

Staff Assessment and  
Draft Environmental Impact Statement

**CALICO  
SOLAR PROJECT**

Application For Certification (08-AFC-13)  
San Bernardino County



**U.S. BUREAU  
OF LAND  
MANAGEMENT  
and  
CALIFORNIA  
ENERGY  
COMMISSION**

**STAFF REPORT**

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# CALICO SOLAR PROJECT

## STAFF ASSESSMENT AND DRAFT ENVIRONMENTAL IMPACT STATEMENT AND DRAFT CALIFORNIA DESERT CONSERVATION AREA PLAN AMENDMENT

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# **EXECUTIVE SUMMARY**



# EXECUTIVE SUMMARY

Jim Stobaugh and Christopher Meyer

## INTRODUCTION

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Calico Solar, LLC (Applicant) is seeking approval to construct and operate the Calico Solar Project (formerly the Stirling Energy Systems Solar One Project) and its ancillary facilities (Calico Solar Project). The Applicant is a private party that is a wholly owned subsidiary of Tessera Solar. The main objective of the Calico Solar Project is to provide clean, renewable, solar-powered electricity to the State of California. The electricity from the Calico Solar Project will assist the State in meeting its objectives as mandated by the California Renewable Portfolio Standard (RPS) Program and the California Global Warming Solutions Act. The Calico Solar Project will also address other state and local mandates adopted by California's electric utilities for the provision of renewable energy.

Southern California Edison (SCE) selected the Calico Solar Project to help meet its objectives under the legislative requirements of the RPS Program through a least-cost, best-fit competitive solicitation. The Applicant and SCE have entered into a 20-year Power Purchase Agreement (PPA) for the provision of renewable electricity. This PPA will help SCE meet both its statutory mandate to purchase at least 20% of its electric power from renewable resources by 2010 and its future electricity requirements. The California Public Utilities Commission (CPUC) approved the PPA on October 27, 2005.

The Applicant submitted an Application for Certification (AFC) to the California Energy Commission (Energy Commission) for the proposed project on December 2, 2008. (The application was originally submitted by SES Solar One, LLC, SES Solar Three, LLC and SES Solar Six, LLC for the SES Solar One Project. In January 2010, the above entities merged into Calico Solar, LLC, and the name of the SES Solar One Project was changed to the Calico Solar Project.) The Energy Commission is the lead State agency responsible for evaluating the environmental effects of project and for complying with the California Environmental Quality Act (CEQA) for project related discretionary actions by the Energy Commission.

The project proposes the use of land managed by the United States Department of the Interior, Bureau of Land Management (BLM); therefore the Applicant has submitted a request for a right-of-way (ROW) grant to the BLM. In addition, the BLM will decide whether to approve, approve with modification or deny a ROW grant to the Applicant for the Proposed Calico Solar Project. The BLM will also consider amending the California Desert Conservation Area (CDCA) Plan in this analysis. If the BLM decides to grant a ROW, the BLM would also amend the CDCA Plan as required for the Proposed Action, Action Alternative, or No Action Alternative as required. The BLM is the federal lead agency for the evaluation of project effects and compliance of the proposed project with the requirements of the National Environmental Policy Act (NEPA) related to possible BLM discretionary actions related to the ROW grant request.

## **PROPOSED PROJECT**

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### **Project Location and Description**

The Applicant intends to develop an electric-generating facility with a nominal capacity of 850 megawatts (MW) using concentrated solar power. The Calico Solar Project would be constructed on an approximately 8,230-acre (ac) site in the Mojave Desert in San Bernardino County, California. The site is approximately 37 miles east of Barstow, 174 miles east of Newberry Springs, 57 miles northeast of Victorville, and approximately 115 miles east of Los Angeles (straight line distances). The Calico Solar site is located on BLM managed lands. Key features of the proposed project are described briefly below and in more detail in the following sections:

- The electric-generating facility would include the construction of a new 230-kilovolt (kV) substation approximately in the center of the project site, an operation and administration building, a maintenance building, and a substation building.
- The Calico Solar Project would be constructed in two phases: Phase I would consist of up to 11,000 SunCatchers configured in 1.5-MW solar groups of 60 SunCatchers per group. The total net nominal generating capacity of Phase 1 is 275 MW described as Southern California Edison's (SCE) Early Interconnection Option. Phase I would require approximately 2,320 acres. The renewable energy from Phase I will be transmitted via the existing 220-kV SCE Lugo to Pisgah transmission line. The Calico Solar Project will be connected to the grid at the SCE Pisgah Substation via a 2.0-mile-long, 230-kV interconnection transmission line. Approximately 739 feet of this connecting transmission line is outside of the project site. Phase I would require only minor upgrades to the Pisgah Substation and no upgrades to the existing Pisgah to Lugo transmission line.
- Phase II would expand the Calico Solar Project to a total of 34,000 SunCatchers configured in 1.5-MW solar groups of 60 SunCatchers each, with a total net generating capacity of both phases of 850 MW. Phase II would require approximately 5,910 acres of the project site. The 575-MW Phase II would consist of approximately 23,000 SunCatchers. The additional 575 MW generated in Phase II would require new transmission capacity within the grid. This is anticipated to be provided by the proposed 500-kV Pisgah to Lugo transmission line (assumed to be a project independent of the Calico Solar Project). This upgrade is described as SCE's Full Build-out Option. The construction and operation of Phase II is contingent on the approval and development of transmission line.

### **Solar Power Plant Equipment and Facilities**

The Calico Solar Project would use the proprietary SES SunCatcher™ technology. Each SunCatcher consists of a 25-kilowatt (kW) solar power generating system. The system is designed to track the sun automatically and to focus solar energy onto a Power Conversion Unit (PCU), which generates electricity. The system consists of an approximately 38-foot-diameter solar concentrator dish that supports an array of curved glass mirror facets. These mirrors collect and focus solar energy onto the heat exchanger of the PCU. The PCU converts the solar thermal energy into electricity via a Solar Stirling Engine designed to convert solar power to rotary power through a thermal conversion process. Each SunCatcher would operate independently and would generate grid-quality electricity.

Power generated by groups of 60 SunCatchers would be collected through a 600-volt (V) underground power collection system. This collection system would combine the output from the units and connect each 1.5-MW group to a generator step-up unit (GSU) transformer with an output voltage of 34.5 kilovolt (kV). The output from the GSUs would be grouped into 3-, 6-, and 9-MW groups, which would be connected via 34.5-kV underground collection circuits to 48- or 51-MW, 34.5-kV overhead collection circuits, each of which would be connected directly to the on-site collection substation. The on-site collection substation would be connected via a 230-kV, double-circuit overhead interconnection transmission line for delivery of generated electricity to the SCE Pisgah Substation, where the interconnection to the California Independent System Operator (CAISO)-controlled grid would take place.

The Calico Solar Project includes construction and operation of an on-site substation, which would include transformers, circuit breakers, metering, and other protection required to connect the project to the SCE Pisgah Substation. The Calico Solar Project interconnect transmission system would require construction of approximately 2.0 miles of double-circuit 230-kV transmission line to transmit the electricity generated on the project site to the SCE transmission facilities.

Related permanent facilities on the project site will include a Main Services Complex, which would be in a central location on site to provide for efficient access routes for maintenance vehicles servicing the SunCatcher solar field. The Main Services Complex would include the following:

- **Operation and Administration Building.** The project administration offices and personnel facilities would be in this one-story building. This building would also contain meeting and training rooms, engineering offices, a visitor's room, and support services. The project maintenance facilities, shop, and warehouse storage will be adjacent to the operation and administration building.
- **Maintenance Building.** The maintenance building would contain maintenance shops and offices, PCU rebuild areas, maintenance vehicle servicing bays, chemical storage rooms, the main electrical room, and warehouse storage for maintenance parts to service the SunCatchers.
- **Water Treatment System.** The water treatment structure would be southeast of the Main Services Complex. The water treatment structure would house water treatment equipment and safe storage areas for water treatment chemicals. A motor control center for the water treatment equipment and pumps will be located within this structure. Two wastewater evaporative ponds designed for wastewater containment would be located south of the water treatment structure.
- **Yard Tanks.** The yard tanks would be at-grade steel tank reservoirs and/or polyethylene tanks. The water treatment system would include a raw water tank with a permanent booster pump station, a potable water treatment system, ground-set steel or polyethylene potable water and a fire water storage tank, a booster pump station to accommodate potable water needs and fire-flow requirements, a disinfection system, a demineralized water treatment system for mirror washing water, a polyethylene storage tank for demineralized water storage, chemical storage, reject water and sludge disposal and evaporation ponds, and various support piping, valves, and miscellaneous equipment to support the system. All tanks, foundations,

and piping connections would be designed and constructed to the appropriate standards for contents and seismic zone considerations.

- **Control Building.** The control building would be near the substation. This building would contain relay and control systems for the substation and the operations control room.
- **Utilities and Services for Ancillary Facilities and Structures.** A diesel powered fire water pump and a diesel operated standby power generator would be adjacent to the operation and administration building. Electric service for the Main Services Complex would be obtained from SCE. Electric power will be provided via overhead service from an SCE overhead distribution line located. Communications service will be provided via an overhead service from existing underground communications lines located on the north side of the railroad located north of Interstate 40.

### **Construction Logistics Area**

The Applicant proposes using one temporary construction logistics area for staging contractor equipment and trailers, assembly yards, storage of materials, equipment laydown and wash area, construction personnel parking, and assembly areas for SunCatchers. The temporary facilities and structures in that construction logistics area would include:

- **Assembly Building.** SunCatcher assembly would be performed in one temporary assembly building in the construction logistics area. This building would be removed after all of the SunCatchers have been assembled and installed. The assembly building would be beside the Main Services Complex.
- **Transport trailer storage.** Storage for trailers would be provided south of the assembly buildings in a storage facility that will accommodate 75 to 100 trailers, maintaining a 3- to 5-day inventory of SunCatcher parts during the assembly phase. These trailers would be removed and salvaged after all of the SunCatchers have been installed.
- **Laydown Area.** One construction laydown area would be provided: immediately south of the Main Services Complex.

Construction of the Calico Solar Project is expected to begin in late 2010 and would take a total of approximately 44 months for full project construction. The construction period may not be continuous. However, renewable power from the project could come online much earlier than 44 months after the start of the project. As groups of SunCatchers are constructed and become operational, their renewable power would immediately be supplied to the grid.

### **Water Supply and Discharge**

The Applicant proposes to use groundwater for project construction and operation obtained from a well located in Cadiz, California. Cadiz is located approximately 64 miles southeast of the proposed project site within the Cadiz Valley groundwater basin of the Colorado River Hydrologic Region.

The Applicant is also currently drilling wells and conducting aquifer testing to further assess groundwater conditions at the project site.

The Applicant proposes to use treated groundwater for potable needs. The groundwater would first be demineralized, then stored in a designated storage facility equipped with chemical dosage for disinfection. This treated potable water would be available at the Main Services Complex and may be piped to the Satellite Service Complex. If potable water is not piped to the Satellite Services Complex, bottled water would be made available.

### **Fire Protection**

The Main Services Complex would include an approximately 175,000-gal water tank for mirror washing and fire suppression and control. Portable fire extinguishers would be located at strategic locations throughout the site. The fixed fire protection system would provide a wet, water-based sprinkler fire suppression system for the buildings. Employees would be given fire safety training, including instruction in fire prevention, the use of portable fire extinguishers and hose stations, and the reporting of fires to the local fire department.

### **Access Roads and Maintenance Paths**

Arterial roads, unpaved perimeter roads, and unpaved access routes would be constructed on the Calico Solar Project site. Site access during the construction phase will be provided from Hector Road, which has an existing interchange from I-40 at the southwest portion of the site.

### **Site Security and Fencing (During Construction and Operations)**

The 8,230-acre project site would be fenced, excluding the private parcels of land designated as not a part of the project. Access to the federal land managed by the BLM would be authorized under a ROW grant. Operations site security would consist of controlled access gates, perimeter security fencing, 24-hour site security monitoring via closed-circuit television and intercom, and regular vehicular patrols. Construction security would consist of fencing installed around the perimeter of the project site at the start of construction, and gated entrances and exits.

### **Stormwater Management Approach**

The project site would be developed utilizing the existing land features without undergoing major grading operations. Off-site flow would be intercepted prior to entering the project site using large debris basins located at the toe of each mountainous drainage basin near the northern project boundary. These project debris basins are designed to retain storm water discharge and associated debris resulting from a 100-year storm. In addition to intercepting debris from the mountains, the proposed debris basins will also provide for peak runoff attenuation of the surface flows. The design attempts to protect the project site from flooding, sediment deposition, and scour. Onsite runoff will be intercepted in detention basins constructed onsite and sized to retain the 100-year onsite runoff and debris flows. The onsite basins are designed to retain 4-years of average sediment accumulation for the area or subarea they are designated to serve.

A Storm Water Pollution Prevention Plan (SWPPP) would be prepared. Site drainage during construction would follow pre-development flow patterns, with ultimate discharge to property boundary. Low-flow culverts consisting of a small diameter storm drain with

a perforated stem pipe will be installed for sediment control and to provide for storm peak attenuation. The design and location of the detention basins would depend upon the Proposed Action or Action Alternative selected.

### **Facility Operation and Maintenance**

The Calico Solar Project would be an “as-available” resource. Therefore, the project would operate anywhere between a minimum of approximately 18 MW net when the first SunCatcher units are interconnected to the transmission grid during the construction period to 850 MW on completion of construction. The capability for independent operation of all 34,000 units would give maximum flexibility in operations. The Calico Solar Project is expected to have an annual availability of 99%.

The Calico Solar Project would operate approximately 3,500 hours annually. The number of available operating hours would depend on the availability of the sun’s energy at greater than 250 watts per square meter. SunCatchers would be unable to generate electricity when the sun’s energy is below 250 watts per square meter in the early morning or late evening hours and when cloud cover limits the sun’s energy for power generation. Also, SunCatchers would be unable to generate electricity during daylight hours when the wind speed exceeds 35 miles per hour (mph), as SunCatchers will be stowed in a safe de-track position at and above this wind speed to prevent damage. The Applicant anticipates that the Calico Solar Project would be operated with a staff of approximately 164 full-time employees. The project would operate 7 days per week, generating electricity during daylight hours when solar energy is available. Maintenance activities would occur 7 days a week, 24 hours a day to ensure SunCatcher availability when solar energy is available. Maintenance activities would include SunCatcher mirror washing. The daily average water requirement for SunCatcher mirror washing under regular maintenance routines would be approximately 10.4 gal of raw water per minute.

### **Waste Management**

Wastewater generated at the Main Services Complex would be discharged into a septic system with

sanitary leach fields, and would be designed in accordance with applicable Laws, Ordinances, Regulations, and Standards (LORS), including those of San Bernardino County, the Regional Water Quality Control Board (RWQCB), and the California Department of Health Services (CDHS). Disposal of clear liquids would be conveyed to on-site sanitary leach fields, and sewer sludge would be pumped and disposed of by trucks to an approved offsite disposal facility.

Solid waste from the Calico Solar Project water treatment system would be trucked to an appropriate off-site landfill from two evaporation ponds as a non-hazardous, low-moisture cake. An estimated 60,000 pounds (lbs) per year of salt cake would be trucked off-site to an appropriate landfill or recycled. The full 60,000 lbs would be scheduled for removal at the end of the evaporation process. Approximately 1.5 loads would be required per year.

Non-hazardous wastes generated during construction and operation includes scrap wood, concrete, steel/metal, paper, glass, scrap metals and plastic waste. All non-hazardous

wastes would be recycled to the extent possible and non-recyclable wastes would be collected by a licensed hauler and disposed in a Class III solid waste disposal facility. Hazardous wastes would be recycled to the extent possible and disposed in either a Class I or II waste facility as appropriate. All operational wastes produced at the Calico Solar Project would be properly collected, treated (if necessary), and disposed of at either a Class I or II waste facility as appropriate.

Hazardous materials used during facility construction and operations would include paints, epoxies, grease, transformer oil, and caustic electrolytes (battery fluid). Several methods would be used to properly manage and dispose of hazardous materials and wastes. A Hazardous Materials Management Program

(HMMP) would be developed and implemented during the project construction and operation phases. At a minimum, the HMMP would include procedures for hazardous materials handling, use and storage; emergency response; spill control and prevention; employee training; and recordkeeping and reporting.

### **Project Decommissioning**

Project closure can be temporary or permanent. Temporary closure is defined as a shutdown for a period exceeding the time required for normal maintenance, including closure for overhaul or replacement of the major components, such as major transformers, switchgear, etc. Causes for temporary closure include inclement weather and/or natural hazards (e.g., winds in excess of 35 mph, or cloudy conditions limiting solar insolation values to below the minimum solar insolation required for positive power generation, etc.), or damage to the Project from earthquake, fire, storm, or other natural acts. Permanent closure is defined as a cessation in operations with no intent to restart operations owing to Project age, damage to the Project that is beyond repair, adverse economic conditions, or other significant reasons.

In the unforeseen event that the Calico Solar Project is temporarily closed, a contingency plan for the temporary cessation of operations would be implemented. The contingency plan would be followed to ensure conformance with applicable LORS and to protect public health, safety, and the environment. The plan, depending on the expected duration of the shutdown, may include the draining of chemicals from storage tanks and other equipment and the safe shutdown of equipment.

