process, Purpose and Need, Alternatives Development, and Impacts Analysis (including resource-specific concerns and cumulative impacts). Comments are summarized below in narrative form for each resource issue area (e.g., all comments specific to wildlife are included under the Wildlife category; all comments specific to visual resources are in the Visual Resources category). This section represents a summary of the formal comments received during public and agency scoping. A more detailed record of all formal comments is arranged by category and can be found in Appendix D. Additionally, a scanned copy of all letters received during the scoping period can be found in Appendix E.

The narrative summary is organized in the following order:

- Process
- Purpose and Need
- Alternatives
- Impacts Analysis (listed alphabetically by resource including operations, followed by cumulative impacts, miscellaneous, and mitigation)

4.1 Process

Respondents noted that the project would require consultation with a variety of applicable federal agencies and government-to-government consultation with American Indian Tribes. It was also suggested that the Arizona Game and Fish Department (AGFD) review the project.

Respondents commented that the project was high profile, and they suggested a comprehensive public involvement program, including additional meetings, noting the opportunity to educate public about solar energy.

Respondents also suggested that the BLM prioritize renewable energy projects, improve its process for solar development by incorporating additional best management practices (BMPs), and refine the application process to reflect differences between solar and other energy projects. It was suggested that the process incorporate the work of current ongoing multi-stakeholder processes aimed at identifying environmentally appropriate areas for solar energy development in Arizona and the West, including the Arizona Renewable Resource and Transmission Identification Task Force, the Western Governors' Association's Western Renewable Energy Zone process, and the BLM's plan to develop a programmatic EIS on solar energy. Respondents suggested that the use of these groups' solar development criteria could help guide renewable development (principally solar development) to areas with comparatively low potential for conflict and controversy in order to facilitate their timely development and "fast track" projects that may be able to qualify for stimulus funding through the American Recovery and Reinvestment Act of 2009 by breaking ground by December 2010.

Respondents also recommended that the NEPA process be streamlined for non-carbon-based energy source projects, and suggested potential establishment of a nationwide permit system. Respondents also suggested that the ROW lease be for 99 years and that transmission access process for non-carbon based transmission projects be completed within 90 to 120 days.

Respondents also suggested that the BLM conduct a thorough analysis of the anticipated costs of decommissioning and restoring the project site, and that they require the purchase of bonds prior to development to ensure adequate funds are available for complete restoration of the project site after the project is retired or abandoned.

Respondents also provided information on several permits that may be required:

- A general permit is required for stormwater discharge associated with construction activities with a disturbance of 1 acre or more under Arizona Pollutant Discharge Elimination system.
- A multi-sector general permit (MSGP) is required of industrial sites that discharge stormwater associated with industrial activities. It was noted that the Arizona Department of Environmental Quality's (ADEQ's) new Arizona-specific permit would not be issued until early 2010, but recommended that the proponents develop a Stormwater Pollution Prevention Plan (SWPPP) and implement all control measures of the new EPA MSGP 2008, upon which the new Arizona permit is based.
- A wastewater individual Aquifer Protection Permit (APP) would be required if daily design flows are anticipated to be in excess of 24,000 gallons per day. It was noted that discharging electrical generating facilities over 100 MW automatically require an individual APP. Respondents also recommended close consultation with the engineering review section of ADEQ to determine if the project is subject to state or county review.

Contact information was provided for each of the potential permits. It was also noted that a new drinking water distribution system has been delegated to Maricopa County Environmental Services Department, and that new public water systems must also apply to the capacity assurance development program.

Comments in this category also included requests for scoping meeting information and requests to be added to the mailing list, as well as responses to cooperating agency invitation requests.

4.2 Purpose and Need

Respondents noted that the EIS's Purpose and Need should include a clear, objective statement of the rationale for the proposed project and should discuss the proposed project in the context of the larger energy market that this project would serve. Respondents also noted that it should 1) identify potential purchasers of the power produced; 2) discuss how the project would assist the state in meeting its renewable energy portfolio standards and goals; 3) identify which fossil fuel plants would be expected to reduce their fuel use; 4) identify any other solar site being developed in Arizona.

Respondents also inquired about appropriate acreage needs for the project, i.e., why the application encompassed 14,000 acres if only 3,600 acres are needed for the facility, and if the lease could/would be extended to include the full 14,000 acres? It was also asked if the lease would extend to transportation corridors and if so, would corridor use be restricted in a way that would prevent other compatible facilities from using those corridors.

4.3 Alternatives Development

Comments about the proposed action or range of alternatives fell chiefly into two categories: 1) development of the range of alternatives to be examined in the EIS and 2) methods and presentation of a comparative analysis of impacts.

4.3.1 Range of Alternatives

Respondents noted that NEPA requires consideration of a range of management alternatives and encouraged the BLM to engage in a broader landscape-level assessment of solar development in the desert, and to thoroughly present the public with 1) a true range of alternative sites in the EIS, including, but not necessarily limited to, alternative sites, capacities, and technologies; 2) alternatives that identify environmentally sensitive areas or areas with potential use conflicts, and 3) alternatives that may not be within the jurisdiction of the lead agency. It was also noted that the EIS must provide a clear discussion of the reasons for the elimination of alternatives that are not evaluated in detail.

Respondents requested a description of how each alternative was developed, how it addresses each project objective, and how it would be implemented. Respondents suggested that the alternatives analysis should include a discussion of alternative sites, capacities, and generating technologies, including different types of solar energy technologies, and should describe the benefits associated with the proposed technology.

Alternatives to the Proposed Project

Respondents requested that the EIS examine the feasibility of using residential and wholesale distributed generation, in conjunction with increased energy efficiency, as an alternative to the proposed project.

Alternative Capacities and Technologies

Respondents requested that the EIS provide the energy profile (capacity factor and time of energy output) that is desired from the plant so the public would have a better understanding of the project's proposed use of gas. It was noted that a thermal energy storage option is clearly economically feasible because it is being used for two other projects, and respondents suggested that thermal energy storage be considered as an alternative means of meeting peak-related energy demands. Other suggestions for reducing natural gas usage included expanding the plant's solar field to replace the thermal input provided by gas.

Respondents also suggested that a less water-intensive system that does not add significantly to the cost of generating electricity be considered and analyzed in the EIS to determine whether these options may be technically and economically viable and whether they could minimize potential impacts to water resources and other related environmental impacts. Suggested alternatives included the use of hybrid or dry cooled systems or replacing trough technology with photovoltaic (PV). Respondents requested clarification regarding the differences between a PV plant and a solar thermal plant, the rationale regarding the proponent's choice of parabolic trough technology over PV, as well as information regarding the conditions by which PV would become preferable to trough technology at this site.

