

Memorandum

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08-AFC-13C	
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Date: August 22, 2011

To: Commissioner Karen Douglas, Siting Committee Chair
Chairman Robert B. Weisenmiller, Siting Committee Associate Member
Kourtney Vacarro, Hearing Officer

From: Daniel J. O'Shea, on behalf of Calico Solar, LLC

Re: **Calico Solar Project Amendment (CSPA) (08-AFC-13C)**
Status Memorandum

In preparation for to the Calico Solar Project Amendment Mandatory Status Conference noticed by the Committee for August 24, 2011 and Staff's Status Update/Issues Statement docketed August 17, 2011, Calico submits this Status Memorandum. At the Mandatory Status Conference, Calico would like to discuss the schedule, the list of outstanding deliverables, lead agency determination and next steps.

I. Calico's Deliverables

The following is an update on the status of all of Calico's outstanding deliverables and open items:

Hydrologic Analyses: Calico completed the additional soil borings that were required for the updated Geotechnical Report. In order to be complete, Calico decided to include the impacts of the proposed new access road to Section 8 (see Supplemental Amendment below) in its hydrologic analyses. Therefore, the anticipated dates for submission of all of these reports has been pushed out to the dates indicated on the attached Exhibit 1, with the final deliverables to be submitted by the end of September 2011.

Glint/Glare Study: On July 22, 2011, Calico's consultant, POWER Engineers, sent BNSF a letter requesting certain information about the locomotives, rail signs, signals and maintenance activities, which is necessary to create the 3D computer model to determine the likely incidence and pattern of potential glint and glare from the Project. BNSF has responded to POWER's request, providing information over the last few weeks including general signal height and schematics that were sent today. We understand that BNSF and POWER are working together to confirm that POWER has all the information necessary to proceed with its analysis. Per BNSF's offer, POWER is scheduling a site visit to verify heights and locations of signals at the Project site. POWER has indicated that it will take nine weeks after verification of this information to build the model, analyze the data, integrate Dr. Hovis' analysis and complete the glint/glare report.

C. Immitis Analysis: As discussed at the June 23, 2011 Mandatory Status Conference and the June 28, 2011 workshop, Calico has worked diligently to identify a laboratory capable of completing the soil testing for *Coccidioides immitis* arthroconidia to respond to Patrick Jackson's data request (#8). To date, Calico has been unable to find a commercial laboratory with the capability to conduct this testing. A summary of the laboratories that Calico has contacted is attached as Exhibit 2. As explained in its June 6, 2011 letter to Messrs. Hoffman and Jackson, Calico had expected its responses to the remaining outstanding data requests from Patrick Jackson (#11, 12a, c-f) to rely in part on the soil tests. Calico has

presented evidence showing that the information requested by Patrick Jackson is not reasonably available to Calico as required by Section 1716(b). Calico respectfully requests that the Commission relieve Calico of the obligation to respond to the remaining outstanding data requests from Patrick Jackson (#8, 11, 12a, c-f) because the information is not reasonably available to Calico.

Modified Project Description: Calico is preparing a modified project description, which sets forth the jurisdictional portion of the Modified Project (the SunCatchers plus the appurtenant facilities) and the non-jurisdictional portion of the Modified Project (the PV technology). Calico expects to be able to submit the modified project description, which will include maps depicting both portions of the Modified Project by the end of the month.

Supplemental Amendment: As presented at the April 20, 2011 Informational Hearing in Barstow, California, Calico has proposed a new means of accessing the western portion of the Project (in T08N, R05E, Section 8) with the bulk of the Project. Calico proposes to access the western portion using (with certain improvements) an existing road that runs diagonally across the northern portion of T08N, R05E, Section 9, the Elementis property. Calico's consultant, URS, is preparing a Supplemental Amendment which will analyze the impacts of this new access road. As mentioned above, this access road will be included in all of the hydrologic analyses as well. This Supplemental Amendment will also include analysis of constructing the water line using jack-and-bore, instead of running it through a railroad trestle. Calico is proposing both of these project changes at the request of BNSF because BNSF does not want Calico to travel on its right-of-way south of the railroad to access Section 8, and BNSF prefers the jack-and-bore construction method for the proposed water line. Calico expects to be able to submit the Supplemental Amendment by the end of September.