The planned life of the Calico Solar Project is 40 years; however, if the Calico Solar Project is still economically viable, it could be operated longer. It is also possible that the Calico Solar Project could become economically noncompetitive before 40 years have passed, resulting in early decommissioning. When the Calico Solar Project is permanently closed, all the project equipment, facilities, structures and appurtenant facilities must be removed from the site. Because the conditions that would affect the decommissioning decision are largely unknown at this time, these conditions would be presented to the CEC, the BLM, and other applicable agencies in a detailed decommissioning plan prior to the planned permanent decommissioning.

## ALTERNATIVES

In addition to the proposed Calico Solar Project, two other Build Alternatives on the same general site and three No Project/No Action Alternatives are also evaluated in detail in this environmental document. **Executive Summary Table 1** summarizes the acreages and MW production of the two build alternatives and **Executive Summary Table 2** describes the three No Project/No Action Alternatives. The two build alternatives include a Reduced Acreage Alternative, and the Avoidance of Donated and Acquired Lands Alternative that would avoid donated lands and lands acquired with federal Land and Water Conservation Funds. The No Project/No Action Alternatives all consider not approving the Calico Solar Project and either amending or not amending the CDCA Plan as required regarding land use designations for the site.

**Executive Summary Table 1  
Summary of the Build Alternatives**

<b>Build Alternative</b>	<b>Megawatts</b>	<b>Acres (approximate)</b>	<b>SunCatchers</b>
Calico Solar Project	850	8,230	34,000
<b>Reduced Acreage Alternative:</b> proposes construction and operation of a 2,600-acre facility using the SunCatcher technology. On-site facilities would be similar to the Calico Solar Project. This alternative would require the SCE 275-MW Early Interconnection Option upgrade.	275	2,600	11,000
<b>Avoidance of Donated and Acquired Lands Alternative:</b> developed to avoid impacts to donated and LWCF-acquired lands on the project site. The boundary of this alternative would be similar to the site boundary of the proposed action less donated and acquired land parcels. This alternative would require the SCE Full Build-out Option upgrade.	720	7,050	28,800

**Executive Summary Table 2  
Summary of the No Project/No Action Alternatives**

<b>No Project/No Action Alternative</b>	<b>Calico Solar Project?</b>	<b>Amendment to the CDCA Plan?</b>
1) No Approval of the Calico Solar Project and no CDCA Plan Amendment	Calico Solar Project not approved: no solar energy power generation project would be constructed on the project site	No CDCA Plan Amendment: BLM would continue to manage the site consistent with the existing land use designation in the CDCA Plan for the site
2) No Approval of the Calico Solar Project and Amendment of the CDCA Plan to Allow Solar Energy Power Generation Projects on the Project Site	Calico Solar Project not approved: solar energy power generation projects could be constructed on the site (as a result of the CDCA Plan amendment)	Yes: BLM would amend the CDCA Plan to allow for solar energy power generation projects on the site
3) No Approval of the Calico Solar Project and BLM Amends the CDCA Plan to Not Allow Any Solar Energy Power Generation Projects on the Project Site	Calico Solar Project not approved: no solar energy power generation projects could be constructed on the site (as a result of the CDCA Plan amendment)	Yes: BLM would amend the CDCA Plan to not allow any solar energy power generation projects on the project site

**Comparison of the Alternatives**

**Executive Summary Table 3** describes the ability of the Calico Solar Project, the two build alternatives, and the three No Project/No Action Alternatives to meet the defined project purpose and objectives.

**Executive Summary Table 3  
Ability of the Alternatives to Meet the Project Purpose and Objectives and Site Criteria**

Project Purpose and Objectives	Calico Solar Project	275-MW Reduced Acreage Alternative	Avoidance of Donated and Acquired Lands Alternative	No Approval of Calico Solar Project and No CDCA Plan Amendment	No Approval of Calico Solar Project and Amendment of CDCA Plan to Allow Solar Energy Power Generation Projects on Project Site	No Approval of Calico Solar Project and BLM Amends CDCA Plan to Not Allow Any Solar Energy Power Generation Projects on Project Site
Provide clean, renewable, solar-powered electricity and to assist SCE in meeting its obligations under California's Renewable Portfolio Standard Program (RPS)	Yes	Yes	Yes	No	Potentially	No
Assist SCE in reducing its greenhouse gas emissions as required by the California Global Warming Solutions Act	Yes	Yes	Yes	No	Potentially	No
Provide up to 850 MW of renewable electric capacity under a 20-year PPA with SCE	Yes	No	No	No	Potentially	No
Contribute to the 20% renewables RPS target set by California's governor and legislature	Yes	Yes	Yes	No	Potentially	No
Assist in reducing greenhouse gas emissions from the electricity sector	Yes	Yes	Yes	No	Potentially	No
Contribute to California's future electric power needs	Yes	Yes	Yes	No	Potentially	No

Project Purpose and Objectives	Calico Solar Project	275-MW Reduced Acreage Alternative	Avoidance of Donated and Acquired Lands Alternative	No Approval of Calico Solar Project and No CDCA Plan Amendment	No Approval of Calico Solar Project and Amendment of CDCA Plan to Allow Solar Energy Power Generation Projects on Project Site	No Approval of Calico Solar Project and BLM Amends CDCA Plan to Not Allow Any Solar Energy Power Generation Projects on Project Site
Assist the California Independent System Operator (CAISO) in meeting its strategic goals for the integration of renewable resources, as listed in its Five-Year Strategic Plan for 2008-2012 (CAISO 2007)	Yes	Yes	Yes	No	Potentially	No
To construct and operate a 850 MW renewable power generating facility in California capable of selling competitively priced renewable energy consistent with the needs of California utilities	Yes	No	No	No	Potentially	No
To locate the facility in areas of high solarity with ground slope of less than 5%	Yes	Yes	Yes	No	Potentially	No

## **PUBLIC AND AGENCY COORDINATION**

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The Energy Commission's CEQA-equivalent process and the BLM's NEPA process provide opportunities for the public and other agencies to participate and consult in the scoping of the environmental analysis of this proposed project, and in the evaluation of the technical analyses and conclusions of that analysis. The following subsections describe the status of these outreach efforts for the proposed Calico Solar Project. These activities are also described in the *Final Scoping Report*.

### **Agency Coordination**

The Energy Commission certification is in lieu of any permit required by state, regional, or local agencies and by federal agencies to the extent permitted by federal law (Public Resources Code, Section 25500). However, both the Energy Commission and BLM typically seek comments from and work closely with other regulatory agencies that administer LORS that may be applicable to a proposed project. The following paragraphs describe the agency coordination that has occurred through this joint SA/EIS process for the proposed Calico Solar Project.

### **United States Army Corps of Engineers**

The United States Army Corps of Engineers (USACE) has jurisdiction to protect water quality and wetland resources under Section 404 of the Clean Water Act. Under that authority, USACE reviews proposed projects to determine whether they may impact such resources, and/or be subject to the requirements for a Section 404 permit. Throughout the SA/DEIS process, the Energy Commission, BLM, and the Applicant have provided information to the USACE to assist them in making a determination regarding their jurisdiction and need for a Section 404 permit. No jurisdictional determination has yet been made.

### **United States Fish and Wildlife Service**

The United States Fish and Wildlife Service (USFWS) has jurisdiction to protect threatened and endangered species under the federal Endangered Species Act (ESA). Formal consultation with the USFWS under Section 7 of the ESA is required for any federal action that may adversely affect a federally listed species. The site is known to be occupied by desert tortoise. The desert tortoise is currently listed as threatened under the federal ESA and state ESA.

### **State Water Resources Control Board/Regional Water Quality Control Board**

The Regional Water Quality Control Board (RWQCB) has the authority to protect surface water and groundwater. Throughout the SA/DEIS process, the Energy Commission, BLM, and the Applicant have invited the RWQCB to participate in public scoping and workshops, and have provided information to assist the agency in evaluating the potential impacts and permitting requirements of the proposed project.

### **California Department of Fish and Game**

The California Department of Fish and Game (CDFG) have the authority to protect water resources through regulation of modifications to streambeds, under Section 1602 of the

Fish and Game Code. The Energy Commission, BLM, and the applicant have provided information to CDFG to assist in their determination of the impacts to streambeds, and identification of permit and mitigation requirements. The CDFG also has the authority to regulate potential impacts to species that are protected under the California Endangered Species Act (CESA).

### **San Bernardino County**

The revised Calico Solar Project site contains no private land under the jurisdiction of San Bernardino County (County). The Energy Commission and BLM provided opportunities during scoping for the County to provide input to the environmental technical studies for the project.

### **Public Coordination**

The Energy Commission's CEQA-equivalent process and the BLM's NEPA process provide opportunities for public participation in the scoping of the environmental analysis, and in the evaluation of the technical analyses and conclusions of that analysis. For the Energy Commission, this outreach program is primarily facilitated by the Public Adviser's Office (PAO). As part of the coordination of the environmental review process required under the Memorandum of Understanding (MOU) between the Energy Commission and the BLM California Desert District, the Energy Commission and BLM have jointly held public meetings and workshops which accomplish the public coordination objectives of both agencies.

The PAO's public outreach is an integral part of the Energy Commission's AFC review process. The PAO reviewed information provided by the Applicant and also conducted its own outreach efforts to identify and locate local elected and certain appointed officials, as well as "sensitive receptors" (including schools, community, cultural and health facilities and daycare and senior-care centers, as well as environmental and ethnic organizations). Those agencies and individuals that provided comments concerning the project have been considered in staff's analysis. This SA/DEIS provides agencies and the public with an opportunity to review the Energy Commission's staff's analysis of the proposed project. Comments received on this SA/DEIS will be taken into consideration in preparing the subsequent project documents, including the Supplemental SA/Final EIS.

The AFC, this SA/DEIS, and other project documents are located on the Energy Commission's website at <http://www.energy.ca.gov/sitingcases/calicosolar/index.html>.

## **STAFF'S ASSESSMENT**

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Each technical area section of this SA/DEIS contains a discussion of the project setting, impacts, and where appropriate, mitigation measures and Conditions of Certification. The SA/DEIS includes the staff's assessment of:

- the environmental setting of the proposal;
- impacts on public health and safety, and measures proposed to mitigate these impacts;
- environmental impacts, and measures proposed to mitigate these impacts;

- the engineering design of the proposed facility, and engineering measures proposed to ensure the project can be constructed and operated safely and reliably;
- project closure;
- project alternatives;
- compliance of the project with all applicable laws, ordinances, regulations and standards (LORS) during construction and operation;
- environmental justice for minority and low income populations, when appropriate; and
- proposed mitigation measures/Conditions of Certification.

## **SUMMARY OF PROJECT RELATED IMPACTS**

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**Executive Summary Table 4** summarizes the potential short- and long-term and cumulative adverse impacts of the proposed Calico Solar Project, the anticipated mitigation and Conditions of Certification, and the level of significance of the impacts after mitigation, under CEQA.

Note that the Energy Commission's "recommended Conditions of Certification" are incorporated into the proposed action that is analyzed by BLM for purposes of NEPA compliance, and the NEPA conclusions regarding potential impacts assume that these mitigations will be implemented as authorized through decision.

**Executive Summary Table 4**  
**Summary of Potential Short-Term, Long-Term, and Cumulative Adverse Impacts**

<b>Environmental Parameter</b>	<b>Complies with Applicable LORS</b>	<b>Short- and Long-Term Adverse Impacts</b>	<b>Cumulative Adverse Impacts</b>	<b>Mitigation and Conditions of Certification</b>	<b>CEQA Level of Significance After Mitigation</b>
Air Quality	Yes	No significant short term or long term adverse impacts with mitigation/Conditions of Certification incorporated	No cumulative adverse impacts	<b>AQ-1</b> through <b>AQ-15</b> and <b>AQ-SC1</b> through <b>AQ-SC9</b>	Less than significant
Biological Resources	Yes	No significant short term or long term adverse impacts with mitigation/Conditions of Certification incorporated	Would result in significant impacts to Newberry Springs watershed streams, desert tortoise, Mohave fringe-toed lizard, big horned sheep occupied range, white-margined beardtongue, and wildlife movement and connectivity	<b>BIO-1</b> through <b>BIO-29</b>	Significant and unavoidable
Cultural Resources	Yes	Potential for significant adverse impacts with mitigation/Conditions of Certification incorporated	Potential for cumulative adverse impacts	<b>CUL-1</b>	Potential for significant and unavoidable impacts
Facility Design	Yes	No significant short term or long term adverse impacts with mitigation/Conditions of Certification incorporated	Not applicable	General Conditions	Less than significant
Geology, Paleontology, and Minerals	Yes	No significant short term or long term adverse impacts with mitigation/Conditions of Certification incorporated	No cumulative adverse impacts	<b>PAL-1</b> through <b>PAL-7</b> , and <b>GEN-1</b> , <b>GEN-5</b> , and <b>CIVIL-1</b>	Less than significant
Hazardous Materials	Yes	No significant short term or long term adverse impacts with mitigation/Conditions of Certification incorporated	No cumulative adverse impacts	<b>HAZ-1</b> through <b>HAZ-6</b>	Less than significant

Environmental Parameter	Complies with Applicable LORS	Short- and Long-Term Adverse Impacts	Cumulative Adverse Impacts	Mitigation and Conditions of Certification	CEQA Level of Significance After Mitigation
Hydrology, Soils and Water Resources	Yes	No significant short term or long term adverse impacts with mitigation/Conditions of Certification incorporated	No cumulative adverse impacts	<b>SOIL&amp;WATER-1</b> through <b>SOIL&amp;WATER-6</b>	Less than significant
Land Use and Recreation	<b>No</b>	No Significant short term and long term adverse impacts reduced with mitigation/Conditions of Certification incorporated	Would result in significant impacts related to cumulative land conversion	<b>None proposed</b>	Cumulative land use impacts from land conversion would be significant and unavoidable.
Noise and Vibration	Yes	No significant short term or long term adverse impacts with mitigation/Conditions of Certification incorporated	No cumulative adverse impacts	<b>NOISE-1</b> through <b>NOISE-6</b>	Less than significant
Public Health and Safety	Yes	No significant short term or long term adverse impacts with mitigation/Conditions of Certification incorporated	No cumulative adverse impacts	None required	Less than significant
Power Plant Efficiency	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Power Plant Reliability	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Socioeconomic and Environmental Justice	Yes	No significant short term or long term adverse impacts with mitigation/Conditions of Certification incorporated	No cumulative adverse impacts	None required	Less than significant
Traffic and Transportation	Yes	No significant short term or long term adverse impacts with mitigation/Conditions of Certification incorporated	No cumulative adverse impacts	<b>TRANS-1</b> through <b>TRANS-7</b>	Less than significant

<b>Environmental Parameter</b>	<b>Complies with Applicable LORS</b>	<b>Short- and Long-Term Adverse Impacts</b>	<b>Cumulative Adverse Impacts</b>	<b>Mitigation and Conditions of Certification</b>	<b>CEQA Level of Significance After Mitigation</b>
Transmission Line Safety/Nuisance	Yes	No significant short term or long term adverse impacts with mitigation/Conditions of Certification incorporated	No cumulative adverse impacts	<b>TLSN-1</b> through <b>TLSN-4</b>	Less than significant
Transmission System Engineering	Yes	No significant short term or long term adverse impacts with mitigation/Conditions of Certification incorporated	No cumulative adverse impacts	<b>TSE-1</b> through <b>TSE-7</b>	Less than significant
Visual Resources	<b>No</b>	Would result in significant short term (construction) and long term (operation) adverse impacts.	Could result in cumulative adverse impacts	<b>VIS-1</b> through <b>VIS-5</b>	Significant and unavoidable
Waste Management	Yes	No significant short term or long term adverse impacts with mitigation/Conditions of Certification incorporated	No cumulative adverse impacts	<b>WASTE-1</b> through <b>WASTE-8</b>	Less than significant
Worker Safety and Fire Protection	Yes	No significant short term or long term adverse impacts with mitigation/Conditions of Certification incorporated	Could result in cumulative adverse impacts	<b>WORKER SAFETY-1</b> through <b>WORKER SAFETY-7</b>	Less than significant

## **Air Quality**

The staff concludes that with the adoption of the air quality Conditions of Certification the proposed Calico Solar Project would comply with all applicable LORS and would not result in any significant CEQA air quality impacts. These Conditions of Certification meet the CEC's responsibility to comply with CEQA and the BLM's responsibility to comply with the NEPA.

Staff concludes that the proposed project would not have the potential to exceed PSD emission threshold levels during direct source operation and the facility is not considered a major stationary source with potential to cause adverse NEPA air quality impacts. However, without adequate fugitive dust mitigation, the proposed project would have the potential to exceed the General Conformity PM10 applicability threshold during construction and operation, and could cause potential localized exceedances of the PM10 NAAQS during construction and operation. This potential exceedance of federal air quality standards would be considered a direct, adverse impact under the NEPA. This impact would be less than adverse with the proposed mitigation measures controlling fugitive dust.

The Calico Solar Project would emit substantially lower greenhouse gas (GHG)<sup>1</sup> emissions per megawatt-hour than fossil fueled generation resources in California. The Calico Solar Project, as a renewable energy generation facility, is determined by rule to comply with the Greenhouse Gas Emission Performance Standard requirements of SB 1368 (Chapter 11, Greenhouse Gases Emission Performance Standard, Article 1, Section 2903 [b][1]).