Other portions of the proposed action that were questioned by respondents included the number of water wells within the well field and the size of power lines and poles. Respondents suggested the underground placement of the proposed new 4 miles of transmission line.

Alternative Sites

Respondents noted that the consideration of alternative sites and configurations is critical to ensuring the project site chosen is the best possible location for the project and meets the requirements of NEPA. This consideration should be based on solar resource, proximity to existing transmission and infrastructure, and conflicts with other resources and values on the project site.

Respondents requested that the project coordinate with utility companies to ensure that location or design of new transmission lines would not impact operation, maintenance, and reliability of other existing facilities, including proposed lines that have not yet been constructed. Respondents also noted a potential conflict with a proposed freeway that would run through the project corridor, and requested that the BLM, Maricopa Association of Governments, Arizona Department of Transportation (ADOT), and the consultant meet to discuss the potential conflict.

Respondents also questioned the use of a "wild" area for the project, as opposed to adjacent private lands that have already been disturbed, and questioned whether it was the best use of public land. Respondents asked for information regarding the choice of the well site location and potential for expansion, and requested that the power generating plants be situated to minimize visual and noise impacts on nearby future residential developments.

4.3.2 Alternatives Analysis

Respondents requested that the analysis of alternatives describe the approach used to identify environmentally sensitive areas and describe the process that was used to designate them in terms of sensitivity (low, medium, and high). Respondents requested that the potential environmental impacts of each alternative be quantified to the greatest extent possible (e.g., acres of wetlands impacted, tons per year of emissions produced, etc.) and presented in comparative form, thus sharply defining the issues and providing a clear basis for choice among options by the decision maker and the public. Respondents requested that the EIS clearly describe the rationale used to determine whether impacts of an alternative are significant or not, and that the thresholds of significance be determined by considering the context and intensity of an action and its effects.

4.4 Impacts Analysis (including Operations, Mitigation, and Cumulative Impacts)

Air Quality

Respondents requested that the EIS describe and estimate air emissions from construction, operation, and maintenance activities associated with the proposed power plant, and that it include mitigation measures to minimize those emissions. Respondents recommended that the EIS include a discussion of ambient air conditions, National Ambient Air Quality Standards (NAAQS), and criteria pollutant non-attainment areas in all areas considered for solar development. They also recommended that the analysis should

specify 1) the emission sources by pollutant from mobile sources, stationary sources, and ground disturbance; 2) the timeframe for release of these emissions over the lifespan of the project; and 3) the proposed mitigation measure to minimize these emissions.

Respondents noted that the BLM and Boulevard Associates need to provide an estimated range for the amount of carbon dioxide that would be generated annually by the plant's operation to facilitate that analysis and help the public understand the project's use of natural gas.

Respondents also requested that the EIS include an analysis of the cumulative effect of a natural gas plant's operation to Region One's hour and eight-hour non-attainment zone for ozone and the non-attainment zone for carbon monoxide.

Respondents expressed specific concerns about facility emissions, vehicle emissions, and dust control for the approximately 4,000-acre project area and associated access roads both during facility construction and operation phases. Respondents asked if the roads would be paved and wondered what kind of dust controls would be used during construction. It was suggested that the EIS identify the need for a fugitive dust control plan. Specific recommendations for the plan included:

- stabilizing open storage piles by covering and/or applying water chemical/organic dust palliative where appropriate to both inactive and active sites, during workdays, weekends, holidays, and windy conditions;
- installing wind fencing and phase grading operations where appropriate, and operating water trucks for stabilization of surfaces under windy conditions;
- preventing spillage and limiting speeds to 15 miles per hour (mph) when hauling material and operating non earth-moving equipment;
- limiting speed of earth-moving equipment to 10 mph; and
- leaving small plants and cryptobiotic crust in place, where possible, to help keep dust down.

Respondents also suggested that the EIS identify the need for an equipment emissions mitigation plan (EEMP) to identify actions to reduce diesel particulate, carbon monoxide, hydrocarbons, and NOx associated with construction activities for equipment such as drilling equipment, generators, compressors, graders, bulldozers, and dump trucks. Specific recommendations to be included in the plan consisted of:

- construction-related engines operate according to engine manufacturer's specification in accordance with an appropriate timeframe; not be tampered with in order to increase engine horsepower; and not idle for more than five minutes (unless, in the case of certain drilling engines, it is necessary for the operating scope);
- construction-related engines to include particulate traps, oxidation catalysts, and other suitable control devices on all construction equipment used at the project site;
- construction-related engines to use diesel fuel having a sulfur content of 15 parts per million or less, or other suitable alternative diesel fuel, unless such fuel cannot be reasonably procured in the market area; and
- construction-related engines to include control devices to reduce air emissions. The determination of which equipment is suitable for control devices should be made by an independent licensed mechanical engineer.

Climate Change

Respondents noted that the BLM would need to do a thorough analysis of the project's carbon footprint to determine the overall impact of the project. Respondents suggested that the EIS comprehensively analyze the project's net reductions to greenhouse gas (GHG) emissions, including GHG emissions during manufacture, construction, operation, decommissioning, and reclamation of the project site. Respondents

indicated the results of this analysis should then be compared to similar analyses for fossil fuel-based energy production, including combined-cycle natural gas fired and coal fired power plants. It was also suggested that the EIS quantify and disclose GHG emissions from geothermal, natural gas, and nuclear facilities.

Respondents requested that the analysis also consider the potential for the project to *increase* GHG emissions by disturbing undisturbed land currently useful for carbon sequestration. Respondents suggested that the EIS discuss whether the trenching, grading, and filling associated with the construction of the project and the installation of the solar troughs would affect the desert's ability to store carbon, and to what degree this may occur.

Additionally, it was requested that the EIS analyze how climate change could potentially influence the proposed project and how those changes might exacerbate any projected impacts to sensitive areas or resources. Specific concerns included 1) how the reliability of the water supply required for the project could be affected by climate change, and how the proposed project would adapt to those changes; and 2) how the cumulative impacts of multiple large scale solar projects could be affected by climate change.

Cultural

Respondents recommended that the EIS address the existence of Indian sacred sites in the project area and discuss how the BLM would avoid adversely affecting the physical integrity of sacred sites, if they exist. It was requested that the EIS provide a summary of all coordination with tribes and with the state historic preservation officer/tribal historic preservation officer, including identification of sites eligible for the National Register of Historic Places (NRHP) and development of a cultural resource management plan. It was also requested that the EIS thoroughly analyze the impacts, and that it include an alternative that minimizes and mitigates impacts to cultural resources, including how cultural resources would be handled/treated if found.