BNSF's Data Request: BNSF served Calico with BNSF's First Set of Data Requests to Calico Solar on August 10, 2011 pursuant to the Committee Authorization and Denial of Specific Data Requests from BNSF Railway to Calico Solar, LLC dated July 26, 2011. Pursuant to Section 1716(f) of the Energy Commission's Regulations, Calico is prepared to submit its objections to BNSF's data request on August 30, 2011 and its response on September 9, 2011.

Update on BLM Process: BLM sent Calico its Notice of Acceptance dated June 6, 2011. BLM has begun processing Calico's amendment application. Calico representatives met with BLM on August 9, 2011 to discuss the application process. Calico has provided the BLM with a chart analyzing the relative level of potential environmental impacts under NEPA associated with the proposed amendment to the Calico Solar Right of Way as compared to the Approved Project. This side-by-side comparison of the proposed changes on the affected resources was accompanied by a cover letter dated August 5, 2011 and is attached for your reference as Exhibit 3.

Update on CPUC proceeding: In its Status Update/Issues Statement, staff requested an update on the CPUC access issue. The evidentiary record for CPUC complaint C-10-10-015 was closed on July 13, 2011. Calico expects the Presiding Officer's Decision to be issued on September 11, 2011, which is 60 days from close of record. After the comment period on the Presiding Officer's Decision ends, Calico expects a final decision from the Public Utilities Commission mid-October 2011.

II. Lead Agency and Environmental Review of the Modified Project

In its Status Update/Issues Statement, Staff requested clarification from the Committee on several points related to the environmental review of the Modified Project. In this section, Calico provides its suggested responses to Staff's questions.

1. Is staff the lead agency under California Environmental Quality Act (CEQA) for the PV portion of the project?

Yes. In its July 1, 2011 Ruling, the Committee confirmed that the Energy Commission must serve as the lead agency over the jurisdictional portion of the Modified Project, but that it would consult with California Department of Fish and Game (CDFG) as to the lead agency for the PV component of the Modified Project. In its August 2, 2011 letter, CDFG concluded that the Commission is the appropriate lead agency for the Calico Solar Project Amendment. CDFG also confirmed that, as a responsible and trustee environmental agency, CDFG will assist the Commission in completing its review. CDFG will then rely on the Commission's environmental analysis and fulfill its own responsible agency obligations. Therefore, Energy Commission staff should analyze the whole of the project as lead agency.

2. How does the Committee prefer Staff prepare the document—i.e., one document or two documents? Should Staff separate the conditions of certification for the PV portion and SunCatcher part of the project?

Staff should prepare one document. One document makes more sense from both the legal and practical perspective. Because this is a siting decision, the Commission has the authority to and should evaluate the incremental impacts of the proposed amendment under the Commission's certified regulatory authority. In conducting the analysis, the Commission must consider all potential incremental impacts associated with the "whole of the project." To attempt to bifurcate the analysis into two separate documents with different legal requirements and processing timelines and procedures would unnecessarily complicate the process and could lead to either an incomplete analysis of the whole of the project or inconsistent analysis. Both the PV and the SunCatcher technology rely on the same infrastructure; therefore, there is no easy way to separate out the impacts of one technology versus the other. Including the complete analysis in one supplemental document ensures that the Commission as lead agency, all responsible agencies including CDFG, and the public are fully informed of the potential impacts associated with the whole of the project prior to taking an action on the amendment application. As CDFG has correctly indicated it can rely on the Commission's environmental analysis, which should be a document produced under the Commission's certified regulatory authority. This approach also assures maximum defensibility of the document and would avoid having judicial review situated in different venues.

3. Should Staff draft an Environmental Impact Report (EIR) per CEQA for the PV portion of the project? Or, does this analysis fall under our certified regulatory authority and guidelines?