**Alternatives.** The Reduced Acreage Alternative would use approximately 32% of the SunCatchers, provide 32% of the power generating potential, and would affect approximately 32% of the land of the proposed 850-MW project. The worst-case short-term construction emissions and ground level pollutant concentration impacts would be similar to the proposed project and would require the same level of mitigation. The total construction period and total construction emissions and long-term ground level pollutant concentration impacts would be reduced from those required to construct the proposed project. The benefits of the proposed project in displacing fossil fuel fired generation and reducing associated, but mainly out of air basin, criteria pollutant emissions would be reduced. The impacts of the proposed project would not occur on the lands not used due to the smaller project size. However, the land on which the project is proposed would become available to other uses that are consistent with BLM's CDCA Plan, including another solar project. The CEQA level of significance for the Reduced Acreage Alternative would be the same as for the proposed project, with the same significance rationale, where if left unmitigated there is the potential for significant NO<sub>x</sub> and PM emission impacts during the Alternative project's construction and operation. The mitigation that would be proposed for the Reduced Acreage Alternative would be the same as that proposed for the proposed project.

The Avoidance of Donated and Acquired Lands Alternative would use approximately 85% of the SunCatchers, provide 85% of the power generating potential, and would

affect approximately 86% of the land (7,050 acres) of the proposed 850-MW project. Additionally, like the proposed project, the Avoidance of Donated and Acquired Lands Alternative would require the SCE Full Build-out Option upgrade. The worst-case short-term construction emissions and ground level pollutant concentration impacts would be nearly the same as the proposed project and would require the same level of mitigation. The total construction period and total construction emissions and long-term ground level pollutant concentration impacts would be marginally reduced from those required to construct the proposed project. The benefits of the proposed project in displacing fossil fuel fired generation and reducing associated, but mainly out of air basin, criteria pollutant emissions would be slightly reduced. The impacts of the proposed project would not occur on the donated or acquired lands. However, the land on which the project is proposed may become available to other uses that are consistent with BLM's land use plan, including another solar project. The level of significance under CEQA for the Avoidance of Donated and Acquired Lands Alternative would be the same as for the proposed project, with the same significance rationale, where if left unmitigated there is the potential for significant NOx and PM emission impacts during the Alternative project's construction and operation. The mitigation that would be proposed for the Avoidance of Donated and Acquired Lands Alternative would be the same as that proposed for the proposed project (staff recommended Conditions of Certification).

Under the three No Action/No Project Alternatives, the air quality impacts of the proposed project would not occur. However, the land on which the project is proposed could become available to other uses, including another renewable energy project, if the proposal is consistent with BLM's California Desert Conservation Area (CDCA) land use plan. This would occur under the No Action/No Project Alternative (2) which includes a CDCA Plan Amendment allowing for future renewable energy development on this project site.

### **Biological Resources**

The staff concludes that without mitigation, the Calico Solar Project would be a substantial contributor to the cumulatively significant loss of the Mojave Desert's biological resources, including the State and federally threatened desert tortoise and other special-status species. Impact avoidance and minimization measures described in staff's analysis and included in the Conditions of Certification would help reduce impacts to sensitive biological resources. However, compensatory measures are necessary to offset project-related losses, and to assure compliance with State and federal laws such as the federal and State Endangered Species Acts and regulations protecting waters of the State.

**Alternatives.** The Reduced Acreage Alternative would reduce some impacts to biological resources identified on the site, including desert washes, desert tortoise habitat and some identified populations of rare plants. The footprint of the Reduced Acreage Alternative would also minimize potential conflicts with Nelson's bighorn sheep by avoiding potential foraging habitat and providing greater distance between bighorn sheep and construction/operation activities. While barriers to wildlife movement would still remain, by moving the project footprint away from the foothills, the project would reduce barriers to wildlife movement for desert tortoise, bighorn sheep and other species. The Conditions of Certification are the same as those for the proposed project.

Implementation of these Conditions would mitigate for the direct, indirect and cumulative impacts of the Reduced Acreage Alternative, and would be less than significant under CEQA.

The Avoidance of Donated and Acquired Lands Alternative would decrease the project site by 15% for a total project size of 7,050 acres. Implementation of the Avoidance of Donated and Acquired Lands Alternative would have the same types of impacts as the proposed alternative but the magnitude would be decreased. Similar to the proposed project, this 720-MW alternative would also require the upgrades to the SCE Pisgah-Lugo transmission line and the Pisgah Substation and result in the same biological impacts in those areas. The Conditions of Certification are the same as those for the proposed project. Implementation of these Conditions would mitigate for the direct, indirect and cumulative impacts of the Reduced Acreage Alternative, and would be less than significant under CEQA.

Under the three No Action/No Project Alternatives, the impacts to biological resources from the proposed project would not occur. However, the land on which the project is proposed could become available to other uses, including another renewable energy project, if the proposal is consistent with BLM's California Desert Conservation Area (CDCA) land use plan. This would occur under the No Action/No Project Alternative (2) which includes a CDCA Plan Amendment allowing for future renewable energy development on this project site.

### **Cultural Resources**

On the basis of a 25% sample of the cultural resources inventory of the project area of analysis, staff conclude that the Calico Solar Project would have significant impacts/effects on a presently unknown subset of approximately 139 known prehistoric and historical surface archaeological resources and may have significant impacts/effects on an unknown number of buried archaeological deposits, many of which may be determined historically significant (i.e. eligible for the National Register of Historic Places and the California Register of Historical Resources) under the Programmatic Agreement currently under development as part of the Bureau of Land Management's National Historic Preservation Act Section 106 (Section 106) consultation process. The adoption and implementation of the Condition of Certification would reduce the potential impacts of the proposed action on these cultural resources to less than significant under CEQA, would resolve effects under Section 106, and would further ensure that the proposed action would be in conformity with all applicable LORS.

**Alternatives.** The Reduced Acreage Alternative would substantially reduce the impacts of the project by occupying only 31% of the proposed project area and avoiding many sensitive cultural resources. Fifteen cultural resources sites have been identified as part of the 25% re-survey for this alternative. The Reduced Acreage Alternative is anticipated to have significant effect per NEPA, significant impact per CEQA, and adverse effect per Section 106 of the NHPA. When resource evaluations have been completed, impacts will be assessed. The observation and identification of 15 cultural resources thus far as part of the 25% re-survey suggests periodic use of the project landform in the past. Severity and extent of impacts would be reduced given the presence of fewer cultural resources within this alternative that is 31% the size of the proposed project. If impacts are deemed significant, mitigation measures would be stipulated and refined in

a Programmatic Agreement negotiated among all consulting parties and executed by the BLM, as described for the proposed Project.

Although the Reduced Acreage alternative would result in a reduction of impacts to cultural resources, it cannot be determined with the presently-available information whether impacts to historically-significant resources would occur, and if so, whether they could be avoided. Therefore, it is presumed that this alternative could also result in significant impacts under CEQA. While implementation of a Programmatic Agreement is anticipated to reduce the severity of impacts to cultural resources, it cannot be determined at this time whether impacts would be reduced to a level below significance under CEQA. Therefore, it is anticipated that this alternative has the potential to result in significant unavoidable impacts under CEQA, though the severity of impacts would be less than with the proposed Project.

The Avoidance of Donated and Acquired Lands Alternative would retain 85% of the proposed SunCatchers and would affect 85% of the land of the proposed 850-MW project. Forty-four cultural resource sites have been identified as part of the 25% re-survey for this alternative. Because the Avoidance of Donated and Acquired Lands Alternative would generate approximately 720 MW of power, it would (similar to the proposed project) require a 65-mile upgrade to the SCE Pisgah-Lugo transmission line and upgrades to the Pisgah Substation. This alternative is anticipated to have significant effect per NEPA, significant impact per CEQA, adverse effect per Section 106 of the NHPA. A Programmatic Agreement would be drafted and negotiated among all consulting parties, including interested Tribes. The agreement would stipulate the development of treatment plans, including the refinement and definition of mitigation measures.

Although the Avoidance of Donated and Acquired Lands Alternative would result in a reduction of impacts to cultural resources, it cannot be determined with the presently-available information whether impacts to historically-significant resources would occur, and if so, whether they could be avoided. Therefore, it is presumed that this alternative could also result in significant impacts under CEQA. While implementation of a Programmatic Agreement is anticipated to reduce the severity of impacts to cultural resources, it cannot be determined at this time whether impacts would be reduced to a level below significance under CEQA. Therefore, it is anticipated that this alternative has the potential to result in significant unavoidable impacts under CEQA. The severity of impacts would be less than with the proposed Project, but would likely be greater than the Reduced Acreage alternative.

Under the three No Action/No Project Alternatives, the impacts to cultural resources from the proposed project would not occur. However, the land on which the project is proposed could become available to other uses, including another renewable energy project, if the proposal is consistent with BLM's California Desert Conservation Area (CDCA) land use plan. This would occur under the No Action/No Project Alternative (2) which includes a CDCA Plan Amendment allowing for future renewable energy development on this project site.

## **Facility Design**

Staff conclude that the design, construction, and decommissioning of the project and its linear facilities would likely comply with applicable engineering LORS. The proposed Conditions of Certification in **Executive Summary Table 4** would ensure compliance with the applicable LORS. The Facility Design section is not intended to address environmental impacts under either CEQA or NEPA.

**Alternatives.** The same LORS and Conditions of Certification would also apply to the Reduced Acreage Alternative and the Avoidance of Donated and Acquired Lands Alternative. The Facility Design section is not intended to address environmental impacts under either CEQA or NEPA.

Under the three No Action/No Project Alternatives, the proposed project would not occur. However, the land on which the project is proposed could become available to other uses, including another renewable energy project, if the proposal is consistent with BLM's California Desert Conservation Area (CDCA) land use plan. This would occur under the No Action/No Project Alternative (2) which includes a CDCA Plan Amendment allowing for future renewable energy development on this project site.

## **Geology, Paleontology, and Minerals**

Staff believes that the potential is low for significant adverse impacts to the proposed project from geologic hazards during its design life and to potential geologic, mineralogic, and paleontologic resources from the construction, operation, and closure of the proposed project. The Calico Solar Project could be designed and constructed in accordance with all applicable LORS and in a manner that both protects environmental quality and assures public safety, to the extent practical.

**Alternatives.** Like the proposed project, the potential is low for significant adverse impacts to the Reduced Acreage Alternative from geological hazards during its design life and moderate to high paleontological resources from the construction, operation, and closure of the proposed project. Staff concludes that this alternative would be designed and constructed in accordance with all applicable LORS and in a manner that both protects environmental quality and assures public safety. The CEQA level of significance would remain unchanged from the proposed project.

Like the proposed project, the potential is low for significant adverse impacts to the Avoidance of Donated and Acquired Lands Alternative from geological hazards during its design life and moderate to high paleontological resources from the construction, operation, and closure of the proposed project. Staff concludes that this alternative will be designed and constructed in accordance with all applicable laws, ordinances, regulations, and standards and in a manner that both protects environmental quality and assures public safety. The CEQA level of significance would remain unchanged from the proposed project.

Under the three No Action/No Project Alternatives, the impacts to geology, paleontology and mineral resources from the proposed project would not occur. However, the land on which the project is proposed could become available to other uses, including another renewable energy project, if the proposal is consistent with BLM's California Desert

Conservation Area (CDCA) land use plan. This would occur under the No Action/No Project Alternative (2) which includes a CDCA Plan Amendment allowing for future renewable energy development on this project site

### **Hazardous Materials**

The staff's evaluation of the proposed project, along with staff's proposed mitigation measures, indicate that hazardous materials use at the proposed Calico Solar Project would not present a significant impact pursuant to CEQA on the public or environment. With adoption of the proposed Conditions of Certification, the proposed project would comply with all applicable LORS.

**Alternatives.** The Reduced Acreage alternative would not result in any significant change in the potential for impact associated with hazardous materials handling and storage. The proposed project would not pose a significant risk of public impact as a result of an accidental release of hazardous materials. This alternative would not significantly change the risk profile of the facility.

Like the proposed project, the construction and operation of the Reduced Acreage alternative would be in compliance with all applicable LORS. The significance criteria for the Reduced Acreage alternative are exactly the same as the criteria for the proposed project.

The Avoidance of Donated and Acquired Lands Alternative would not result in any significant change in the potential for impact associated with hazardous materials handling and storage. The proposed project would not pose a significant risk of public impact as a result of an accidental release of hazardous materials. This alternative would not significantly change the risk profile of the facility. Like the proposed project, the construction and operation of the Avoidance of Donated and Acquired Lands Alternative would be in compliance with all applicable LORS. The significance criteria for the Avoidance of Donated land alternative is exactly the same as the significance criteria for the proposed project.

Under the three No Action/No Project Alternatives, the use and generation of hazardous materials from the proposed project would not occur. However, the land on which the project is proposed could become available to other uses, including another renewable energy project, if the proposal is consistent with BLM's California Desert Conservation Area (CDCA) land use plan. This would occur under the No Action/No Project Alternative (2) which includes a CDCA Plan Amendment allowing for future renewable energy development on this project site.

### **Hydrology, Water Use and Water Quality**

Staff has determined that construction, operation, and decommissioning of the proposed Calico Solar Project could potentially impact soil and water resources. Where these potential impacts have been identified, staff has proposed mitigation measures to reduce identified impacts to levels that are less than significant. The mitigation measures, as well as specifications for laws, ordinances, regulations and standards (LORS) conformance, are included herein as Conditions of Certification. The Project would conform to all applicable LORS.

**Alternatives.** All of the potential impacts identified for the proposed project remain with the Reduced Acreage Alternative. However, due to the alternative's reduced physical size and reduction in number of SunCatchers, these potential impacts are proportionately reduced. There would be no change in the CEQA Level of Significance of impacts between the proposed project and the Reduced Acreage alternative.

The portion of the Avoidance of Donated and Acquired Lands Alternative in the northeastern corner of the originally proposed Calico Solar site occupies the area where flood intercept debris collection and flow detention basins were designed by the applicant to mitigate the 100-year flood impact to the site. Should the Avoidance of Donated and Acquired Lands Alternative be constructed, flood intercept debris collection and flow detention basins would need to be similarly designed and constructed downstream from the southern boundary of that donated parcel. Another donated parcel is located near the center of the original site. Should the Avoidance of Donated and Acquired Lands Alternative be constructed, onsite drainage control structures will need to be redesigned to avoid that donated parcel, while maintaining site erosion/sedimentation control. Provided the redesign of the flood control and erosion/sedimentation control structures meet the same standards as for the Calico Solar Project, no change to the CEQA Level of Significance of impacts would occur between the proposed project and the Avoidance of Donated and Acquired Lands Alternative.

Under the three No Action/No Project Alternatives, the impacts to hydrology, water use, and water quality from the proposed project would not occur. However, the land on which the project is proposed could become available to other uses, including another renewable energy project, if the proposal is consistent with BLM's California Desert Conservation Area (CDCA) Plan. This would occur under the No Action/No Project Alternative (2) which includes a CDCA Plan Amendment allowing for future renewable energy development on this project site.

### **Land Use and Recreation**

Implementation of the proposed Calico Solar Project would not result in adverse impacts to agricultural lands, rangeland resources, or horses and burros. The conversion of approximately 8,230 acres of land to support the proposed project's components and activities could disrupt wilderness resources and recreational activities in established federal, state, and local recreation areas; however, due to the abundance of wilderness and recreation sites surrounding the project area, potential impacts from the proposed project would affect a small fraction of these lands and would not be adverse. For purposes of CEQA compliance, impacts to agricultural lands and rangelands would be less-than-significant, and there would be no impacts related to Williamson Act contracts. Impacts to recreation and wilderness resources would be less-than-significant. Impacts to horses and burros would be less-than-significant. Impacts related to LORS compliance would be significant and unavoidable because the proposed project boundary contains donated and acquired lands which, pursuant to a BLM interim policy memorandum, are to be managed as avoidance/exclusion areas for land use authorizations that could result in surface disturbing activities. Although the development of renewable resources is in compliance with federal and state mandates, the conversion of thousands of acres of open space would result in a significant and unavoidable cumulative land use impact. The land conversion impacts would preclude numerous existing land uses including

recreation, wilderness, rangeland, and open space, and therefore, result in a significant and unavoidable cumulative land use impact. No Conditions of Certification are proposed.

**Alternatives.** The Reduced Acreage Alternative would occupy 2,600 acres of lands, 33% of what would be impacted by the proposed project. Similar to the proposed project, there would be no impacts on horses or burros, farmlands or rangelands. The affected lands would be entirely under BLM jurisdiction and would not contain donated or acquired lands. Accordingly this alternative would be consistent with the BLM interim policy memorandum and all applicable LORS. Impacts to wilderness, recreation and open space would be proportionately less, but the conversion of the affected open space lands to renewable energy development would preclude numerous existing land uses including recreation, wilderness, rangeland, and open space, and therefore, result in a significant cumulative land use effect. The CEQA level of significance would be less than significant for all other land use resources.