One respondent emphasized the importance of proper coordination of the National Historic Preservation Act (NHPA) and NEPA compliance actions to ensure that adverse effects to historic properties are adequately considered. This action would be pursuant to the Section 106 regulations, including proper coordination with Native American Tribes as a central component of the consultation process.

Hazardous Materials

Respondents requested that the EIS address potential direct, indirect, and cumulative impacts of hazardous waste from construction and operation of the proposed project, including the applicability of state and federal hazardous waste requirements. It was requested that mitigation be evaluated, including hazardous waste minimization and alternate industrial processes using less toxic materials.

One respondent recommended that the proponent strive to address the full product life cycle by sourcing parabolic trough components from a company that 1) minimizes environmental impacts during raw material extraction; 2) manufactures parabolic troughs in a zero-waste facility; and 3) provides future disassembly for material recovery for reuse and recycling.

Land Use

Respondents expressed concern over the unincorporated portions of the project area. The majority of the project area is within the town limits of the City of Buckeye, but there are portions of the project area that are unincorporated. In particular, respondents requested that the applicant contact the Maricopa County Planning and Development Department to secure the proper entitlements to lawfully construct and operate in unincorporated Maricopa County.

Respondents generally had concerns with the proposed project's compatibility with other local, regional, county, state, tribal, military, and federal planning efforts, including existing plans and future planning

efforts. Respondents were interested in knowing how the project would work together with other planning efforts to achieve both parties' planning and operational goals. Respondents also expressed interest on how the project would affect existing, surrounding land use, including recreation, access, mining activity, and development potential. Some respondents inquired as to what the land within the application area that is not slated for development—approximately 10,000 acres—would be used for. Additional concerns included inquiries about the potential for the BLM to sell or lease isolated land holdings to interested parties.

Noise

Respondents asked about the level of noise that was expected to be generated by the facility in relation to ambient noise levels. Concern was expressed about the potential for noise impacts to residential development within the City of Goodyear. Concerns were also expressed regarding noise generated by the facility due to its proximity to the North Maricopa Wilderness Area. It was expressed that the area's natural quiet is a key wilderness value, and that the impacts of this project on the natural quiet should be thoroughly evaluated and that measures to limit and mitigate noise should be incorporated.

Operations

Respondents had both general and more technical questions about the construction and operation of the proposed facility. Generally, respondents wanted to know what the largest "obstacles" to the project might be. Respondents also requested specific information on various aspects of the process, including the characteristics of the heat transfer fluid (HTF), what would happen to equipment during dust storms, how high the solar panels would be above ground, and what minimum amount of gas generation is needed to prevent freezing of the HTF if the plant had "molten salt storage" in place of gas backup. Other information requested included when the facility would be operational, how many employees would staff the project, and what the method for awarding construction contracts would be. Respondents also asked for confirmation that the plant would generate its 375 MW during the day and generate no power at night.

Recreation

The respondents inquiring about recreation issues generally had concerns about how the project would affect access to the Sonoran Desert National Monument and other public land that is used for recreational pursuits, such as off-highway vehicle use, hiking, and hunting. Of particular concern was how the project would work to preserve existing access used for recreational pursuits.

Socioeconomics

Respondents were concerned with how the project would affect the economy, both locally and county-wide; specifically, some respondents inquired whether the project would result in tax breaks or incentives and wanted to know what the expected revenue of the project would be. Some respondents wanted assurance that the power generated by the project would be available to Arizona customers.

Some respondents expressed interest about how to apply for construction or operational employment with the project. Also, respondents inquired on who would provide emergency and safety services for the project. Respondents were concerned with how the project would assess and evaluate potential impacts to low income and minority (environmental justice) populations.

Soils

Respondents stated that they were concerned about impacts to soil resources, including cryptogammic crust, cyanobacteria, mosses, and lichens. They requested that the BLM dedicate adequate time and resources early in the planning process for a thorough analysis of the impacts on the soils and any biological soil crusts. Respondents added that the analysis should include the preparation of a detailed

drainage, erosion, and sediment control plan that would address these potential impacts and should provide mitigation measures that would render these hazards to a less-than-significant level.

Special Designations

Respondents expressed concern that the project site is in proximity to a designated wilderness area and a national monument. Respondents noted that the project area does not contain areas of critical environmental concern (ACECs) or lands proposed as having wilderness characteristics.

Threatened, Endangered, and Special Status Species

Respondents requested that the BLM seek input from and consult with the AGFD concerning impacts to wildlife and noted special status wildlife species within 5 miles of the project.

Respondents asked that all threatened and endangered species (both those currently listed and those whose status is pending) be prioritized and included in the biological assessment (BA) and EIS, that baseline conditions of the species and their habitats be determined, that potential impacts analyzed, and that BMPs developed, and mitigation and conservation measures be prescribed.

Respondents specifically referenced concern about impacts to the following threatened, endangered, and special status species:

- California barrel cactus
- Least bittern
- Sonoran desert tortoise
- Southwestern willow flycatcher
- Tucson shovel-nosed snake
- Western burrowing owl
- Yellow-billed cuckoo
- Yuma clapper rail

One respondent requested that the EIS disclose the impacts on habitat and threatened and endangered species associated with construction, installation, operation, and maintenance activities (deep trenching, grading, filling, and fencing) around the project site(s), and also consider options that could facilitate better protection and conservation of covered species and their habitat. One respondent was concerned that shade from the parabolic troughs could adversely impact species after installation is complete.

Transportation (including Traffic)

Respondents generally expressed concern with how the project would affect existing transportation routes, particularly State Route 85 and Riggs Road, the planned Loop 303 and Hassayampa Freeway, as well as other routes. Respondents inquired as to whether traffic impact analysis, trip generation reports, and queuing analysis studies would be performed and expressed preference that such studies be performed as part of the EIS. Inquiries about a potential visitor's center and public access to the constructed solar power generation facility were also commented on.

Respondents were further concerned about how the project would affect access to certain routes that provide recreation opportunities to adjacent public land.

Vegetation

Respondents expressed concern about loss of native desert vegetation in the project area. In particular respondents were interested to know if native plants would be salvaged and later reused/replanted on site. Respondents recommended that plant salvage and revegetation be coordinated with the Arizona Department of Agriculture, in accordance with the Arizona Native Plant Law and suggested development

of a reclamation plan for disturbed sites, where appropriate, including planting native, weed-free seed and vegetation. The company "Native Resources" noted that they provide native plant salvage and replanting services. Respondents were also concerned about the possible affect of increased shade (from CST troughs) on the desert environment (e.g., vegetation and/or "species"). Respondents were interested to know about the potential for invasive plant species to be introduced to the project area and how the project would comply with Executive Order 13112, Invasive Species (February 3, 1999).

It was also noted that special status species within 5 miles of the project include the California barrel cactus, which is designated by the State of Arizona as a rare species (RS).

Respondents suggested that the current hydrology of the project area be maintained, and that changes in sheet flow would have detrimental affects to downslope vegetation. It was also suggested that U.S. Army Corps of Engineers (USACE) be consulted regarding BMPs and guidelines for minimizing and mitigating impacts to riparian areas.

Visual Resources

Respondents inquired about planned viewshed analyses to study the potential visual impact of the project from the Sonoran Desert National Monument and the North Maricopa Wilderness Area. Respondents were also interested to know how these impacts may be mitigated and suggested the use of BMPs to further limit impacts. Respondents noted that the project needed to comply with the BLM's visual resource management objectives. Further, respondents were interested to know what the cumulative visual impact would be as a result of siting 35 of these facilities (if all 35 applications filed to date were approved) on BLM land throughout Arizona. Mitigation for these cumulative impacts was also a concern. Lastly, cumulative impacts to views from Arizona highways were specifically identified.

Water Resources

Respondents generally had concerns about the quantity of water to be used by the project, where the water would come from (water rights and groundwater and surface water sources, brackish groundwater, wastewater, deep-aquifer, etc.), what would happen to water left over after usage, and how water would be transported to and from the site. They requested that all of these issues be addressed in the EIS.

Comments indicated that the EIS descriptions of the water supply should include quantity, quality, opportunity for reuse, and disposal, and that it should identify best water conservation technologies. Respondents also said the EIS should include the reasonable foreseeable direct, indirect, and cumulative impacts of using that quantity of water on:

- wells,
- recharge rates,
- quality of water supplies,
- water users (including City of Goodyear and Maricopa County Parks),
- springs or other open waterbodies,
- surrounding natural resources,
- land subsidence,
- earth fissure,
- functions and locations of Waters of the U.S., and
- ephemeral washes.

Respondents were also interested in knowing how water-use requirements for the project compare to the water-use requirements of a cotton farm on the same acreage. One respondent questioned if there would be additional water needs besides the 2,500-acre-feet/year projected for use. Another respondent asked

what percentage of the water necessary would be drawn from groundwater versus surface water (pipeline). Respondents inquired about the water use requirements of the project as expressed in gallons/day, gallons/year, acre-feet/day, acre-feet/year, and gallons per MW hour (gal/MWh).

Additional concerns included water usage impact criteria and potential impacts to surface water and groundwater as a result of discharges. Respondents asked how the proponent planned to dispose of total dissolved solids, nitrates, [FG], boron, salts left from the evaporation ponds, solid waste left over from the evaporation ponds, and if saline ponds would be used and lined.

Respondents suggested that the current hydrology of the project area be maintained, and that changes in sheet flow would have detrimental affects to downslope vegetation. It was also suggested that USACE be consulted regarding BMPs and guidelines for minimizing and mitigating impacts to riparian areas.

Respondents asked about methods that could reduce water usage, such as reusing the water, technology that could reduce usage, xeric landscaping, a water pricing structure that accurately reflects the economic and environmental costs of water use, and water conservation education.

Respondents noted a statutory goal for the Phoenix Active Management Area, in which the project is located to achieve safe-yield by the year 2025 through use of renewable water supplies, decreased groundwater withdrawals, and efficient water use. Noting that that the project area has very limited data available regarding current depth of water, depth to bedrock, and saturated thickness, it was recommended that a production well be drilled and properly developed. It was also recommended that a long-term aquifer test be conducted to gather information on site-specific aquifer parameters that can be used in a groundwater model for assessing the long term groundwater dependability to fully understand the viability of the proposed water supply and assess the project in the context of the Phoenix AMA's regulatory requirements. Respondents recommended close coordination with the Arizona Department of Water Resources (ADWR) during development of the EIS.

Respondents requested that the EIS include a description of the permitting process, status of existing water rights, identification of any of the rights that have been overallocated, any permits with special conditions, and any measures prescribed for mitigation, adaptive management, or monitoring. One respondent asked if a Physical Availability Demonstration (PAD) would be submitted to ADWR. Another respondent noted that part of the project was within the boundaries for the area drainage master plan for the Rainbow Valley area, and this should be considered in the EIS. One respondent requested the EIS include existing restoration and enhancement efforts for those waters, information on how the project would coordinate with on-going protection efforts, and any mitigation measures that would be implemented to avoid further degradation of impaired waters.

One respondent asked that the potentially affected groundwater basin, any potential for subsidence, and impacts from other proposed large-scale solar installations be identified. Another respondent asked how climate change would affect water reliability on the project and how the project was going to deal with these potential changes.

Wildlife

General concern related to wildlife included wildlife habitat connectivity, depletion of water resources, and impacts to wildlife from site development and facilities. Respondents expressed concern that impacts may extend beyond the physical footprint of the project areas, and that there was a need for project monitoring to evaluate project impacts and inform adaptive mitigation solutions. Specific concerns included:

- impacts to the movements of wildlife between the Sonoran Desert National Monument, Sierra Estrella Mountains, and the Buckeye Hills;
- impacts to wildlife species near the Gila River;

- impacts to desert bighorn sheep, their habitat, their historical migration corridors, and reintroduction plans;
- impacts to wildlife species as a result of an increase in shade;
- impacts to wildlife species, particularly migratory waterfowl, as a result of exposure to contaminants in evaporation ponds and/or stormwater ponds if these water structures have the potential to attract wildlife; and
- impacts to wildlife species distribution and abundance beyond the project area as a result of changes to ground and surface hydrology (i.e., sheet flows in both washes and uplands) and resultant desert vegetation mortality.

Respondents were also concerned with protection and mitigation measures for wildlife species, including measures to address adverse effects of proposed activities and adverse effects from evaporation ponds and/or stormwater ponds.