The Avoidance of Donated and Acquired Lands Alternative would occupy 7,050 acres of lands, 85% of what would be impacted by the proposed project. Similar to the proposed project, there would be no impacts on horses or burros, farmlands or rangelands. Similar to the proposed project, the Avoidance of Donated and Acquired Lands Alternative would indirectly disrupt current wilderness areas and recreational activities in established federal and state areas which would result in adverse effects on recreational users of these lands, but the impact would be proportional compared to the proposed project. The affected lands would be entirely under BLM jurisdiction and would not contain donated or acquired lands. Accordingly this alternative would be consistent with the BLM interim policy memorandum and all applicable LORS. Impacts to wilderness, recreation and open space would be proportionately less, but the conversion of the affected open space lands to renewable energy development would preclude numerous existing land uses including recreation, wilderness, rangeland, and open space, and therefore, result in a significant cumulative land use effect. The CEQA level of significance would be less than significant for all other land use resources.

Under the three No Action/No Project Alternatives, the impacts to land use and recreation from the proposed project would not occur. However, the land on which the project is proposed could become available to other uses, including another renewable energy project, if the proposal is consistent with BLM's California Desert Conservation Area (CDCA) land use plan. This would occur under the No Action/No Project Alternative (2) which includes a CDCA Plan Amendment allowing for future renewable energy development on this project site.

### **Noise and Vibration**

The staff concludes that the Calico Solar Project can be built and operated in compliance with all applicable noise and vibration LORS. If the proposed project is built in accordance with Conditions of Certification **NOISE-1** through **NOISE-7**, it would produce no significant adverse noise impacts under CEQA on people within the affected area, either direct, indirect, or cumulative.

**Alternatives.** Given the nature of the operational noise produced by the chosen project technology, the Reduced Acreage Alternative would most likely correspond to lower operational noise impacts at noise receptors located east of the project (SR2), a receptor

that faces significant, though mitigable noise impacts from the proposed project. Operational noise impacts at the receptors south of the project would likely be the same as that of the proposed 850-MW project. The CEQA level of significance of the Reduced Acreage Alternative would be unchanged from the proposed project.

The Avoidance of Donated and Acquired Lands Alternative would not substantively change the noise and vibration impacts from those of the proposed project.

Under the three No Action/No Project Alternatives, the noise and vibration impacts from the proposed project would not occur. However, the land on which the project is proposed could become available to other uses, including another renewable energy project, if the proposal is consistent with BLM's California Desert Conservation Area (CDCA) land use plan. This would occur under the No Action/No Project Alternative (2) which includes a CDCA Plan Amendment allowing for future renewable energy development on this project site.

### **Power Plant Efficiency**

The CEC staff has analyzed the potential efficiency in energy associated with construction and operation of the Calico Solar Project. The project would decrease reliance on fossil fuel due to increased availability of renewable energy resources. It would not create significant adverse effects on fossil fuel energy supplies or resources under CEQA, would not require additional sources of energy supply, and would not consume fossil fuel energy in a wasteful or inefficient manner. No efficiency standards apply to this project. The CEC staff concludes that this project would present no significant adverse impacts on fossil fuel energy resources under CEQA. If constructed and operated as proposed, the Calico Solar project would occupy nearly 9 acres per MW of power output, a figure double that of some other solar power technologies. It has not been determined how great a difference in land use would constitute a significant impact.

**Alternatives.** The Reduced Acreage Alternative would produce 275 MW while occupying 2,300 acres, resulting in a power-based land use efficiency of 0.12 MW/acre. If the Reduced Acreage Alternative were constructed, the CEQA Level of Significance as measured by land use (occupied acreage) would amount to approximately 28% of the levels described for the proposed project.

The Avoidance of Donated and Acquired Lands Alternative would produce approximately 720 MW while occupying 7,050 acres, resulting in a power-based land use efficiency of 0.102 MW/acre, about the same as the proposed project, and about half as efficient as other solar thermal technologies. The CEQA level of significance would not change from the levels described for the proposed project. No Conditions of Certification would apply.

Under the three No Action/No Project Alternatives, the proposed project would not occur. However, the land on which the project is proposed could become available to other uses, including another renewable energy project, if the proposal is consistent with BLM's California Desert Conservation Area (CDCA) land use plan. This would occur under the No Action/No Project Alternative (2) which includes a CDCA Plan Amendment allowing for future renewable energy development on this project site.

## **POWER PLANT RELIABILITY**

Staff cannot determine whether the predicted power plant availability factor of 99%, as supplied by the Applicant, is achievable. Further, staff cannot predict what the actual availability might be, given the demonstration status of the SunCatcher technology and limited data on large-scaled deployments of SunCatchers. The availability factor of a power plant is the percentage of time it is available to generate power; both planned and unplanned outages subtract from this availability. Staff believes it possible that the project may face challenges from considerable maintenance demands, reducing its availability. No Conditions of Certification are proposed.

**Alternatives.** The Reduced Acreage power plant would produce only 275 MW (32% of the proposed project's 850 MW) so its impacts on the SCE grid would be proportionately less. The CEQA Level of Significance would not change from the levels described for the proposed project if the Reduced Acreage alternative were constructed.

The Avoidance of Donated and Acquired Lands Alternative power plant would produce 720 MW (85% of the proposed project's 850 MW) so its impacts on the SCE grid would be only slightly less. The CEQA Level of Significance would not change from the levels described for the proposed project if this alternative were constructed.

Under the three No Action/No Project Alternatives, the proposed project would not occur. However, the land on which the project is proposed could become available to other uses, including another renewable energy project, if the proposal is consistent with BLM's California Desert Conservation Area (CDCA) land use plan. This would occur under the No Action/No Project Alternative (2) which includes a CDCA Plan Amendment allowing for future renewable energy development on this project site.

## **Public Health and Safety**

Staff have analyzed potential public health and safety risks associated with construction and operation of the Calico Solar Project and do not expect any substantial adverse cancer or short- or long-term noncancerous health effects from project toxic emissions under CEQA. According to the results of staff's health risk assessment, emissions from the Calico Solar Project would not contribute substantially to morbidity or mortality in any age or ethnic group residing in the project area.

**Alternatives.** The Reduced Acreage Alternative would likely result in reduced emission which would decrease the cancer risk and chronic and acute health hazard indices predicted for the proposed project. However, the public health analysis has determined that these indices are far below the level of significance at the point of maximum impact for the project as proposed. Therefore, with respect to public health impacts, the Reduced Acreage Alternative is not preferable over the project as proposed. Similar to the proposed project, staff considers project compliance with LORS to be sufficient to ensure that no significant impacts would occur as a result of waste management associated with the Reduced Acreage Alternative.

The Avoidance of Donated and Acquired Lands Alternative would result in similar types of public health and safety issues from construction, demolition and operation as the proposed project. Staff has analyzed potential public health risks associated with

construction and operation of the Calico Solar Project and does not expect any significant adverse cancer or long-term health effects to any members of the public, including low income and minority populations, from project toxic emissions. The Avoidance Alternative would reduce the project by approximately 15%, but otherwise represent the same impacts. The results of staff's health risk assessment indicate that emissions from the Calico Solar Project would not contribute significantly or cumulatively to morbidity or mortality in any age or ethnic group residing in the project area. Similar to the proposed project, staff considers project compliance with LORS to be sufficient to ensure that no significant impacts would occur to public health and safety associated with the construction or operation of the Avoidance Alternative.

Under the three No Action/No Project Alternatives, the public health and safety impacts from the proposed project would not occur. However, the land on which the project is proposed could become available to other uses, including another renewable energy project, if the proposal is consistent with BLM's California Desert Conservation Area (CDCA) land use plan. This would occur under the No Action/No Project Alternative (2) which includes a CDCA Plan Amendment allowing for future renewable energy development on this project site.

### **Socioeconomics and Environmental Justice**

Staff conclude that the 850-megawatt Calico Solar Project would cause neither a significant adverse direct or indirect impact nor contribute to a cumulative socioeconomic impact on the area's housing, schools, parks and recreation, police, emergency medical services, or hospitals, since most of the project's construction and operation workforce currently resides in the regional or local labor market area. Gross public benefits from the project include capital costs, construction and operation payroll, and sales taxes.

**Alternatives.** The Reduced Acreage Alternative would eliminate approximately 67% of the proposed project area, would not require an upgraded transmission line, and would consist of fewer (11,000) SunCatchers than the proposed project (34,000). Accordingly, the Reduced Acreage Alternative would require less construction with the above mentioned infrastructure and operation of the solar facility. This would result in a smaller fiscal impact than the proposed project, with a reduced need for housing, schools, parks and recreation, law enforcement and emergency medical services. The Reduced Acreage Alternative would have a smaller impact than the proposed project on substantial population growth, impact housing supply, displace existing housing or substantial numbers of people or result in substantial physical impacts to government facilities. In addition, this alternative would have a smaller impact than the proposed project with respect to project cost, payroll, and local construction materials/supplies. Similar to the proposed project, this alternative would not a cause adverse significant socioeconomic impact from construction or operation. Similar to the proposed project, the Reduced Acreage Alternative would not require socioeconomic Conditions of Certification.

The 720-MW Avoidance of Donated and Acquired Lands Alternative would require installation of 28,000 SunCatchers. Accordingly, this alternative would require a smaller construction and operation workforce, which would require less housing, schools, parks and recreation, law enforcement and medical services. Reduced construction would result in smaller fiscal effects from construction and operation sales tax. Total project costs, payroll costs, and local construction materials/supplies would have a smaller non-

fiscal effect. Similar to the proposed project, the Avoidance of Donated and Acquired Lands Alternative would not cause an adverse significant impact from construction or operation. The benefits of the project to the local economy would be reduced because of the reduced acreage and construction requirements, the construction and operation staff would be decreased, and there would be fewer impacts to socioeconomic resources. Similar to the proposed project, the Avoidance of Donated and Acquired Lands Alternative would not require socioeconomic Conditions of Certification.

Under the three No Action/No Project Alternatives, the socioeconomic benefits from the proposed project would not occur. However, the land on which the project is proposed could become available to other uses, including another renewable energy project, if the proposal is consistent with BLM's California Desert Conservation Area (CDCA) land use plan. This would occur under the No Action/No Project Alternative (2) which includes a CDCA Plan Amendment allowing for future renewable energy development on this project site.

### **Traffic and Transportation**

With implementation of recommended Conditions of Certification, Calico Solar Project would be consistent with applicable LORS. As a result, it would not have a significant adverse impact on the local and regional roadway network. With implementation of recommended Conditions of Certifications, local roadway and highway demand resulting from daily movement of workers would not increase beyond significance thresholds established by San Bernardino County and the State of California. Presently open routes that traverse the project area would be closed if any of the Action Alternatives or CDCA Plan amendments are approved.

**Alternatives.** Implementation of the Reduced Acreage Alternative would not significantly affect the number of workers needed for the construction and operation of this project because it does not change the setting of the project or the necessity of the workers to travel on I-40. Workers required for this project is relatively small and even each worker traveling alone in one vehicle would not exceed acceptable levels of service on I-40. However, staff has proposed mitigation to encourage car-pooling or other methods of reducing traffic impacts. Similar to the proposed project, staff considers project compliance with LORS and staff's Conditions of Certification to be sufficient to ensure that no significant impacts would occur as a result of waste management associated with the Reduced Acreage Alternative.

The Avoidance of Donated and Acquired Lands Alternative would generate similar types of hazardous and non-hazardous wastes from construction, demolition and operation of the project. However, the quantities of waste would be reduced by 15%. The amount of non-hazardous and hazardous solid wastes generated under a 720-MW Alternative that would require landfill/treatment would be approximately 7,100 and 191 cubic yards, respectively. Similar to the proposed project, wastes requiring off-site disposal would be significantly less than the remaining capacity of off-site disposal facilities. Similar to the proposed project, staff will not require investigation and remediation of soil and groundwater contamination. Disposal methods would remain the same as for the proposed project and the same Conditions of Certification (**WASTE-1** through **-8**) would apply. Similar to the proposed project, staff considers project compliance with LORS and staff's Conditions of Certification to be sufficient to ensure that no significant

impacts would occur as a result of waste management associated with the 720-MW Alternative.

Under the three No Action/No Project Alternatives, the impacts to traffic and transportation from the proposed project would not occur. However, the land on which the project is proposed could become available to other uses, including another renewable energy project, if the proposal is consistent with BLM's CDCA Plan. This would occur under the No Action/No Project Alternative (2) which includes a CDCA Plan Amendment allowing for future renewable energy development on this project site.

### **Transmission Line Safety and Nuisance**

The applicant, Calico Solar, LLC, proposes to transmit the power from the two phases of the proposed Calico Solar Project (formerly the Stirling Energy Systems Solar One Project) to Southern California Edison's existing Pisgah Substation from which it would be delivered to the California Independent Operator-controlled power grid. Since the line would be operated within the Southern California Edison service area, it would be constructed, operated, and maintained according to Southern California Edison's guidelines for line safety and field management which conform to applicable laws, ordinances, regulations and standards. Also, the route would traverse undisturbed desert land with no nearby residents thereby eliminating the potential for residential electric and magnetic field exposures. With the proposed Conditions of Certification, any safety and nuisance impacts from construction and operation of the proposed line would be less than significant.

**Alternatives.** The Reduced Acreage Alternative would have fewer (11,000) SunCatchers than with the proposed alternative (34,000), but the system of aggregation and method of power transmission would be the same as the proposed project. Because the staff finds the safety and nuisance impacts of the proposed 850-MW project to be less than significant under CEQA, staff would expect the design's implementation for the 275-MW Reduced Acreage Alternative (as required by the Conditions of Certification) to result in impacts that would be less than significant as well.

The Avoidance of Donated and Acquired Lands Alternative would consist of 28,800 solar collectors occupying the entire footprint of the proposed project but avoiding use of any donated or acquired lands. Like the proposed project, the power from this alternative would be transmitted to the grid through the Pisgah Substation and would require infrastructure similar to that of the proposed 850 MW including water storage tanks, transmission line, and substation. Like the proposed project, this alternative would require the SCE Full Build-out Option upgrade, which would be constructed, operated, and maintained according to SCE's guidelines for line safety and field management which conform to applicable LORS and traverse undisturbed desert land with no nearby residents, eliminating the potential for residential electric and magnetic field exposures. With the Conditions of Certification recommended for the proposed project, any safety and nuisance impacts from the line for the Avoidance of Donated and Acquired Lands Alternative would be less than significant.

Under the three No Action/No Project Alternatives, the impacts pertaining to transmission line safety and nuisance from the proposed project would not occur. However, the land on which the project is proposed could become available to other uses, including another

renewable energy project, if the proposal is consistent with BLM's California Desert Conservation Area (CDCA) land use plan. This would occur under the No Action/No Project Alternative (2) which includes a CDCA Plan Amendment allowing for future renewable energy development on this project site.

### **Transmission System Engineering**

The proposed Calico Solar Project outlet lines and termination are acceptable and would comply with the NERC/WECC planning standards, California ISO reliability criteria, and all applicable LORS with implementation of the Conditions of Certification. The analysis of project transmission lines and equipment, both from the power plant up to the point of interconnection with the existing transmission network as well as upgrades beyond the interconnection that are attributable to the project have been evaluated by staff and are included in the environmental sections of this Staff Assessment/Draft Environmental Impact Statement.

Commission staff relies on the responsible interconnecting authority for analysis of impacts on the transmission grid, as well as for the identification and approval of new or modified facilities required downstream from a proposed interconnection for mitigation purposes. The proposed Calico Solar Project would connect to Southern California Edison's (SCE's) existing 230-kV transmission network and would require both analysis by SCE and the approval of the California Independent System Operator (California ISO).

**Alternatives.** The Reduced Acreage Alternative would require 11,000 SunCatchers to generate approximately 275 MW. This alternative was developed because it could be constructed without upgrading the existing SCE Lugo-Pisgah transmission line and Pisgah Substation. Therefore, the 275-MW Alternative would require fewer distribution facilities and a smaller substation to be built within the project site. Because this alternative would require fewer transformers, fewer collector distribution feeders and other electrical components, it would also result in fewer impacts to the environment and triggers less CEQA level analysis.

The Avoidance of Donated and Acquired Lands Alternative would consist of 28,800 SunCatchers with a net generating capacity of approximately 720 MW occupying the entire proposed project footprint except for the donated or acquired lands. Like the proposed project, this alternative would transmit power to the grid through the SCE Pisgah Substation and would require infrastructure similar to the entire proposed 850-MW project, including water storage tanks, transmission line, road access, main services complex, and substation. Additionally, like the proposed project, the Avoidance of Donated and Acquired Lands Alternative would require the 65-mile upgrade to the SCE Lugo-Pisgah transmission line. If the Avoidance of Donated and Acquired Lands Alternative were approved, other renewable projects may be developed on other sites in the in San Bernardino County, the Mojave Desert, or in adjacent states to fill the 130-MW gap not supplied by the proposed project as developers strive to provide renewable power that complies with utility requirements and State/Federal mandates.

Under the three No Action/No Project Alternatives, the proposed project would not occur. However, the land on which the project is proposed could become available to other uses, including another renewable energy project, if the proposal is consistent with BLM's California Desert Conservation Area (CDCA) land use plan. This would occur

under the No Action/No Project Alternative (2) which includes a CDCA Plan Amendment allowing for future renewable energy development on this project site.

### **Visual Resources**

Staff concludes that the proposed project would substantially degrade the existing visual character and quality of the site and its surroundings, including motorists on Interstate 40 and National Trails Highway/Route 66. With staff recommended Conditions of Certification, these impacts could be greatly reduced but would remain significant and unavoidable. The BLM is in the process of establishing visual resource management classifications for the proposed project and surrounding areas.