Recommendations included the following:

- Coordinate with the AGFD regarding a recently developed landscape-level monitoring plan to provide data to assess the geographical extent of solar project impacts to the lower Sonoran Desert scrub ecosystem, and inform current and future project planning and mitigation.
- Conduct surveys for Western burrowing owl, Tucson shovel-nosed snake, Le Conte's thrasher, desert tortoise, and kit fox (at a minimum).
- Issue a scientific collecting permit to allow any wildlife encountered during construction or operation of the facility to be moved outside the project area within 1 mile of its original location.
- Design and construct the transmission line to prevent or minimize risk of electrocution of raptors, owls, vultures, and golden or bald eagles, which are protected under state and federal laws.
- Limit project activities during the breeding season for birds, generally May through late August, depending on species in the local area (raptors breed in early February through May).
- Conduct avian surveys to determine bird species that may be utilizing the areas, and develop a plan to avoid disturbance during the nesting season.

It was noted that AGFD policy requires compensation for potential habitat loss, and that the project area is classified as Resource Category III Habitat, which has a mitigation goal of no net loss of habitat. The following mitigations measures were suggested:

- Fund research on the effects of solar energy to surrounding wildlife.
- Protect/Purchase land equivalent to the amount being taken, or adjust the project footprint to avoid linkages and relocate to private or unused agricultural lands.
- Avoid disturbance to Rainbow Wash.

Cumulative Impacts

Respondents expressed concern about the cumulative impacts associated with the development of multiple large-scale solar projects in the desert region, noting that the BLM has received more than 200 applications for solar projects in the desert southwest and as many as 35 of solar projects proposed for the Sonoran Desert.

Respondents noted that the cumulative impacts analysis should provide the context for understanding the magnitude of the impacts of the alternatives by analyzing the impacts of other past, present, and reasonably foreseeable projects or actions and then considering those cumulative impacts in their entirety. Respondents indicated that the EIS should clearly identify the resources that may be cumulatively impacted, the time over which impacts are going to occur, and the geographic area that would be

impacted by the project. Respondents suggested that this section should focus on resources of concern, that is, those resources that are "at risk" and/or are significantly impacted by the project, before mitigation. Specific resources mentioned included water supply, endangered species (and their habitat), visual impacts, and climate change (including ability of project area to sequester carbon).

Respondents suggested that the cumulative impacts section include the following information:

- Rationale regarding which resources are analyzed and which ones are not
- A list of all on-going, planned, and reasonably foreseeable projects in the study area that may contribute to cumulative impacts
- For each resource:
 - the current condition of the resource as a measure of past impacts (for example, the percentage of species habitat lost to date)
 - the trend in the condition of the resource as a measure of present impacts
 - the future condition of the resource based on an analysis of impacts from reasonably foreseeable projects or actions added to existing conditions and current trends
 - the cumulative impacts contribution of the proposed alternatives to the long-term health of the resource, and a specific measure for the projected impact from the proposed alternatives
 - opportunities to avoid and minimize impacts, including working with other entities and parties that would be responsible for avoiding, minimizing, and mitigating those adverse impacts

Respondents also suggested that the cumulative impact analysis include associated transmission needs of other reasonably foreseeable projects (i.e., connected actions).

It was also noted that the BLM and Department of Energy (DOE) are currently preparing a programmatic EIS to address existing and future solar energy development applications on BLM-administered lands in six western states and suggested that the EIS should identify whether the project is located within the solar energy project area as defined by the BLM and DOE.

Miscellaneous

Most comments in this category included general support for the project, noting that solar is a good source of energy, that renewable energy resources such as solar power can help the nation meet its energy requirements while reducing GHG emissions, and that a similar project in California has had minimal adverse impact on the land. Respondents also noted that that the project appeared to be well planned and that they hoped the public would be given an opportunity to tour the facility. Other general comments included questions about the location and impacts of a similar project in California and several advertisements for dust control agents

One respondent noted that the project name may have a potential conflict with their existing company name, Sonoran Solar Inc.

Mitigation

Respondents noted that because the project would preclude most other uses of these lands, mitigation would be required for the loss of availability for multiple-use on public lands as well as impacts to individual resources and values, such as impacts to species protected under the Endangered Species Act (ESA), as well as impacts to cultural resources, recreation, wildlife migration corridors, scenic vistas, and water resources.

Respondents suggested that effective onsite mitigation is limited for solar projects. Guidelines for offsite mitigation included 1) a "no net loss" or a "net gain" requirement for resources and values; 2) requirements for project developers to fund mitigation efforts based on the amount and value of the land

impacted from development; 3) a centralized body to oversee the fund use, comprising staff from the BLM, AGFD, and ADWR and taking into consideration fund distribution recommendations from the public; and 4) requirements for offsite mitigation to take place in the same ecoregion (or, if involving water, the same groundwater basin) as the project site.

Suggested mechanisms for appropriate offsite mitigation included:

- Purchase additional private lands to be put in the federal estate under conservation management to guarantee the maintenance of the equivalent values and resources lost on the project site.
- Designate additional conservation areas on existing federal lands to protect the equivalent resources and values lost on the project site.
- Purchase and retire water rights to offset groundwater pumping by the project.

Respondents also noted the value of adaptive management and recommended that the BLM consider adopting a formal adaptive management plan to evaluate and monitor impacted resources and ensure the successful implementation of mitigation measures.

5.0 SUMMARY OF INFORMAL COMMENTS FROM NOTES TAKEN DURING THE PUBLIC AND AGENCY SCOPING MEETINGS

In addition to formally submitted comments, informal comments and input were received from agency officials and members of the public during the question and answer sessions and general discussions at scoping meetings. Those comments and questions were noted during the meetings and are included in the table below.

Table 6. Informal Comments and Questions from Scoping Meetings

August 4, 2009 Agency Scoping Meeting
Comment Summary
Maricopa Association of Governments (MAG) has a concern regarding placement of project in relation to a planned freeway. They would like a meeting between BLM, MAG, ADOT, and consultants.
Flood control had questions and would like to work with the project regarding infiltration and post conditions.
Question Summary
What tax benefits would there be to the communities?
Does NextEra have experience with dry-cooled facilities?
How many acre/feet of water per year would be required?
Will multiple alternatives be analyzed, and what are the pros and cons of different alternatives to NextEra?
What happens to the 2,500-acre/feet of water?
Why wet cooling vs. dry cooling or photo voltaic?
What are the recycling requirements for water use within the generating system?
Will the project be subject to an approval process through the Arizona Corporation Commission?
Is the project area in a non-attainment area? What are the air quality impacts?
Who owns the utility corridor?
Are you looking at any sites on Arizona State Lands?
What jobs would be available?
Has access from Riggs Road been considered?
Is there a possibility of expansion?
What noise impacts are anticipated?

Table 6. Informal Comments and Questions from Scoping Meetings

What road construction would be needed?
Is there an opportunity for recharge?
What are BLM's plans for protecting the monument?
August 4, 2009 Public Scoping Meeting
Comment Summary
Concerned about impacts to existing wells in the area.
Like the project but should have heat storage using molten salt so it can generate heat after hours without using natural gas.
Concern about cultural impacts of the project.
Consider using private land instead of our federal lands.
ROW should be issued for 99 years.
Concern about new transmission line and Arizona Public Service (APS) upcoming project.
Concern about vegetation on the site—would like to see native vegetation reused as much as possible.
Concern about visual impacts to the national monument.
Should use dry cooling instead of wet.
Like the project if we have the water, but would like it better if power is used in Arizona. Good presentation, very informative.
Concern about cumulative impact of all 35 projects on the visual aspects of Arizona.
Concern about impacts to wildlife corridors.
NEPA process is too long. We need a nationwide permit system for non-carbon-based generations.
Question Summary
What is the scheduled operational date?
Why does NEPA process take so long?
What about reclamation of cacti?
Are there any viewscape studies planned to show how the project impacts the Sonoran Desert National Monument visually?
Why does the area have to be denuded of vegetation?
What happens to solar equipment during dust storms?
Where does the water come from?
What is the difference between PV and a solar plant?
What are the cumulative visual impacts of the 35 applications?
Why is the application for 14,000 acres when only 3,600 acres are used?
How definite is the design for the transmission interconnect?
What fossil fuel-burning plants would be replaced by the project?
What criteria would be used to evaluate water usage impact?
How is water and wastewater treatment managed?
Would new wells affect the aquifer under Goodyear? How many gallons/day would be used when plant is fully built?
What would the plant generate at night?
What are the preliminary cultural findings?
Why not use old farm lands?
How does the project benefit the area financially?

Table 6. Informal Comments and Questions from Scoping Meetings

What type and quantity of employees would you use?
Would NextEra consider using PV?
Are Solar Energy Generating Systems projects on BLM land? What have been the impacts?
Would native plant salvage law be considered?
What is the state's utility commitment to the project?
How much water would the project require compared to a cotton farm on 4,000 acres?
What type of fluid is used in the tubes?
What is the least amount of gas needed to prevent freeze?
Would underground transmission be considered?
What has the input been from Game and Fish on North/South movement?
What is the method for awarding construction contracts?
What would be on the 4,000 acres?
August 5, 2009 Public Scoping Meeting
Comment Summary
Concerned about the water use; don't want water depleted.
Concern about cultural impacts of the project
Question Summary
How would mosquitoes be controlled on evaporation ponds?
How would water be impacted?
How would the 2,500 acre/feet of water be disposed of each year?
How is Arizona Public Service involved in the project?
How did you arrive at the water well site location? Will you expand this site?
How would residents be notified during construction activities?
Will the water drilling results be available to the public?
What is the above ground height of the solar panels?
Is the substation owned by Salt River Project?
Will I be able to use my right of way during construction of the water line?
What manner of dust control would be used?
How would the project impact property values?
Would the plant run 24 hours per day?
August 6, 2009 Public Scoping Meeting
Comment Summary
Concerned with disruption of wildlife in the area.
Consider using a wildlife drinker catchment.
Concerned about access to public lands around the site.
Concerned with access to areas if necessary for wildlife conservation.
Please preserve the access to the land for recreation and have tours when the plant is done.
Arizona Desert Bighorn Sheep Society wants to see protection of wildlife.
Worried about animals drinking evaporation pond water.
Question Summary
Is the site located in the Phoenix Active Management Area?

Table 6. Informal Comments and Questions from Scoping Meetings

Would the plant have thermal storage?
How would solids be disposed of from the evaporation ponds?
Would there be training in the area for the workers?
Would you sell power to Arizona Public Service or Salt River Project?
How would the plant impact the water table for Rainbow Valley?
What would encourage the company to explore dry cooling?
What is the water use of the SEGS facilities?
Were the Tribes consulted?
What would the wages be for the workers?
What would be the impacts on wildlife?
Would roads be mitigated for dust?
Why was the proposed method chosen over PV?
What would you have to sell the power for in order to make it worthwhile?
Why is the location so close to the Sonoran Desert National Monument?
What are the largest obstacles to getting the plant built?
Would you block access to the surrounding lands?
Will solar panels be purchased locally? Can you buy the mirrors from American companies?
What does SEGS bring in taxes to the California county? How much can Maricopa County expect to get?

6.0 PRELIMINARY ISSUES, CONCERNS, AND OPPORTUNITIES

The following is a preliminary list of issues, concerns, and opportunities for the BLM to address in the EIS process. The list was developed from comments received during the public scoping meetings, internal scoping comments from agency officials, and additional input from agency resource specialists. These issue statements will be used to inform the data collection and analyses for the EIS.

6.1 Process Issues

Issue 1: There is considerable national, state, and local interest in development of renewable energy sources as a means to diversifying the US's energy portfolio.

- What project-specific opportunities are available to educate the public on the value and importance of solar energy; the effects of solar energy production on natural, cultural, and human resources; and the conservation of natural resources?

Issue 2: There are a number of interested stakeholders in the NEPA process, including federal, state, and local governments and agencies; tribes; interest groups; and individuals.

- How would construction and operation of a solar powered generating facility affect the interests and concerns of Native American people? Which tribes will be consulted as part of the required government-to-government consultation?
- How would construction and operation of the project affect wildlife and their habitat, including threatened, endangered, and sensitive species? Have the U.S. Fish and Wildlife Service and the AGFD been consulted?
- How would construction and operation of the project affect Waters of the U.S.? Has the USACE been consulted?

- What additional permits will be needed for construction and operation of the facility?

Issue 3: The NEPA and permitting process is time consuming and does not identify or prioritize "shovel-ready" non-carbon-based energy projects.

- Within the context of the project, what opportunities exist to streamline the NEPA/permitting process? Can the solar project criteria development of other renewable energy multi-stakeholder processes be used to facilitate timely development?

Issue 4: The cost of decommissioning the site must be thoroughly analyzed and funding assured.

- What opportunities exist to ensure adequate funds will be available for complete restoration of the project site after the project is retired or abandoned?

6.2 Purpose and Need Issues

Issue 5: In response to the U.S.'s need to diversify its energy portfolio, reduce its dependence on fossil fuels, and reduce its carbon and other emissions, BLM is evaluating a number of renewable energy proposals.

- What effect would construction and operation of a solar generating facility have on continued use of fossil fuels for electrical generation?