**Alternatives.** The Reduced Acreage Alternative is 31% of the size the proposed project with a south project boundary that is 1 mile from Interstate 40, and in most cases, nearly 2 miles south of the Cady Mountains WSA. These setbacks would eliminate the foreground impacts as seen from these two locations. Middle-ground impacts would also be reduced, as less of the landscape in the middle-ground would be occupied. Likewise, the increased setback of this alternative would eliminate the possibility of obstructing scenic views of the background mountains. Given the moderate level of existing scenic quality of the viewshed, although the level of overall viewer sensitivity of these viewpoints is considered to be moderately high, the moderate level of overall visual change and the greatly reduced level of nuisance glare of the Reduced Acreage Alternative could be considered acceptable, and less-than-significant.

The Avoidance of Donated and Acquired Lands Alternative avoids donated and acquired lands, altering the eastern boundary of the project area and reducing the number of solar dishes. However, with regard to visual setting and existing conditions, this alternative would be very similar to the proposed project. This is because the areas withdrawn by this alternative are remote from the highway and affect only a portion of the boundary with the Cady Mountains WSA. The solar arrays would occupy most of the same surface as in the proposed project. Accordingly, the visual impacts of Avoidance of Donated and Acquired Lands Alternative would not differ in a meaningful way from those described for the proposed project. The vast size of the site would be reduced, but not in a way that would be readily perceptible to most viewers, in particular those on the highways. Because there would be no readily perceptible reduction in visual impact, the CEQA level of significance would remain as described for the proposed project.

Under the three No Action/No Project Alternatives, the impacts to visual resources from the proposed project would not occur. However, the land on which the project is proposed could become available to other uses, including another renewable energy project, if the proposal is consistent with BLM's California Desert Conservation Area (CDCA) land use plan. This would occur under the No Action/No Project Alternative (2) which includes a CDCA Plan Amendment allowing for future renewable energy development on this project site.

### **Waste Management**

Staff concludes that management of the waste generated during construction and operation of the Calico Solar Project would not generate a significant impact under the CEQA. There is sufficient landfill capacity, and the project would be consistent with the

applicable waste management LORS if the measures proposed in the Application for Certification and staff's proposed Conditions of Certification are implemented.

**Alternatives.** The Reduced Acreage Alternative would generate similar types of hazardous and non-hazardous wastes from construction, demolition and operation of the project. However, the quantities of waste would be reduced by 66%. The amount of non-hazardous and hazardous solid wastes generated under a Reduced Acreage Alternative that would require landfill/treatment would be approximately 3,000 and 74 cubic yards, respectively. Similar to the proposed project, wastes requiring off-site disposal would be significantly less than the remaining capacity of off-site disposal facilities. Similar to the proposed project, staff would not require investigation and remediation of soil and groundwater contamination. Disposal methods would remain the same as for the proposed project and the same Conditions of Certification would apply. Similar to the proposed project, staff considers project compliance with LORS and Conditions of Certification to be sufficient to ensure that no significant impacts would occur as a result of waste management associated with the Reduced Acreage Alternative.

The Avoidance of Donated and Acquired Lands Alternative would generate similar types of hazardous and non-hazardous wastes from construction, demolition and operation of the project. However, the quantities of waste would be reduced by 15%. The amount of non-hazardous and hazardous solid wastes generated under a 720-MW Alternative that would require landfill/treatment would be approximately 7,100 and 191 cubic yards, respectively. Similar to the proposed project, wastes requiring off-site disposal would be significantly less than the remaining capacity of off-site disposal facilities. Similar to the proposed project, staff would not require investigation and remediation of soil and groundwater contamination. Disposal methods would remain the same as for the proposed project and the same Conditions of Certification would apply. Similar to the proposed project, staff considers project compliance with LORS and staff's Conditions of Certification to be sufficient to ensure that no significant impacts would occur as a result of waste management associated with the Avoidance of Donated and Acquired Lands Alternative.

Under the three No Action/No Project Alternatives, the waste management impacts from the proposed project would not occur. However, the land on which the project is proposed could become available to other uses, including another renewable energy project, if the proposal is consistent with BLM's California Desert Conservation Area (CDCA) land use plan. This would occur under the No Action/No Project Alternative (2) which includes a CDCA Plan Amendment allowing for future renewable energy development on this project site.

### **Worker Safety and Fire Protection**

Staff concludes that the proposed project would have a significant impact under CEQA on local fire protection services which are currently provided by the San Bernardino County Fire Department (SBCFD). If the Applicant for the proposed Calico Solar Project provides project construction safety and health and project operations and maintenance safety and health programs, as required by the Conditions of Certification, the project would incorporate sufficient measures to both ensure adequate levels of industrial safety and comply with applicable LORS. The Conditions of Certification would reduce these risks to less than significant. They also ensure that these programs, proposed by

the Applicant, would be reviewed by the appropriate agencies before they are implemented.

**Alternatives.** Since the proposed project impacts are found to be less than significant under CEQA with the incorporation of Conditions of Certification, the impacts of the Reduced Acreage Alternative would be smaller due to the smaller extent of construction disturbance and the fewer number of SunCatchers under this alternative. Like the proposed project, the construction and operation of the Reduced Acreage Alternative would be in compliance with all applicable LORS for both long-term and short-term project impacts in the area of worker safety and fire protection with adoption of the same proposed Conditions of Certification.

The types of construction and operational impacts of the Avoidance of Donated and Acquired Lands Alternative would be the same as those of the proposed project. The proposed project impacts are found to be less than significant under CEQA with the incorporation of Conditions of Certification, and impacts of this alternative would be smaller due to the smaller extent of construction disturbance and the smaller number of SunCatchers of the alternative. Like the proposed project, the construction and operation of the Avoidance of Donated and Acquired Lands Alternative would be in compliance with all applicable LORS for both long-term and short-term project impacts in the area of worker safety and fire protection with the adoption of the same proposed Conditions of Certification.

Under the three No Action/No Project Alternatives, the impacts pertaining to worker safety and fire protection from the proposed project would not occur. However, the land on which the project is proposed could become available to other uses, including another renewable energy project, if the proposal is consistent with BLM's California Desert Conservation Area (CDCA) land use plan. This would occur under the No Action/No Project Alternative (2) which includes a CDCA Plan Amendment allowing for future renewable energy development on this project site.

## **NOTEWORTHY PUBLIC BENEFITS**

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Staff has identified the following public benefits.

1) Greenhouse gas (GHG) related noteworthy public benefits include the construction and operation of renewable and low-GHG emitting generation technologies and the potential for successful integration into the California and greater WECC electricity systems. Additionally, the Calico Solar Project would contribute to meeting the state's Assembly Bill (AB) 32 goals.

2) The science of paleontology is advanced by the discovery, study and duration of new fossils. These fossils can be substantial if they represent a new species, verify a known species in a new location and/or if they include structures of similar specimens that had not previously been found preserved. In general, most fossil discoveries are the result of excavations, either purposeful in known or suspected fossil localities or as the result of excavations made during earthwork for civil improvements or mineral extraction. Proper monitoring of excavations at the proposed Calico Solar facility, in accordance with an approved Paleontological Monitoring and Mitigation Plan, could result in a benefit to the

science of paleontology and should minimize the potential to damage a substantial paleontological resource.

3) The proposed project would help in reducing greenhouse gas emissions from gas-fired generation. Both State and Federal law support the increased use of renewable energy and any resultant decreases in the use of riskier hazardous materials for power production at other facilities.

4) It is noteworthy that a solar electric generating facility such as the proposed Calico Solar Project would emit substantially less toxic air containment (TACs) to the environment than other energy sources available in California such as natural gas or biomass, thereby reducing the health risks that would otherwise occur with these non-renewable energy sources. At the same time, the proposed Calico Solar Project would provide much needed electrical power to California residences and businesses, and would contribute to electric reliability. Electrical power is not only necessary to maintain a functioning society, but it also benefits many individuals who rely on powered equipment for their health (such as dialysis equipment and temperature control equipment). For example, it is documented that during heat waves in which elevated air-conditioning use causes an electrical blackout, hospitalizations and deaths due to heat stroke are increased.

5) Noteworthy socioeconomic public benefits include the direct, indirect and induced impacts of a proposed power plant. Direct impacts include permanent jobs and wages. Indirect and induced economic impacts from construction and operations and maintenance would also result.

6) Staff believes that there would be some positive transmission system impacts from the proposed project because the Calico Solar Project would supplement local solar generation and import of power to the SCE system, helping to meet the increasing load demand in San Bernardino County.



# **INTRODUCTION**



# A – INTRODUCTION

Jim Stobaugh and Christopher Meyer

## INTRODUCTION

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The proposed action evaluated within this Staff Assessment (SA)/Draft Environmental Impact Statement (DEIS) is the construction and operation of the Calico Solar Project, a proposed solar thermal electricity generation facility located public lands managed by the Bureau of Land Management (BLM) in San Bernardino County, California. The SA/DEIS represents a joint environmental review document developed by the California Energy Commission (Energy Commission) and BLM to evaluate potential impacts associated with the proposed action.

When considering an energy project for licensing, the Energy Commission is the lead state agency for evaluating environmental impacts of a proposed licensing action under the California Environmental Quality Act (CEQA). The SA, the result of the Energy Commission staff's environmental evaluation process, is functionally equivalent to the preparation of an Environmental Impact Report (EIR).

Because the proposed project is located on public lands managed by the BLM, BLM is the lead federal agency for evaluating environmental impacts of the proposed right-of-way grant under the National Environmental Policy Act (NEPA). The DEIS is the BLM's environmental evaluation of the potential impacts that could result from the authorization of the requested right-of-way. The Department of Energy (DOE) and BLM signed an MOU to have the DOE as a cooperating agency on this project. The applicant has applied to the DOE for a loan guarantee under Title XVII of the Energy Policy Act of 2005 (EPA 05), as amended by Section 406 of the American Recovery and Reinvestment Act of 2009, P.L. 111-5 (the "Recovery Act"). Should DOE decide to enter into negotiation of a possible loan guarantee with the Applicant, DOE would become a cooperating agency in developing the final EIS. The purpose and need for action by DOE is to comply with its mandate under EPA 05 by selecting eligible projects that meet the goals of the Act.

In August 2007, the Energy Commission and BLM California Desert District (CDD) entered into a Memorandum of Understanding (MOU) to jointly develop the environmental analysis documentation for solar thermal projects which are under the jurisdiction of both agencies. The purpose of the MOU is to avoid duplication of staff efforts, share staff expertise and information, promote intergovernmental coordination, and facilitate public review. This document represents the Energy Commission's SA, as well as the BLM's DEIS. Following a 90-day public comment period, the BLM and Energy Commission staff will issue a Supplemental SA (SSA)/Final EIS (FEIS).

This SA/DEIS is a staff document. It is neither a document of the California Energy Commission Siting Committee, a draft decision by the Siting Committee, nor a decision document approving the right-of-way grant by BLM. The SA/DEIS describes and evaluates the following:

- the proposed project;
- the existing environment;

- whether the facilities can be constructed and operated safely and reliably in accordance with applicable laws, ordinances, regulations, and standards (LORS);
- the environmental consequences of the proposed project including potential public health and safety impacts;
- the potential cumulative impacts of the proposed project in conjunction with other existing and known planned developments;
- mitigation measures proposed by the applicant, staff, interested agencies, local organizations, and interveners which may lessen or avoid potential impacts;
- the proposed conditions under which the project should be constructed and operated, if it is certified (known as “conditions of certification”); and
- alternatives to the proposed project.

The analyses contained in this SA/DEIS are based upon information from the: 1) Application for Certification (AFC), 2) responses to data requests, 3) supplementary information from local, state, and federal agencies; interested organizations; and individuals, 4) existing documents and publications, 5) independent research, and 6) comments at workshops. The SA/DEIS presents conclusions about potential environmental impacts and conformity with LORS, as well as proposed conditions of certification/mitigation measures that apply to the design, construction, operation, and closure of the facility. Each proposed condition of certification/mitigation measure is followed by a proposed means of verification that the condition has been met.

## **BACKGROUND**

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Calico Solar, LLC’s business model includes the development and deployment of the Stirling solar dish systems (referred to as SunCatchers) technology. It has formed the limited liability corporation Calico Solar (referred to as applicant or Calico Solar, LLC hereafter) for the purposes of filing ROW applications with the BLM for the use of public land and for filing an AFC with the Energy Commission. Calico Solar, LLC has executed Power Purchase Agreements and interconnection agreements with Southern California Edison (SCE) to deliver renewable energy to the California market.

The applicant has applied for a ROW grant from the BLM to construct the Calico Solar Project that will occupy 8,230 acres of public land managed by the BLM, use approximately 32 acre feet of water per year, produce a nominal 850 MW of electricity, and operate for a term of 40 years. Calico Solar, LLC has also filed an AFC with the Energy Commission. Under California law, the Energy Commission has regulatory authority for certifying applications for thermal power generating facilities in excess of 50 MW in size.

Additionally, the applicant has applied to the DOE for a loan guarantee pursuant to Title XVII of the Energy Policy Act of 2005 (EPAAct). The application for a loan guarantee for the Calico Solar Project was filed with the DOE and is currently under review. The EPAAct established a Federal loan guarantee program for eligible energy projects that employ innovative technologies. Title XVII of EPAAct authorizes the Secretary of Energy to make loan guarantees for a variety of types of projects, including those that “avoid, reduce, or

sequester air pollutants or anthropogenic emissions of greenhouse gases, and employ new or significantly improved technologies as compared to commercial technologies in service in the U.S. at the time the guarantee is issued.” The two principal goals of the loan guarantee program are to encourage commercial use in the U.S. of new or significantly improved energy-related technologies and to achieve substantial environmental benefits. DOE can comply with the requirements under EAct by selecting eligible projects that meet the goals of the Act. DOE is using this NEPA process to assist in determining whether to issue a loan guarantee to Calico Solar, LLC to support the proposed project.

The proposed project could help meet the explicit policy goals of the State of California and the Federal goals of producing 10% of the nation’s electricity from renewable sources by 2012 and 25% by 2025. Authorities include:

- Executive order 13212, dated May 18, 2001, which mandates that agencies act expediently and in a manner consistent with applicable laws to increase the “production and transmission of energy in a safe and environmentally sound manner.”
- The EAct, which requires the Department of the Interior (BLM’s parent agency) to approve at least 10,000 MW of renewable energy on public lands by 2015.
- Secretarial Order 3285, dated March 11, 2009, which “establishes the development of renewable energy as a priority for the Department of the Interior.”

## **A.1 AGENCY AUTHORITIES AND RESPONSIBILITIES**

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The Energy Commission has the exclusive authority to certify the construction, modification, and operation of thermal electric power plants 50 MW or larger. The Energy Commission certification is in lieu of any permit required by state, regional, or local agencies and by federal agencies to the extent permitted by federal law (Pub. Resources Code, § 25500). The Energy Commission must review power plant AFCs to assess potential environmental impacts including potential impacts to public health and safety, and potential measures to mitigate those impacts (Pub. Resources Code, § 25519), and compliance with applicable governmental laws or standards (Pub. Resources Code, § 25523 (d)). The Energy Commission staff’s analyses were prepared in accordance with Public Resources Code, section 25500 et seq.; Title 20, California Code of Regulations, section 1701 et seq.; and CEQA (Pub. Resources Code, § 21000 et seq.).

The BLM’s authority for the proposed action includes Federal Land Policy and Management Act (FLPMA) of 1976 [43 United States Code (U.S.C.) 1701 et seq.], Section 211 of the EAct (119 Stat. 594, 600), and BLM’s Solar Energy Development Policy of April 4, 2007. The FLPMA authorizes BLM to issue right-of-way (ROW) grants for renewable energy projects. Section 211 of the EAct states that the Secretary of the Interior should seek to have approved a minimum of 10,000 MW of renewable energy generating capacity on public lands by 2015.

Title XVII of EAct authorizes the Secretary of Energy to make loan guarantees for eligible projects, including those that “avoid, reduce, or sequester air pollutants or anthropogenic emissions of greenhouse gases, and employ new or significantly improved technologies as compared to commercial technologies in service in the U.S. at the time the guarantee is issued.” Calico Solar, LLC has applied to the DOE for a loan guarantee pursuant to

Title XVII of the EPO Act. DOE is participating in the review of this NEPA document as a cooperating agency (40 CFR §1508.5) to ensure that analyses needed to support its decision-making on whether to provide a loan guarantee to Calico Solar, LLC are provided in the EIS.

## **A.2 PROJECT DESCRIPTION (CASE AND PROPERTY DESCRIPTION)**

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The proposed action is designated by BLM as ROW serial number CACA-049537 and CACA-049539.

The following sections or portions of sections in Townships 8 and 9 identify the project site and the planned boundary for development of the Calico Solar Project.

### **PHASE ONE**

Within Township 8 North, Range 5 East:

- the portion of the northeast quarter section of Section 11 north of the railroad ROW, and
- the portion of Section 12 north of the railroad ROW.