Issue 6: The project would support the President's New Energy for America Plan to produce 10% of America's electricity from renewable sources by 2010 and 25% by 2025. The project would also support Arizona's Renewable Energy Standard and Tariff Rules to produce 15% of their electricity from renewable sources by 2025.

- What energy market would this solar power generating facility serve?

6.3 Alternative Issues

Issue 7: A reasonable range of management alternatives meeting Purpose and Need should include alternative sites, capacities, and technologies, and it should include those that may not be within the jurisdiction of the lead agency.

- What is the desired energy profile (capacity factor and time of energy output) for the project, and is it supported by the Purpose and Need of the project?
- What other project area configurations or technologies are available that would meet the project Purpose and Need and reduce impacts to resources?
- Are there other locations for the project that would reduce potential use conflicts and meet the project Purpose and Need, even if they are not located on public land?
- Would residential and wholesale distributed generation, in conjunction with energy efficiency practices, be a viable alternative to the project?

Issue 8: Other transportation and utility systems are planned or located adjacent to the proposed site.

- What effect would construction and operation of a solar power generating facility have on the operation of planned or existing transportation or utility systems and facilities?

Issue 9: Burning natural gas at this proposed solar generating facility to supplement energy production would continue to produce emissions. Other alternatives can reduce the need to generate electricity via natural gas-fired generating facilities.

- What effect would inclusion of a heat storage unit have on reducing emissions from natural gas-fired electrical generation?

- What effect would expansion of the solar field to replace the thermal input provided by gas have on reducing emissions or on other resources?

6.4 Resource and Impact Analysis Issues

6.4.1 Air Quality Issues

Issue 10: Activities related to the construction and operation of the solar generating facility have the potential to result in increased dust. Additionally, construction, operation, and mitigation of the solar generating facility could result in increased emissions. The use of natural gas (used at a minimum to reduce startup time and prevent fluid freezing, but also possibly for up to 25% of the power generation itself) will also increase emissions.

- What effect would construction and operation of the facility have on local air quality?
- What is the project's projected use of natural gas? Within the constraints of the desired energy profile (capacity factor and time of energy output), what opportunities exist to reduce impacts to air quality through operational changes, such as the inclusion of a heat storage unit?
- What opportunities exist to reduce impacts to air quality through mitigation plans (for example, fugitive dust control and equipment emissions mitigation plans)?

6.4.2 Climate Change Issues

Issue 11: A thorough analysis of the project's carbon footprint is required to understand 1) the overall impact of the project from its initial manufacture phases through project site reclamation, including potential impacts to the land's ability to store carbon; and 2) how this footprint compares to other forms of energy production.

- What would be the full carbon footprint of the project, and what phases of the project are appropriate to include in that analysis?
- Against what other energy generation types should the project's GHG footprint be measured to determine the net GHG reductions or gains?
- Could the project be designed in a way to reduce the impact to carbon sequestration?

Issue 12: Anticipated changes in climate could affect the resources required for the operation of this facility, exacerbate the project's impacts to sensitive areas, or exacerbate the cumulative impacts of the multiple large-scale solar projects proposed for the southwest desert.

- How should potential changes in climate be measured and quantified in the draft EIS?
- How might anticipated changes in climate affect the project area's resources and sensitive areas? How would this affect the operation of the project?
- How might climate changes affect cumulative impacts?

6.4.3 Cultural Resources Issues

Issue 13: Ground-disturbing activities resulting from construction and operation of a solar generating facility have the potential to discover/disturb cultural resources in the area, including the physical integrity of sacred sites.

- How would construction and operation of this solar powered generating facility affect cultural resources?

6.4.4 Hazardous Materials Issues

Issue 14: The solar generating facility has the potential to produce hazardous waste and concentrated de-watered waste from evaporation ponds.

- How would waste generated during construction and operation of the facility be managed (i.e., storage and disposal)?

6.4.5 Land Use Issues

Issue 15: The majority of the project area is within the town limits of the City of Buckeye, but there are portions of the project area that are unincorporated.

- How will the EIS analysis team coordinate with Maricopa County to ensure that portions of the project area that occur in unincorporated Maricopa County are properly entitled and permitted prior to construction or operation?

Issue 16: A number of land uses occur or are under consideration in proximity to the proposed solar facility, including master-planned communities, the Hidden Valley transportation system, a mineral materials facility, military operating space, and land use objectives of federal, state, tribal, and local plans and policies.

- What effect would construction and operation of a facility have on existing land uses in and adjacent to the project area?
- What effect would construction and operation of a facility have on proposed land uses in and adjacent to the project area?

6.4.6 Mitigation Issues

Issue 17: Mitigation would be required for impacts to individual resources as well as the loss of available land for multiple use on public lands

- What opportunities exist for onsite mitigation for all other resources and values?

6.4.7 Noise Issues

Issue 18: The Town of Buckeye and the City of Goodyear are located a short distance north of the project area. The North Maricopa Mountains Wilderness is located just south of the project area. The noise of construction and operation of a solar generating facility may be heard from residential areas in these communities, and by visitors in the wilderness.

- What effect would construction and operation of a solar power generating facility have on the desired soundscape in nearby residential communities?
- What effect would construction and operation of a solar power generating facility have on the desired experience of visitors to the adjacent wilderness?

6.4.8 Recreation Issues

Issue 19: Public lands in the project area and the adjacent Sonoran Desert National Monument and North Maricopa Mountains Wilderness are open and popular for a variety of recreational activities.

- What effect would construction and operation of a solar generation facility have on the availability of surrounding public lands and access roads for recreation purposes?

6.4.9 Socioeconomic Issues

Issue 20: Comments about the operation of the proposed facility indicate an interest in the opportunities for employment that the project would generate. What is the schedule for operation? What kind and how many operators and technicians would be needed for the project? How would construction and operation contracts be awarded? Who would be expected to provide emergency medical treatment and police response for the project?

- What employment opportunities would be provided by construction and operation of this solar powered generating facility?

Issue 21: Tax benefits may be available to local communities as a result of the project, including benefits to local tax payers and utility companies and lower property taxes.

- What contribution would construction and operation of the facility have on local revenue and the economy?

Issue 22: Environmental justice (minority and low income) populations may be affected by the construction and operation of the project.

- What effect could the solar generation facility have on minority and low-income populations?

6.4.10 Soils Issues

Issue 23: The project may have impacts to soil resources, including cryptogamic crust, cyanobacteria, mosses, and lichens, and it may cause soil erosion.

- What effect would the construction and operation of a solar power generating facility and associated facilities have on soils in the project area, including cryptogamic crust, cyanobacteria, mosses, and lichens?
- What measures can be taken to reduce impacts to drainage, erosion, and sediment control?

6.4.11 Special Designation Issues

Issue 24: The North Maricopa Mountains Wilderness is located just south of the project area.

- What effect would construction and operation of this solar power generating facility have on the resource values and desired experience of visitors to the adjacent wilderness?

6.4.12 Threatened, Endangered, and Special Status Species Issues

Issue 25: There are threatened, endangered, and special status species and habitat in the project area.

- What effect would the construction and operation of a solar power generating facility and associated facilities have on local populations of ESA-listed or candidate species or other special status species and suitable habitats including:
 - impacts to suitable upland, riparian, wetland, or aquatic (Gila River) habitat;
 - impacts to species that are listed or candidates for listing under the ESA, or are otherwise designated a sensitive species, including Tucson shovel-nosed snake (C), Sonoran desert tortoise (C), Yellow-billed cuckoo (C), Yuma clapper rail (E), and Southwestern willow flycatcher (E), California barrel cactus (RS), least bittern bat (WSC), and Western burrowing owl (SC).
- What measures can be taken to reduce the adverse impacts?

6.4.13 Transportation Issues

Issue 26: Project-related travel may result in increased traffic on State Route 85 and the Rainbow Valley Road. Additionally, studies are underway for the proposed Hassayampa Freeway in proximity to the project area.

- What effect would construction and operation of needed utilities for the solar generation facility have on existing and proposed transportation systems?
- What effect would the solar generation facility have on access to local private and public lands?

6.4.14 Vegetation Issues

Issue 27: Construction of the solar power generating facility would result in a loss of native desert vegetation in the project area. Additionally, the CST troughs may increase shade in the desert environment. The potential also exists for invasive plant species to be introduced to the project area.

- What effect would the construction and operation of a solar power generating facility and associated facilities have on native plants, including:
 - loss of native vegetation from direct disturbance (i.e., grading the project area) and
 - increased shade from the installation of equipment.
- Introduction and spread of invasive plant species into the project area? Can plant loss be mitigated by salvage and reuse/replanting of native plant species in the project area?

6.4.15 Visual Resources Issues

Issue 28: Construction and operation of a solar generating facility would introduce multiple structures and modifications to the landscape. The project area is adjacent to the Sonoran Desert National Monument and the North Maricopa Wilderness Area. Additionally there are currently 35 applications for similar solar facilities on BLM land throughout Arizona.

- What effect would construction of a solar generating facility have on the scenic quality and undisturbed character of the area?
- How would the character of the viewshed from key observation points (KOPs) in the Sonoran Desert National Monument and North Maricopa Wilderness Area be modified by the construction and operation of a CST power generating facility?
- What would be the cumulative effect to visual resources (the scenery) be from KOPs along Arizona highways and from the construction and operation of solar power generating facilities if all 35 ROWs for solar facilities were approved?
- What measures can be taken to reduce the impacts?

6.4.16 Water Resources Issues

Issue 29: Construction and operation of the solar generation facility could result in impacts to the quantity of water, including groundwater and surface water sources. Project activities also have the potential to affect the quality of surface and groundwater as a result of project discharges (i.e., stormwater, evaporation pond water, effluent). Modification of the landscape for construction of the facility could result in alteration of natural drainage patterns in the project area.

- How would the annual withdrawal of approximately 2,500 acre-feet of groundwater from the project area impact the:
 - quantity and quality of water in the aquifer under the City of Goodyear, including the flow of lower quality water into the aquifer from the waterlogged area near the Gila River;

- quantity of water available for use by the Buckeye Hills Regional Park;
- quantity and quality of water in existing area private wells;
- water table in Rainbow Valley; and
- aquatic habitats, springs, soils, and land surface (subsidence)?
- What measures can be taken to prevent further degradation of impaired waters?
- How would the permitting process for the project impact existing water rights?
- What methods could be used to reduce the amount of groundwater needed for the project, and what would be the impact on the quantity and quality of surface water and groundwater resources if these methods were implemented?
- How would construction and operation of a solar power generating facility impact the quality of existing surface water or groundwater?
- How would construction and operation of a solar power generating facility impact existing project area drainage patterns including floodplains and washes?
- What would be the cumulative impact on the local hydrographic basin from the development and use of local water sources to meet project water demands?
- How would the concentrated dewatered waste from evaporation ponds, total dissolved solids, nitrates, [FG], boron, and salt be disposed of?

Issue 30: Operation of the project would require approximately 2,500 acre-feet of water per year. Alternative sources of water are being considered to provide this needed supply. Additionally, other solar generating technologies are available, including PV, dry-cooling, and hybrid systems.

- What effect would groundwater pumping to supply water for the proposed solar generating facility have on area aquifers?
- What effect would other solar generation technologies have on use and conservation of water?

6.4.17 Wildlife Issues

Issue 31: Construction and operation of the facility could result in impacts to wildlife in the area, including the north-south movements of wildlife between the Maricopa Mountains and the Buckeye Hills; impacts to wildlife species as a result of an increase in shade; and impacts to wildlife species, particularly migratory waterfowl, as a result of exposure to contaminants in evaporation ponds and/or stormwater ponds if these water structures attract wildlife.

- What effect would the construction and operation of a solar power generating facility and associated facilities have on local wildlife populations and individuals, including:
 - disruption of north-south movements of wildlife between the Maricopa Mountains and the Buckeye Hills;
 - impacts to individual animals and populations as a result of increased shade introduced into the environment from the installation of equipment;
 - impacts to wildlife species, particularly migratory waterfowl, as a result of exposure to contaminants in evaporation ponds or stormwater ponds if these water structures attract wildlife;
 - impacts to wildlife species near the Gila River; and
 - impacts desert bighorn sheep historical habitat and reintroduction plans?

6.4.18 Cumulative Impact Issues

Issue 32: A number of other solar generating power facilities are being considered in western Arizona, California, and Nevada and may impact a variety of resource values and uses, including water supply,

endangered species, visual resources, and wildlife and threatened, endangered, and sensitive species habitat.

- What would be the cumulative effect of these facilities on the Sonoran Desert landscape?
- What past, present, and reasonable foreseeable projects and their connected actions (i.e., transmission needs associated projects) would be appropriate to include in a cumulative impacts analysis?
- What resources are appropriate to include in a cumulative impact analysis? What are appropriate impact indicators and information to include in that analysis?
- How might climate change impact the cumulative effect of these facilities on the Sonoran Desert?