Within Township 8 North, Range 6 East:

- the portion of Section 7 north of the railroad ROW,
- the portion of Section 8 west of the SCE Transmission ROW,
- the portion of Section 9 west of the SCE Transmission ROW
- the portion of Section 17 west of the SCE Transmission ROW and north and south of the railroad ROW,
- the portion of Section 18 north of the railroad ROW,
- the southwest and southeast quarter sections of Section 6, and
- the southwest quarter of Section 5,

Within Township 9 North, Range 6 East:

- the northeast quarter and the portion of the northeast quarter-quarter section of the northwest section of Section 32, and
- the northwest quarter and the portion of the northwest and southwest quarter-quarter section of the northeast section of Section 33.

### **PHASE TWO**

Within Township 8 North, Range 5 East:

- eastern half of Section 2,

- the southwest, northeast, southeast quarter of Section 10,
- the portion of Section 14 north of the I-40 ROW,
- the portion of the northeast and northwest quarter sections and the northeast quarter-quarter sections of the southeast quarter section of Section 8 south of the railroad ROW and north of the I-40 ROW,
- the portion of Section 11 south of the railroad ROW,
- the portion of Section 12 south of the railroad ROW, and
- the portion of Section 15 north of the I-40 ROW.

Within Township 8 North, Range 6 East:

- the portion of Section 4 west of the SCE Transmission ROW,
- the northeast, northwest, southeast quarter sections of Section 5,
- the northwest and northeast quarter sections of Section 6,
- the portion of Section 7 south of the railroad ROW, and
- the portions of Section 18 west of the SCE Transmission ROW, south of the railroad ROW and north of the I-40 ROW.

Within Township 9 North, Range 5 East:

- the eastern half of Section 35.

Within Township 9 North, Range 6 East:

- all of Section 31,
- the southwest and southeast quarters and the portion of the southwest quarter-quarter sections of the northwest quarter of Section 32, and
- the southwest quarter and the portion of the northwest and southwest quarter-quarter sections of the southeast quarter of Section 33.

### **A.3 LAND USE PLAN CONFORMANCE AND AMENDMENT**

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The principal land use plan affecting this proposed project is the U.S. Bureau of Land Management’s California Desert Conservation Area (CDCA) Plan of 1980, as amended. In the CDCA Plan, the location of the proposed Calico Solar facility includes land that is classified as Multiple-Use Class L (Limited Use). The Plan states that solar power facilities may be allowed within Limited Use areas after NEPA requirements are met. This DEIS acts as the mechanism for complying with those NEPA requirements.

Because solar power facilities are an allowable use of the land as it is classified in the CDCA Plan, the proposed action does not conflict with the Plan. However, Chapter 3, “Energy Production and Utility Corridors Element” of the Plan also requires that newly proposed power facilities that are not already identified in the Plan be considered through the Plan Amendment process. The proposed Calico Solar facility is not currently

identified within the Plan, and therefore a Plan Amendment is required to include the facility as a recognized element within the Plan.

### **Planning Criteria (BLM)**

The CDCA Plan planning criteria are the constraints and ground rules that guide and direct the development of the Plan Amendment. They ensure that the Plan Amendment is tailored to the identified issues and ensure that unnecessary data collection and analyses are avoided. They focus on the decisions to be made in the Plan Amendment, and will achieve the following:

“Sites associated with power generation or transmission not identified in the Plan will be considered through the Plan Amendment process.”

Because the proposed facility is not currently identified within the CDCA Plan, an amendment to identify the proposed facility within the Plan is hereby proposed. As specified in Chapter 7, Plan Amendment Process, there are three categories of Plan Amendments, including:

- Category 1, for proposed changes that will not result in significant environmental impact or analysis through an EIS;
- Category 2, for proposed changes that would require a significant change in the location or extent of a multiple-use class designation; and
- Category 3, to accommodate a request for a specific use or activity that will require analysis beyond the Plan Amendment Decision.

Based on these criteria, approval of the proposed project would require a Category 3 amendment. This section summarizes the procedures necessary to evaluate the proposed Plan Amendment, as well as the procedures required to perform the environmental review of the ROW application.

***Statement of Plan Amendment.*** The Implementation section of the Energy Production and Utility Corridors Element of the CDCA Plan lists a number of Category 3 amendments that have been approved since adoption of the Plan in 1980. An additional amendment is proposed to be added to this section of the Plan, and would read “Permission granted to construct solar energy facility (proposed Calico Solar Project).”

***Plan Amendment Process.*** The Plan Amendment process is outlined in Chapter 7 of the Plan. In analyzing an applicant’s request for amending or changing the Plan, the BLM District Manager, Desert District, will:

1. Determine if the request has been properly submitted and if any law or regulation prohibits granting the requested amendment.
2. Determine if alternative locations within the CDCA are available which would meet the applicant’s needs without requiring a change in the Plan’s classification, or an amendment to any Plan element.
3. Determine the environmental effects of granting and/or implementing the applicant’s request.

4. Consider the economic and social impacts of granting and/or implementing the applicant's request.
5. Provide opportunities for and consideration of public comment on the proposed amendment, including input from the public and from federal, State, and local government agencies.
6. Evaluate the effect of the proposed amendment on BLM management's desert-wide obligation to achieve and maintain a balance between resource use and resource protection.

**Decision Criteria for Evaluation of Proposed Plan Amendment.** The Decision Criteria to be used for approval or disapproval of the proposed amendment require that the following determinations be made by the BLM Desert District Manager:

1. The proposed amendment is in accordance with applicable laws and regulations;
2. The proposed amendment will provide for the immediate and future management, use, development, and protection of the public lands within the CDCA.

The BLM Desert District Manager will base the rationale for these determinations on the principles of multiple uses, sustained yield, and maintenance of environmental quality as required in FLPMA.

**Decision Criteria for Evaluation of Application.** In addition to defining the required analyses and Decision Criteria for Plan Amendments, the Plan also defines the Decision Criteria to be used to evaluate future applications in the Energy Production and Utility Corridors Element of Chapter 3. These Decision Criteria include:

1. Minimize the number of separate rights-of-way by utilizing existing rights-of-way as a basis for planning corridors;
2. Encourage joint-use of corridors for transmission lines, canals, pipelines, and cables;
3. Provide alternative corridors to be considered during processing of applications;
4. Avoid sensitive resources wherever possible;
5. Conform to local plans whenever possible;
6. Consider wilderness values and be consistent with final wilderness recommendations;
7. Complete the delivery systems network;
8. Consider ongoing projects for which decisions have been made; and
9. Consider corridor networks which take into account power needs and alternative fuel resources.

**Factors to be Considered.** The Plan also states that, in the evaluation of proposed power plants, BLM will use the same factors affecting the public lands and their resources as those used by the Energy Commission. These factors are the environmental information requirements defined in the California Code of Regulations (CCR) Title 20, Appendix B, and include:

- General (Project Overview)
- Cultural Resources
- Land Use
- Noise
- Traffic and Transportation
- Visual Resources
- Socioeconomics
- Air Quality
- Public Health
- Hazardous Materials Handling
- Worker Safety
- Waste Management
- Biological Resources
- Water Resources
- Soils
- Paleontological Resources
- Geological Hazards and Resources
- Transmission System Safety and Nuisance
- Facility Design
- Transmission System Design
- Reliability
- Efficiency

The specific determinations required for the Plan Amendment evaluation are discussed in detail below. This DEIS acts as the mechanism for evaluating both the proposed project application, and the proposed Plan Amendment. The factors specified in CCR Title 20, Appendix B are included within the scope of the analysis presented in the DEIS.

### **Results of CDCA Plan Amendment (BLM)**

#### **Required Determinations**

1. Determine if the request has been properly submitted and if any law or regulation prohibits granting the requested amendment.

The applicant's request for a ROW was properly submitted, and this DEIS acts as the mechanism for evaluating and disclosing environmental impacts associated with that applications. No law or regulation prohibits granting the amendment.

2. Determine if alternative locations within the CDCA are available which would meet the applicant's needs without requiring a change in the Plan's classification, or an amendment to any Plan element.

The CDCA Plan does not currently identify any sites as solar generating facilities. Therefore, there is no other location within the CDCA which could serve as an alternative location without requiring a Plan Amendment. The proposed project does not require a change in the Multiple-Use Class classification for any area within the CDCA.

3. Determine the environmental effects of granting and/or implementing the applicant's request.

This DEIS acts as the mechanism for evaluating the environmental effects of granting the ROW and the Plan Amendment.

4. Consider the economic and social impacts of granting and/or implementing the applicant's request.

This DEIS acts as the mechanism for evaluating the economic and social impacts of granting the ROW and the Plan Amendment.

5. Provide opportunities for and consideration of public comment on the proposed amendment, including input from the public and from federal, State, and local government agencies.

A Notice of Intent (NOI) to amend the CDCA Plan was published in the Federal Register October 17, 2008, Vol. 73, No. 202 Fed. Reg. 61902-61903. The U.S. Environmental Protection Agency provided comments during the 30-day NOI scoping period. In accordance with the NOI, issues identified during the scoping period are placed in the comment categories below.

6. Issues to be resolved in the plan amendment:

Several comments were received with concerns over the loss of open space and recreational lands if the plan was amended to allow industrial use. This comment is being resolved through this Plan Amendment.

7. Issues to be resolved through policy or administrative action:

All other comments received addressed specific environmental impacts and mitigation measures that each commenter requested be analyzed in the SA/DEIS. These comments are being resolved by being considered within this DEIS.

8. Issues beyond the scope of this plan amendment:

No comments were received which were outside of the scope of this Plan Amendment.

9. Evaluate the effect of the proposed amendment on BLM management's desert-wide obligation to achieve and maintain a balance between resource use and resource protection.

The balance between resource use and resource protection is evaluated within the DEIS. Title VI of the FLPMA, under CDCA, provides for the immediate and future protection and administration of the public lands in the California desert within the framework of a program of multiple use and sustained yield, and maintenance of environmental quality. Multiple use includes the use of renewable energy resources, and through Title V of FLPMA, the BLM is authorized to grant ROWs for generation and transmission of electric energy. The acceptability of use of public lands within the CDCA for this purpose is recognized through the Plan's approval of solar generating facilities within Multiple-Use Class L. The purpose of the DEIS is to identify resources which may be adversely impacted by approval of the proposed project, evaluate alternative actions which may accomplish the purpose and need with a lesser degree of resource impacts, and identify mitigation measures and Best Management Practices (BMPs) which, when implemented, would reduce the extent and magnitude of the impacts and provide a greater degree of resource protection.

## **Conformance of ROW Application with Decision Criteria (BLM)**

1. Minimize the number of separate ROWs by utilizing existing ROWs as a basis for planning corridors:

The proposed project assists in minimizing the number of separate ROWs by being proposed largely within existing Corridor N. Electrical transmission associated with the proposed project will occur within these existing corridors, and placement of the facility adjacent to these corridors minimizes the length of new corridors necessary for transmission of natural gas to the site.

2. Encourage joint-use of corridors for transmission lines, canals, pipelines, and cables:

Placement of the proposed project within existing Corridor N maximizes the joint-use of this corridor for natural gas and electrical transmission.

3. Provide alternative corridors to be considered during processing of applications:

This decision criterion is not applicable to the proposed project. Placement of the proposed facility adjacent to existing corridors does not require designation of alternative corridors to support the proposed project.

4. Avoid sensitive resources wherever possible:

The extent to which the proposed project has been located and designed to avoid sensitive resources is addressed throughout the DEIS. BLM and other Federal regulations that restrict the placement of proposed facilities, such as the presence of designated Wilderness Areas or Desert Wildlife Management Areas were considerations in the original siting process used by the applicant to identify potential project locations. The project location and configurations of the boundaries were modified in consideration of mineral resources. The alternatives analysis considered whether the purpose and need of the proposed project could be achieved in another location, but with a lesser effect on sensitive resources.

5. Conform to local plans whenever possible:

The extent to which the proposed project conforms to local plans is addressed within the Land Use section of the DEIS. The proposed project is in conformance with the Imperial County General Plan.

6. Consider wilderness values and be consistent with final wilderness recommendations:

The proposed project is not located within a designated Wilderness Area or Wilderness Study Area.

7. Complete the delivery systems network:

This decision criterion is not applicable to the proposed project.

8. Consider ongoing projects for which decisions have been made:

This decision criterion is not applicable to the proposed project. Approval of the proposed project would not affect any other projects for which decisions have been made.

9. Consider corridor networks which take into account power needs and alternative fuel resources:

This decision criterion is not applicable to the proposed project. The proposed project does not involve the consideration of an addition to or modification of the corridor network. However, it does utilize facilities located within Corridor N, which were designed with consideration of both power needs and locations of alternative fuel resources.

## **A.4 PROJECT OBJECTIVES (CEQA)**

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### **APPLICANT OBJECTIVES**

The applicant's project objectives are set forth below. The fundamental objective is to build a solar project that generates 850 MW of renewable solar energy that will help the State meet its Renewable Portfolio Standard (RPS) goals for new renewable electric generation. To assist in meeting the requirement for additional generating capacity, the applicant has developed solar technology which requires commercial-scale development to demonstrate its technical and commercial viability, and has entered into power purchase agreements to provide power from renewable sources into the California Independent System Operator (CAISO) system.

- Provide up to 850 MW of renewable electric capacity under a PPA to SCE,
- Contribute to the 20% renewables RPS target set by California's governor and legislature,
- Assist in reducing greenhouse gas emissions from the electricity sector,
- contribute to California's future electric power needs, and
- Assist the CAISO in meeting its strategic goals for the integration of renewable resources, as listed in its Five-Year Strategic Plan for 2008-2012 (CAISO 2007).

### **CEQA OBJECTIVES**

#### **State Objectives**

Senate Bill 1078, passed on 2002, established the California RPS, which requires utilities to increase their sale of electricity produced by renewable energy sources, including solar facilities, by a minimum of 1% per year with a goal of 20% of their total sales by 2017. However, the California Public Utilities Commission (CPUC), Energy Commission, and the California Power Authority adopted the Energy Action Plan (EAP), which pledged that the agencies would meet an accelerated goal of 20% by the year 2010. As a result, the California Senate passed Senate Bill 107 to be consistent with the EAP, and accelerated the implementation of RPS, requiring utilities to meet the goal of 20% renewable energy generation by 2010. In November 2008, California's Governor instituted Executive Order S-14-08 which establishes an updated RPS goal that all retail sellers

of electricity shall serve 33% of their load with renewable energy by 2020. The project would allow California utilities to increase the percentage of renewable resources in their energy portfolio, and aid the utilities in reaching the goals set forth by the RPS.

CEQA guidelines require a clearly written statement of objectives to guide the lead agency in developing a reasonable range of alternatives and aid decision-makers in preparing findings or a statement of overriding considerations. CEQA specifies that the statement of objectives should include the underlying purpose of the project (Section

15126.6(a)). These objectives reflect the applicant's objectives and the BLM's stated purpose and need of the project and will be considered in the comparison of alternatives, as required under both NEPA and CEQA. The Energy Commission developed the following objectives for the project:

1. to safely and economically construct and operate an up to 750 MW, renewable power generating facility in California capable of selling competitively priced renewable energy consistent with the needs of California utilities;
2. to locate the facility in areas of high solar irradiance with ground slope of less than 5%;
3. to complete the impact analysis of the project so that if approved, construction could be authorized in 2010 and beyond.

## **A.5 PURPOSE AND NEED (NEPA)**

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### **BLM PURPOSE AND NEED**

NEPA guidance published by the Council on Environmental Quality (CEQ) states that environmental impact statements' Purpose and Need section "shall briefly specify the underlying purpose and need to which the agency is responding in proposing the alternatives including the proposed action" (40 CFR §1502.13). The following discussion sets forth the purpose of, and need for, the project as required under NEPA.

The BLM's purpose and need for the Calico Solar Project is to respond to Calico Solar, LLC's application under Title V of FLPMA (43 U.S.C. 1761) for a ROW grant to construct, operate, and decommission a solar thermal facility on public lands in compliance with FLPMA, BLM ROW regulations, and other Federal applicable laws. The BLM will decide whether to approve, approve with modification, or deny issuance of a ROW grant to Calico Solar, LLC for the proposed Calico Solar Project. The BLM's actions will also include consideration of amending the CDCA Plan concurrently. The CDCA Plan (1980, as amended), while recognizing the potential compatibility of solar generation facilities on public lands, requires that all sites associated with power generation or transmission not identified in that plan be considered through the plan amendment process. If the BLM decides to approve the issuance of a ROW grant, the BLM will also amend the CDCA Plan as required.

In conjunction with FLPMA, BLM authorities include:

- Executive order 13212, dated May 18, 2001, which mandates that agencies act expediently and in a manner consistent with applicable laws to increase the "production and transmission of energy in a safe and environmentally sound manner."

- The EPO Act, which requires the Department of the Interior (BLM's parent agency) to approve at least 10,000 MW of renewable energy on public lands by 2015.
- Secretarial Order 3285, dated March 11, 2009, which "establishes the development of renewable energy as a priority for the Department of the Interior."

## DOE PURPOSE AND NEED

The EPO Act of 2005 established a Federal loan guarantee program for eligible energy projects that employ innovative technologies. Title XVII of the EPO Act authorizes the Secretary of Energy to make loan guarantees for a variety of types of projects, including those that "avoid, reduce, or sequester air pollutants or anthropogenic emissions of greenhouse gases, and employ new or significantly improved technologies as compared to commercial technologies in service in the U.S. at the time the guarantee is issued."

The two purposes of the loan guarantee program are to encourage commercial use in the U.S. of new or significantly improved energy-related technologies and to achieve substantial environmental benefits. The purpose and need for action by DOE is to comply with its mandate under EPO Act by selecting eligible projects that meet the goals of the Act.

## USACE PURPOSE AND NEED

The USACE uses two purpose and need statements to identify and analyze a reasonable range of alternatives under Section 404(b)(1). These include the basic project purpose and the overall project purpose.

The basic project purpose is used to determine whether a proposed project is water dependent (i.e., whether it requires a location that affects waters of the U.S.). The basic project purpose comprises the fundamental, essential, or irreducible purpose of the Preferred Action Alternative, and is used by the USACE to determine whether the applicant's project is water dependent.

The *basic project purpose* for the Preferred Plan Alternative is: "**Energy Production.**"

The basic project purpose is not water dependent but will affect waters of the U.S. in the form of ephemeral streams and therefore, the applicant has the burden of rebutting the presumption that there is a less damaging alternative for the proposed activity that would not affect waters of the U.S. {§40 CFR 230.10(a)(3.)}.

The *overall project purpose* is the basic project purpose with consideration of costs and technical and logistical feasibility.

The overall project purpose is "**To provide a renewable energy facility in Southern California.**"

## **A.6 PROJECT EVALUATION AND DECISION PROCESS**

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### **Energy Commission Process**

The Energy Commission's siting regulations require staff to independently review the AFC and assess whether the list of environmental impacts contained is complete and whether additional or more effective mitigation measures are necessary, feasible, and available (Cal. Code Regs., tit. 20, §§ 1742 and 1742.5(a)).

In addition, staff must assess the completeness and adequacy of the measures proposed by the applicant to ensure compliance with health and safety standards and the reliability of power plant operations (Cal. Code Regs., tit. 20, § 1743(b)). Staff is required to develop a compliance plan (coordinated with other agencies) to ensure that applicable laws, ordinances, regulations, and standards are met (Cal. Code Regs., tit. 20, § 1744(b)).

Staff conducts its environmental analysis in accordance with the requirements of the CEQA. No additional EIR is required because the Energy Commission's site certification program has been certified by the California Resources Agency as meeting all requirements of a certified regulatory program (Pub. Resources Code, § 21080.5 and Cal. Code Regs., tit. 14, § 15251 (j)).

Staff's impact assessment, including the recommended conditions of certification, is only one piece of evidence that the Siting Committee will consider in reaching a decision on the proposed project and making its recommendation to the full Energy Commission. At the public hearings, all parties will be afforded an opportunity to present evidence and to rebut the testimony of other parties, thereby creating a hearing record on which a decision on the project can be based. The hearing before the Siting Committee also allows all parties to argue their positions on disputed matters, if any, and it provides a forum for the Committee to receive comments from the public and other governmental agencies.

Following the hearings, the Siting Committee's recommendation to the full Energy Commission on whether or not to approve the proposed project will be contained in a document entitled the Presiding Members' Proposed Decision (PMPD). Following its publication, the PMPD is circulated in order to receive written public comments. At the conclusion of the comment period, the Siting Committee may prepare a revised PMPD. At the close of the comment period for the revised PMPD, the PMPD is submitted to the full Energy Commission for a decision.

### **BLM Process**

The DEIS is available for a 90-day public comment period. Following completion of that period, BLM will review and develop responses to comments provided by the public and other agencies. The responses to the comments, and other information identified during this period, will be incorporated into a FEIS, which will make a recommendation regarding the preferred alternative. A Notice of Availability (NOA) of the FEIS will be published when the FEIS becomes available for public review. The FEIS will be available for public review for a minimum of 30-days before the BLM issues a Record of Decision (ROD). The decision regarding the ROW grant is in full force and effect; however, it is appealable to the Interior Board of Land Appeals upon issuance of the ROD. The FEIS will also

contain a proposed decision to amend the BLM Plan. Proposed plan amendment decisions may be protested within 30-days of the proposed decision. BLM cannot make a final decision regarding issuance of a ROW grant or amending the Plan until any Plan protest is resolved.

Under the NEPA process, the significance of the impacts is developed based on the definition of “significantly” provided in NEPA regulations Section 1508.27. This evaluation includes both the context of the action with respect to the affected resources, as well as the intensity of the effect on those resources. The following are considered in evaluating the intensity:

- Whether the impact is beneficial or adverse;
- The degree to which the proposed action affects public health or safety;
- Unique characteristics of the geographic area, including parks, farmlands, wetlands, wild and scenic rivers, or ecologically critical areas;
- The degree to which the effects are likely to be highly controversial;
- The degree to which the effects are highly uncertain or involve unique or unknown risks;
- The degree to which the action may establish a precedent for future actions;
- Whether the action may be individually insignificant, but cumulatively significant when combined with other actions;
- The degree to which the action may adversely affect significant scientific, cultural, or historical resources;
- The degree to which the action may adversely affect an endangered or threatened species or its habitat; and
- Whether the action threatens a violation of federal, State, or local law or requirements imposed for the protection of the environment.

As outlined in NEPA regulations Section 1502.16, the analysis also includes a discussion of both direct and indirect effects and their significance, adverse environmental effects which cannot be avoided, whether impacts are short-term or long-term, and any irreversible or irretrievable commitments of resources.

The decisions to be made by the agencies (licensing by the Energy Commission, and ROW grant by BLM) are independent of each other.

### **DOE Process**

When the FEIS is completed and made available to the public by BLM, DOE will carry out an independent review to ensure that DOE comments have been addressed and that the proposed action is substantially the same as the action described in the EIS. If these conditions are met, DOE will adopt the FEIS without having to recirculate it pursuant to CEQ NEPA regulations at 40 CFR 1506.3(c).

While the FEIS is being developed, DOE will also be carrying out a detailed technical and legal evaluation of the proposed project pursuant to its procedures for loan

guarantees set out at 10 CFR Part 609. DOE may reach agreement on a conditional commitment for a loan guarantee prior to completion of the FEIS and the BLM ROW grant; however, in this case a condition precedent will be included in the conditional commitment requiring that the NEPA review and the BLM ROW grant process be completed before DOE closes the loan guarantee transaction.

Following conclusion of the NEPA process and the BLM decision on issuance of the ROW grant, DOE will issue a Record of Decision (ROD) and proceed to close the loan guarantee transaction provided that the applicant has satisfied all the detailed terms and conditions contained in the conditional commitment and other related documents, and all other contractual, statutory, and regulatory requirements.

## **A.7 AGENCY AND PUBLIC COORDINATION**

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As noted previously, the Energy Commission certification is in lieu of any permit required by state, regional, or local agencies and by federal agencies to the extent permitted by federal law (Pub. Resources Code, § 25500). However, both the Energy Commission and BLM typically seek comments from and work closely with other regulatory agencies that administer LORS that may be applicable to the proposed project. The following paragraphs describe the agency coordination that has occurred through this joint SA/EIS process.

### **U.S. Fish and Wildlife Service**

The U.S. Fish and Wildlife Service (USFWS) has jurisdiction to protect threatened and endangered species under the Endangered Species Act (ESA). Formal consultation with the USFWS under Section 7 of the ESA is required for any federal action that may adversely affect a federally-listed species. The desert tortoise, federally listed as threatened, occurs on the project site, and formal consultation has been initiated by the BLM through the preparation and submittal of a Biological Assessment (BA) which describes the proposed project to the USFWS. Following review of the BA, the USFWS is expected to issue a Biological Opinion (BO) for the desert tortoise, which will specify mitigation measures which must be implemented for the protection of the species.

The USFWS is the primary federal authority charged with the management of migratory birds in the United States, including golden eagles. A permit for take of golden eagles, including take from disturbance such as loss of foraging habitat, may be required for this project. USFWS guidance on the applicability of current Eagle Act statutes and mitigation is currently under review. On November 10, 2009 the U.S. Fish and Wildlife Service (USFWS) implemented new rules (74 FR 46835) governing the “take” of golden and bald eagles. The new rules were released under the existing Bald and Golden Eagle Act which has been the primary regulation protection unlisted eagle populations since 1940. All activities that may disturb or incidentally take an eagle or its nest as a result of an otherwise legal activity must be permitted by the USFWS under this act. Staff is awaiting guidance from USFWS on this subject as to whether an Eagle Act permit would be required for this and other renewable energy projects. If a permit is required, due to the current uncertainty on the status of golden eagle populations in western United States, it is expected permits would only be issued for safety

emergencies or if conservation measures implemented in accordance with a permit would result in a reduction of ongoing take or a net take of zero (USFWS, 2009a).

### **State Water Resources Control Board/Regional Water Quality Control Board**

The Lahontan Regional Water Quality Control Board (RWQCB) has the authority to protect both surface water and groundwater resources at the proposed project location. Throughout the SA/DEIS process, the Energy Commission, BLM, and the applicant have invited the RWQCB to participate in public scoping and workshops, and have provided information to assist the agency in evaluating the potential impacts and permitting requirements of the proposed project. Staff has specified conditions to satisfy anticipated requirements of dredge and fill permit/waste discharge requirements. Staff will work with the RWQCB during the comment period to address any necessary changes to the requirements. These requirements will be included as a recommended Condition of Certification/Mitigation Measure.

### **California Department of Fish and Game**

The California Department of Fish and Game (CDFG) have the authority to protect water resources of the state through regulation of modifications to streambeds, under Section 1602 of the Fish and Game Code. The Energy Commission, BLM, and the applicant have provided information to CDFG to assist in their determination of the impacts to streambeds, and identification of permit and mitigation requirements. The applicant has submitted a preliminary draft jurisdictional delineation identifying the State jurisdictional waters on the project site. Staff concurs with the delineation, and it is expected that the applicant will submit a formal application to the CDFG that contains Best Management Practices designed to minimize the potential effects to State waters. Staff has proposed a Condition of Certification/Mitigation Measure that contains recommendations and guidance consistent with CDFG Streambed Alteration Agreement requirements. This condition fulfills requirements of CDFG's Lake and Streambed Alteration Agreement program pursuant to Fish and Game Code Section 1600 et seq.

The CDFG also has jurisdiction to protect species listed as threatened or endangered under the California Endangered Species Act of 1984 (CESA). An Incidental Take Permit is required for any action that may adversely impact a State-listed species. The only State-listed species that occurs onsite is the desert tortoise, listed as threatened under the CESA. The Energy Commission, BLM, and the applicant have consulted with CDFG regarding impacts and appropriate mitigation for the desert tortoise, and staff has proposed Conditions of Certification/Mitigation Measures that contain recommendations and guidance consistent with a CDFG Incidental Take Permit.

### **Tribal Relationships**

The BLM has notified affected Indian Tribes regarding the proposed project, has sought their comments, and has invited them to consult on the project on a government-to-government basis. The affected Indian Tribes are currently working with the BLM, Energy Commission, and the State Historic Preservation Officer's office on the development of the Programmatic Agreement.

## **Public Coordination**

Both the Energy Commission's CEQA-equivalent process and the BLM's NEPA process provide opportunities for public participation in the scoping of the environmental analysis, and in the evaluation of the technical analyses and conclusions of that analysis. For the Energy Commission, this outreach program is primarily facilitated by the Public Adviser's Office (PAO). As part of the coordination of the environmental review process required under the Energy Commission/BLM California Desert District MOU, the agencies have jointly held public meetings and workshops which accomplish the public coordination objectives of both agencies. This is an ongoing process that to date has involved the following efforts:

## **Libraries**

The AFC was sent to the county libraries in Barstow, Vacaville, Needles, Fresno, and Eureka; the main branches of the San Diego and San Francisco public libraries; the University Research Library at UCLA; the California State Library; and the Energy Commission's library in Sacramento.

## **Outreach Efforts**

The PAO's public outreach is an integral part of the Energy Commission's AFC review process. The PAO reviewed information provided by the applicant and also conducted its own outreach efforts to identify and locate local elected and certain appointed officials, as well as "sensitive receptors" (including schools, community, cultural and health facilities, and daycare and senior-care centers, as well as environmental and ethnic organizations). There were not any sensitive receptors identified within a 6-mile radius of the proposed site for the project.

Notices for workshops and hearings have been and will continue to be distributed to those agencies, individuals, and businesses that are currently on or request to be placed on the project's mailing list. Notices were distributed for the Informational Hearing and Site Visit, which was conducted on June 22, 2009, in Barstow, California.

Coincident with the PAO's outreach efforts, BLM solicited interested members of the public and agencies through the NEPA scoping process. BLM published a NOI to develop the EIS and amend the CDCA Plan in the Federal Register, Vol. 74, No. 108 Fed. Reg. 27176-27177, dated June 8, 2009. The Energy Commission's June 22, 2009 Informational Hearing also acted as the Public Scoping meetings for the EIS, as required by NEPA.

Throughout the process, the Energy Commission and BLM have held additional joint Issue Resolution, alternatives identification, and data response workshops which were announced and made available to the public. These workshops were held on September 16, 2009 in Barstow, California, and on December 22, 2009 in Sacramento, California. The Energy Commission has also continued to accept and consider public comments, and has issued orders granting petitions to intervene to the California Unions for Reliable Energy.

Those agencies and individuals that have provided comments concerning the project have been considered in staff's analysis. This SA/DEIS provides agencies and the

public with an opportunity to review the Energy Commission staff's analysis of the proposed project. Comments received on this SA/DEIS will be taken into consideration in preparing the subsequent project documents, including the Supplemental SA/FEIS.

Energy Commission regulations require staff to notice, at a minimum, property owners within 1,000 feet of a project and 500 feet of a linear facility under its jurisdiction. This was done for the Calico Solar Project. Staff's ongoing public and agency coordination activities for this project are discussed under the Public and Agency Coordination heading in the **EXECUTIVE SUMMARY**.

The AFC, this SA/DEIS, and other project documents are located on the Energy Commission's website at <http://www.energy.ca.gov/sitingcases/calicosolar/index.html>.

### **Summary of Public and Agency Comments**

The BLM and Energy Commission processes include soliciting comments regarding the scope of the analysis from other government agencies, the public and non-governmental organizations. The persons and organizations which provided scoping comments, and the general issues addressed within their comments, are provided in **Introduction Table 1** below.

**Introduction Table 1**  
**Summary of Written Comments Received by the Energy Commission**

Name and Agency of Commenter (and Date of Comment)	Comment Number	Summary of Comments by Environmental Parameter or Topic	Where the Comments will be Addressed in the Environmental Document
<b>Comment Letters From Public Agencies</b>			
United States Environmental Protection Agency (EPA) (letter dated 7/7/2009)	EPA-1	EPA supports the use of renewable energy resources.	See Note 1
	EPA-2	Purpose and Need: Provide a clear and objective statement of the project's purpose and need.	Purpose and Need
	EPA-3	Alternatives: Provide a robust range of alternatives; explain why some alternatives were eliminated; look at alternative sites, capacities, technologies.	Alternatives
	EPA-4	Water Resources: Estimate the quantity of water required, the source, and the potential effects on other water users and natural resources in the area of influence.	Hydrology, Water Use, and Water Quality
	EPA-5	Groundwater: Direct, indirect, and cumulative effects on groundwater.	Hydrology, Water Use, and Water Quality
	EPA-6	Water Quality: Potential effects of project discharges on surface water quality	Hydrology, Water Use, and Water Quality
	EPA-7	Water Quality: Potential need for a Section 404 permit.	Hydrology, Water Use, and Water Quality
	EPA-8	Water Quality: Discuss any Section 303(d) impaired waters in the project area.	Hydrology, Water Use, and Water Quality
	EPA-9	Biological Resources: Address threatened and endangered species in detail, including baseline conditions; how avoidance, minimization, and mitigation measures will protect species, and long-term management and monitoring efforts	Biological Resources and Areas of Critical Environmental Concern
	EPA-10	Invasive species: Address potential for project to introduce invasive species; how they will be controlled; development of an invasive species management plan; and restoration, as appropriate, of native species.	Biological Resources
	EPA-11	Indirect and Cumulative Impacts: Identify the resources that may be cumulatively impacted and the geographic area that will be impacted by the project; look at past impacts on resources; identify opportunities to avoid and minimize cumulative impacts.	Cumulative Impacts (in sections by environmental parameter)
	EPA-12	Climate change: Quantify and disclose the anticipated climate change benefits of solar energy; climate change's potential influence.	Air Quality
	EPA-13	Air Quality: Detailed discussion of ambient air quality; quantify project emissions; specify emission sources by pollutant (mobile, stationary, ground disturbance); identify the need for an Equipment Emissions Mitigation Plan (EEMP) and Fugitive Dust Control Plan.	Air Quality

Name and Agency of Commenter (and Date of Comment)	Comment Number	Summary of Comments by Environmental Parameter or Topic	Where the Comments will be Addressed in the Environmental Document
	EPA-14	Consultation with Tribal Governments: Describe process and outcome of government-to-government consultation; address the existence of Indian sacred sites in the project area; provide a summary of all coordination with Tribes and SHPO/THPO including identification of NRHP eligible sites and development of Cultural Resources Management Plan	Cultural Resources and Native American Values
	EPA-15	Environmental Justice: Identify environmental justice populations in the project area and potential impacts of the project on those populations; identify whether the impacts are disproportionate on those populations; discuss any coordination with environmental justice populations.	Socioeconomics and Environmental Justice
	EPA-16	Recreation: Address effects of the project on recreational users in the project area, including potential hazards to those users associated with the project facilities; identify appropriate safety precautions	Land Use
	EPA-17	Hazardous Materials and Wastes: Address potential indirect, direct, and cumulative impacts of hazardous wastes generated during project construction and operation; identify types and volumes of wastes; identify handling, storage, disposal, and management plans; alternative industrial processes using less toxic materials should be considered.	Hazardous Materials Management
	EPA-18	Land Use: Identify how the proposed action would support or conflict with objectives of federal, state, tribal, or local land use plans, policies, and controls in the project area.	Land Use
<b>Comment Letters from Groups and Organizations</b>			
Michael J. Conner, Ph.D., California Director, Western Watersheds Project (Undated letter)	WWP-1	Alternatives: Present environmental impacts of proposed action and alternatives in comparative form; consider “No Action Alternative” and “Alternative Site” alternatives	Alternatives
	WWP-2	Desert Tortoise: Describe, clearly characterize, and identify the impacted desert tortoise populations; ensure genetic connectivity among Desert Tortoise populations; fully document genetic background and provide a firm estimate of population size; frank estimates of expected losses; and provide a review of direct, indirect, and cumulative impacts on the West Mojave Recovery Unit.	Biological Resources
	WWP-3	Desert bighorn sheep: Review all direct, indirect, and cumulative impacts to bighorn sheep including linkage to habitat and connectivity issues.	Biological Resources
	WWP-4	Other Sensitive Animals and Plants: Fully analyze impacts to other sensitive species (i.e. Mojave fringe-toed lizard) and ensure compliance with West Mojave Plan’s conservation strategy and other applicable governing plans.	Biological Resources
	WWP-5	Wilderness Values: Provide a review of the direct, indirect, and cumulative impacts on the Cady Mountain Wilderness Study Area (WSA).	Cumulative Impacts

Name and Agency of Commenter (and Date of Comment)	Comment Number	Summary of Comments by Environmental Parameter or Topic	Where the Comments will be Addressed in the Environmental Document
	WWP-6	Climate Change: Use the recently released USGS desert tortoise habitat model to determine likely changes in desert tortoise habitat quality in the area and the importance of connectivity between populations.	Biological Resources
	WWP-7	Monitoring: Explain monitoring programs to monitor short and long term impacts of the project area.	
Defenders of Wildlife (letter dated 7/11/2009)	DW-1	Biological Resources: Concerned that the proposed project will reduce populations of certain wildlife, particularly Desert tortoise, bighorn sheep, and birds of prey.	Biological Resources
	DW-2	Does not believe the project area is in a degrading condition due to mining, livestock grazing, and off-road vehicle use as suggested.	
	DW-3	CEC and BLM should study and disclose the magnitude of development on wildlife movement, specifically the Desert tortoise and Desert bighorn sheep.	Biological Resources
	DW-4	Catalogue and discuss sensitive species populations and habitats present in the area and those cumulatively affected by this project and others in the area; articulate and implement a monitoring plan for sensitive species.	Biological Resources
	DW-5	Alternatives: Consideration of alternatives that include different sites or a reduction of project size.	Alternatives
	DW-6	Cumulative Impacts: Examine and disclose environmental effects of projects and human activities in the area	Cumulative Impacts (in sections by environmental parameter)
	DW-7	Interagency consultation for endangered and threatened species, specifically the Desert tortoise.	Biological Resources
Meg Grossglass, Off-Road Business Association (ORBA) and EcoLogic Partners, Inc. (undated letter)	ORBA-1	Recreation: Potential indirect, direct, and cumulative impacts to recreational uses in the area.	Land Use
	ORBA-2	Inclusion of a "Reclamation Plan".	
	ORBA-3	Water Quality: Impact on available water supplies.	Hydrology, Water Use, and Water Quality
	ORBA-4	Visual Impacts: Evaluate the project's aesthetic and visual impacts on the region.	Visual Resources
	ORBA-5	Biological Resources: Evaluate the project's direct, indirect, and cumulative impact on endangered and threatened species.	Biological Resources
	ORBA-6	Land Use: Evaluate project's consistency with existing land use and regulatory plans.	Land Use
	ORBA-7	Environmental Justice: Evaluate whether the project's environmental burdens are disproportionately placed on individuals and/or groups who, due to their socioeconomic status, have insufficient resources to challenge the project.	Socioeconomics and Environmental Justice
	ORBA-8	Cultural Resources: Evaluate potential impacts on archaeological, cultural, and historic resources.	Cultural Resources

Name and Agency of Commenter (and Date of Comment)	Comment Number	Summary of Comments by Environmental Parameter or Topic	Where the Comments will be Addressed in the Environmental Document
	ORBA-9	Alternatives: Evaluate and analyze feasible alternatives to the proposed project; public access to the Cady Mountains will be lost if approved as proposed; suggests four alternatives that would minimize the impact to public access of the area.	Alternatives
George C. Kerr, Wildlife & Habitat Coordinator, Society for the Conservation of Bighorn Sheep (letter dated 6/22/2009)	SCBS-1	Biological Resources: Concerned about the loss of habitat for bighorn sheep and the fragmentation of metapopulations; must maintain access through and/or around the area for wildlife management.	Biological Resources
	SCBS-2	Full and complete reclamation.	Project Description
The Wilderness Society and The National Resources Defense Council (letter dated 7/7/2009)	WS-1	Biological Resources: Prioritize protection of species in the project area by further analyzing potential impacts and developing Best Management Practices and steps to minimize and mitigate any unavoidable impacts.	Biological Resources
	WS-2	Cultural Resources: BLM should prioritize protection of area's outstanding cultural resources, including study of the area's resources, development of strategies to minimize and mitigate impacts, and ongoing engagement in consultation with local Native American tribes.	Cultural Resources
	WS-3	Soil Resources: Dedicate adequate time and resources early in the process to addressing soil resources issues adequately, including through the preparation of a detailed drainage, erosion and sediment control plan that addresses these potential impacts and provides mitigation measures that will render these hazards to a level less than significant.	Hydrology
	WS-4	Water Resources: Gather additional information to confirm that the water needed for the project will be available as well as that the source of the needed water will conform to existing California Energy Commission policy and all laws, ordinances, regulations, and standards.	Hydrology, Water Use, and Water Quality
	WS-5	Visual Resources: BLM and CEC should continue to collaborate on a visual analysis conforming to BLM regulations to address concerns identified in the IIR.	Visual Resources
	WS-6	Alternatives: Consider a project boundary alternative that avoids the Catellus parcels.	Alternatives
	WS-7	Land Use: Plan Amendment must fully analyze the impacts of this scale of industrial development on public lands of a largely undisturbed nature.	Land Use
	WS-8	Phased Development: BLM should consider granting a ROW only for the area necessary to support development for TE1 upgrades at this time. When TE2 upgrades have been approved, then BLM can consider granting ROW for the area necessary for the remaining 575 MW; because of technological challenges, BLM should consider establishing requirements for demonstration of technological/economic viability of the project within the first 3–5 years before extending the term of the ROW.	Project Description

Name and Agency of Commenter (and Date of Comment)	Comment Number	Summary of Comments by Environmental Parameter or Topic	Where the Comments will be Addressed in the Environmental Document
	WS-9	Should comprehensively analyze the project's net reductions to GhG emissions, including GhG emissions during manufacture, construction, operation, decommissioning, and reclamation of the area. Analysis should consider both the potential for the project to reduce GhG emissions as well as potential for the project to increase these emissions. The results should then be compared to the same type of analysis for fossil-fuel based energy production, including combined-cycle natural gas fired and coal fired power plants.	Project Description
	WS-10	Agencies should do a thorough analysis of the anticipated costs of decommissioning and restoring the area. The agencies should also require bonds be purchased before development.	Project Description
	WS-11	Agencies must thoroughly consider and present the public with a true range of alternatives. Agencies should also compare the project and its impacts with all other identified "fast-track" projects on BLM land in order to identify the least environmentally harmful projects among the applicants that have been selected for expedited permitting.	Alternatives
April Sall, Conservation Director, The Wildlands Conservancy (letter dated 7/7/2009)	TWC-1	The Wildlands Conservancy supports the use of renewable energy resources.	See Note 1
	TWC-2	Phase 1 of the project lies on the boundary of the Pisgah Area of Environmental Concern (ACEC), Cady Mountains WSA, and proposed Mojave National Monument boundary (which includes the Catellus lands). This is of high concern because of the cumulative impacts the site would have on this highly environmentally sensitive area.	Cumulative Impacts
	TWC-3	Development of Phase 2 of the project should begin before Phase 1 because Phase 2 is closer to the Pisgah substation, closer to several existing transmission ROWs, closer to I-40, and provides better acreage to megawatt production ratio	Project Description
	TWC-4	If Phase 1 must proceed first, shift the site to the west so as to eliminate encroachment onto BLM-managed Catellus sections, the proposed national monument, Cady Mountains WSA, several Desert Wildlife Management Areas, and sensitive plant species.	Project Description
	TWC-5	The mock-up of the site during the site tour does not match that in the document.	Project Description
	TWC-6	Because of the nature of the soil in the area, more impactful drilling methods will be required.	Project Description
	TWC-7	Carbon emissions will increase with the loss of critical cryptobiotic soil crusts and caliche layers which help stabilize the ground and sequester carbon; contributing to climate change, lessening the benefits of renewable energy generated.	Project Description
	TWC-8	Habitat and microhabitat impact assessments are necessary before any further developments.	Biological Resources

Name and Agency of Commenter (and Date of Comment)	Comment Number	Summary of Comments by Environmental Parameter or Topic	Where the Comments will be Addressed in the Environmental Document
	TWC-9	Phase 1 will block access to historical trails and open routes on public land in this area.	Land Use
	TWC-10	Water Resources: Utilize technology that is “dry-cooled” instead of “wet-cooled”; how much water will be used during each phase of the project; how will wastewater be managed;	Hydrology, Water Use, and Water Quality
	TWC-11	Consider using private and public lands that have been previously degraded or disturbed and closer to existing transmission.	Alternatives
Loulena A. Miles, California Unions for Reliable Energy (letter dated 6/22/2009)	CURE-1	Does not provide adequate information or analysis in the following biological areas: (1) baseline information regarding desert tortoise; (2) mitigation for impacts to desert tortoise; (3) impacts to burrowing owl; (4) rare plants survey methods and baseline data; (5) rare plant impact assessment; (6) rare plant mitigation; (7) impacts to the Mojave fringe-toed lizard; (8) impacts to Nelson’s bighorn sheep; (9) impacts to wildlife corridors; (10) impacts to nesting bird species; (11) collision hazards; (12) wildlife mortality from evaporation ponds.	Biological Resources
	CURE-2	Does not provide adequate information or analysis regarding impacts to potential jurisdictional waters.	Hydrology, Water Use, and Water Quality
	CURE-3	Does not provide adequate information or analysis regarding cumulative impacts of the project.	Cumulative Impacts
	CURE-4	Does not provide adequate information or analysis regarding compliance with laws, ordinances, rules, and standards.	Project Description
Kevin Emmerich and Laura Cunningham, Basin and Range Watch (email dated 6/8/2009)	BRW-1	Concerned the BLM is intentionally streamlining the approval of the project.	Project Description
<b>Comment Letters from Members of the General Public</b>			
David Beaumont (emails dated 7/7/2009 and 7/10/2009)	DB-1	Proposed fencing along project boundary will cut off vehicular access to a guzzler maintained by the California Department of Fish and Game.	Biological Resources
	DB-2	What design criteria will be utilized to continue wildlife migration routes through the fenced area?	Biological Resources
	DB-3	Wildlife habitat and recreational access will be lost with the building of the boundary fence; What will be done to mitigate these losses?	Biological Resources and Land Use
	DB-4	Will the damage to the area be reclaimed after the project is over?	Project Description
	DB-5	Suggests leaving a corridor open between Solar 1 and Solar 3 for animal and vehicle traffic.	Alternatives
	DB-6	Suggests moving proposed boundaries back in order to allow vehicular traffic along the fencelines in order to connect routes which have been isolated.	Alternatives
	DB-7	Concerned with the number of miles of access roads needed for the project and the closure of existing roads used for recreational and wildlife care purposes.	Land Use

Name and Agency of Commenter (and Date of Comment)	Comment Number	Summary of Comments by Environmental Parameter or Topic	Where the Comments will be Addressed in the Environmental Document
Joachim Falkenhagen (email dated 7/8/2009)	JF-1	Local climate consequences of solar thermal generation should be assessed in the future.	Cumulative Impacts
	JF-2	Stirling dishes are less suitable to water cooling than parabolic trough solar power stations; the cumulative number of solar projects in the area might make it possible to bring water from the Pacific for cooling, though that would need to be established with a feasibility study.	Project Description
Joe Orawczyk (email received 6/23/2009)	JO-1	Water Resources: Concerns with transmission of water from groundwater wells (what type of underground pipelines); Will there be water towers or evaporative coolers on site and how much water will these use?; What is the total number of groundwater wells that will be dug for the project?; Water tank size will hold larger quantity than stated.	Hydrology, Water Use, and Water Quality
	JO-2	How will SES accommodate visitors?; Will there be public parking?; Will there be a Welcome Center or museum?; Are there safety plans for visitors?; How will increase in local traffic and trash be mitigated?; What effect will visitors have on water resources; Will an observation point be built for visitors?	Project Description
	JO-3	What are the hazards of flood paths within the project area?; has the delineation been done, if not, when will it be available and will it be publicly available?	Hydrology, Water Use, and Water Quality
	JO-4	What effect will nighttime light pollution have on wildlife and travelers?; Will there be light along the perimeter fence?; How will light pollution be mitigated?; Would night vision security cameras be an option after construction?	Visual Resources
	JO-5	Has there been any coordination with Homeland Security?; How quickly could Solar 1 recover from a potential terrorist attack?; Who will pay for security and repair if subject to a terrorist attack?	Project Description
	JO-6	Will the total dissolved solids in the evaporative ponds from washing mirrors be hazardous?; Could the brine be filtered and used for dust control, fire suppression, and flushing commodes?	Hazardous Materials
	JO-7	How often will the mirrors be washed? There is some discrepancy in different parts of the AFC. Will the washing be done manually or automatically?	Project Description
	JO-8	Some conflicting data in amount of potable water used.	Water Use and Water Quality
	JO-9	Of the 182 workers, how many will be work construction and how many non-construction? What will their work schedules be? What will workforce fluctuations be for the life of the project and what will their effect be on the environment and water resources?	Project Description
	JO-10	Size of the aquifer and does it recharge?; What is the risk of the depleted aquifer creating a sinkhole?	Hydrology, Water Use, and Water Quality

Name and Agency of Commenter (and Date of Comment)	Comment Number	Summary of Comments by Environmental Parameter or Topic	Where the Comments will be Addressed in the Environmental Document
	JO-11	Why was data on pump and water quality tests insufficient? What are the level of nitrates, fluoride, pharmaceuticals, and endocrine disrupters in the water? How will the water be treated? If chemicals are used, what (if any) health risks or hazards to people do they pose? How will that be mitigated/controlled?	Water Use and Water Quality
	JO-12	Will secondary wells be capped and abandoned or removed and backfills after construction?	Project Description
	JO-13	Will workforce be permitted to drink deionized water to mitigate effects of excessive fluoride?	Water Use and Water Quality
	JO-14	What further evaluation will be done for the various options that may be available to treat, store, and distribute the water?	Water Use and Water Quality
	JO-15	Will reverse osmosis be used?; If so, how much energy will this consume?; If not, why the need for evaporative ponds?	Water Use and Water Quality
	JO-16	If bottled water and/or soda will be available, what recycling program will be implemented? Which bottling companies are being considered and are they local?	Project Description
	JO-17	Will the use of waterless urinals and compost toilets be considered? If not, what approved off-site disposal facility will receive the waste?	Project Description
	JO-18	Concerned with lack of closure plan.	Project Description

## **A.8 ORGANIZATION OF THE DOCUMENT**

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The SA/DEIS begins with an Executive Summary, Introduction, Proposed Action Alternative/Project Description, Alternatives, and Cumulative Scenario. The environmental, engineering, and public health and safety analyses of the proposed project are contained in 20 separate chapters. They include the following: Air Quality, Biological Resources, Cultural Resources and Native American Values, Hazardous Materials Management, Land Use Recreation and Wilderness, Noise and Vibration, Public Health and Safety, Socioeconomics and Environmental Justice, Soil and Water Resources, Traffic and Transportation, Transmission Line Safety and Nuisance, Visual Resources, Waste Management, Worker Safety and Fire Protection, Geology Soils and Paleontological and Mineral Resources, Geologic Stability, Facility Design, Power Plant Efficiency, Power Plant Reliability, and Transmission System Engineering. These chapters are followed by the general project conditions and a summary of agency and public comments. This is followed by a list of staff who contributed to the document and a reference list.

Each of the 20 technical area assessments includes a discussion of:

- laws, ordinances, regulations and standards (LORS);
- the regional and site-specific setting;
- project direct and indirect impacts;
- mitigation measures;
- closure and decommissioning impacts and mitigation;
- no project/no action alternative;
- cumulative impacts;
- noteworthy public benefits;
- response to public and agency comments on the PSA;
- conclusions and recommendations; and
- mitigation measures/conditions of certification for both construction and operation (as applicable).