As discussed above, Staff should prepare a single supplemental environmental review document under the Commission's certified regulatory authority.

4. The Committee is asking for an alternatives analysis for the Amendment. Staff does not typically do an alternatives analysis for an amendment. Staff is requesting the Committee be more specific in their

directive. Should the Alternative analysis include: site layout?, project location?, technology?, other?. Should the analysis be of both the PV and SunCatcher portions of the project or just the PV portion?

Calico shares Staff's confusion as to why the supplemental review needs to include consideration of alternatives. During the original Project approval, the Commission considered, but rejected from further consideration, a technology alternative to the Project based on the finding that solar photovoltaic technology (utility scale) would not substantially reduce the impacts associated with the Project that was approved by the Commission. The information provided to date confirms this assessment and therefore, there does not appear to be any need to supplement the reasonable range of alternatives previously considered, but rejected, by the Commission. If the Committee believes that Staff should study alternatives, any studied alternative should be compared against the base line which would be construction of the Approved Project. Because the reduced acreage alternative has already been considered and rejected, there is no need to consider such an alternative here. The Committee could study a PV only alternative, but for the reasons stated in the Calico decision and as supported by the analysis submitted with the Petition to Amend, Calico does not anticipate that this would result in a substantial change in impacts.

III. Schedule

Based upon the anticipated schedule of deliverables set forth in Exhibit 1, Calico anticipates that it would be able to satisfy data adequacy requirements by November 1, 2011 and that these proceedings should proceed on the following schedule:

Activity	Date
Calico's submission of final deliverables	November 1, 2011
Staff Publication of Staff Assessment	December 15, 2011
Comment Period on Staff Assessment closes	January 15, 2012
Committee Publication of PMPD	Early February 2012
Comment Period on PMPD closes	Early March 2012
Commission Decision	Mid-March 2012

Exhibit 1

Updated Schedule for Outstanding Deliverables

	Studies/Reports Currently in Progress	Anticipated Date for Initial Deliverable to CEC (Revised)
1	Updated Geotechnical Report (S&W-8)	August 24, 2011
2	Infiltration Report, including an analysis for the potential for soil erosion and the increased potential for infiltration along the unimproved module access points (S&W-13) (CEC Data Request #14, 18; Jackson Data Request #1)	September 2, 2011
3	Geomorphic and Hydraulic Analysis, including sediment transport studies (S&W-8) (CEC Data Request #14, 18; Jackson Data Request #1)	September 9, 2011
4	Geomorphic and Biologic Analysis (S&W-8) (CEC Data Request #14, 18; Jackson Data Request #1)	September 9, 2011
5	Scour Analysis (S&W-3) (CEC Data Request #14, 18; Jackson Data Request #1)	September 9, 2011
6	Pole Foundation Stability Report (S&W-3) (CEC Data Request #14, 18; Jackson Data Request #1)	September 9, 2011
7	Grading and Drainage Plan (CIVIL 1) (CEC Data Request #15; Jackson Data Request #2, 3)	September 30, 2011
8	DESCP (S&W-1) (CEC Data Request #18, 21; Jackson Data Request #5)	September 30, 2011
9	Glint and Glare Study (TRANS-7) (CEC Data Request #28, 29, 30)	November 1, 2011
10	Results of soil testing for <i>C. immitis</i> (Jackson Data Request #8)	unknown
11	<i>C. immitis</i> Analysis (Jackson Data Request #11, 12a, 12c, 12d, 12e, 12f)	unknown

Exhibit 2

Summary of *C. immitis* Testing Inquiries

To respond to Patrick Jackson's Data Requests related to *Coccidioides immitis* (*C. immitis*) Calico directed its Certified Industrial Hygienist (CIH), Roger Margotto at Tetra Tech EC, to search for a laboratory to perform the soil analyses for *C. immitis*. Our CIH has contacted the following people, programs, organizations and laboratories:

- **Gen-Probe Incorporated.** Gen-Probe developed a kit for clinical laboratories and researchers to test on live cultures. Our CIH contacted Gen-Probe and was referred to the sales department. On June 30, 2011, Tonya Shin, a tech support representative responded to our inquiry and provided the following two websites that the Gen-Probe marketing department thought may help in our search for fungal soil testing: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC270596/pdf/jcm00036-0090.pdf> and <http://www.nabersequipment.com/accuprobe.htm>. Neither of these websites has led to any further laboratory referrals.
- **Several NELAP and NELAC accredited laboratories.** Our CIH attempted to contact the laboratories the weeks of June 6 and June 13. The only response received was from MicroBac Laboratories, who suggested contacting the Center for Disease Control (CDC).
- **Center for Disease Control and Prevention.** CDC had no references to laboratories that could perform the necessary testing and suggested contacting the EPA.
- **EPA.** The EPA suggested contacting CDC.
- **California Department of Environmental Health.** Our CIH left a message and has received no response.
- **Dr. John Taylor, University of California, Berkeley.** The week of June 13, Dr. Taylor referred Dr. John Galgiani at the University of Arizona (U of A).
- **Dr. John Galgiani.** On June 15, Dr. Galgiani referred two researchers who work together at the U of A, Marc Orbach and Joe Tabor.
- **Dr. Marc Orbach.** On June 16, Dr. Orbach indicated an interest in conducting the testing. He has proposed a research study and noted that this would not be "a trivial project because of the use of the mouse model for recovering strains, under animal BSL3 conditions." Dr. Orbach said that he was willing to provide a budget. Our CIH followed up with Dr. Orbach on June 17 and June 22, requesting the lab's availability, timeline and budget. On July 18, Dr. Orbach replied that he had been out of town and would put together a budget estimate.
- **San Diego Environmental Health Department.** San Diego County referred the NELAP and NELAC laboratories (note response above).
- **Kern County Public Health Services Department, Environmental Division.** When researching the experience of Kern County with *C. immitis*, our CIH found the Kern County Department of Public Health Status Report, which stated that "The existence of the fungus in most soil areas is temporary. *There is no effective way to detect and monitor CM growth patterns in the soil.* Thus, controlling the growth of the fungus in the environment to reduce the risk to individuals is

currently not a viable option.” (2002, page 3-2; 2003, page 3-3; *emphasis added*)¹ Our CIH also contacted Kern County’s Environmental Division, who referred Dr. Royce Johnson, MD, an infectious disease specialist at the Kern County Medical Center.

- **Dr. Royce Johnson.** On June 21, Dr. Johnson recommended Dr. Jorge Talamantes, PhD at CSU Bakersfield, physics department, and Dr. Mike Rinaldi, PhD at the University of Texas San Antonio (UTSA), mycology lab.
- **Dr. Mike Rinaldi.** Dr. Rinaldi no longer works at UTSA, and we have not been able to locate him.
- **Dr. Jorge Talamantes.** Dr. Talamantes referred Dr. Antje Lauer, PhD at CSU Bakersfield in the biology department. According to Dr. Talamantes, Dr. Lauer has done soil analysis for *C. immitis* using DNA extraction and gene amplification.
- **Dr. Antje Lauer.** On July 18, our CIH spoke with Dr. Lauer, who has previously done soil analyses for *C. immitis* directly from soil samples using an enhanced polymerase chain reaction (PCR) procedure that does not use mice. Dr. Lauer’s method tests for hyphae and requires soil samples collected in March. As a University researcher, Dr. Lauer would not be able to accept samples on a fee basis due to liability issues, but she may be willing to consider conducting a research project on the Calico site next year. Dr. Lauer also pointed out that even if *C. immitis* is detected on site, it may not be pathogenic, and questioned the utility of completing this analysis for the described purposes.
- **Ventura County Resources Management Agency, Environmental Health Division.** Ventura County initially suggested checking the yellow pages. Then Ventura County gave the number for Brett Austin at its Public Health Laboratory.
- **Brett Austin, Ventura County Public Health Laboratory.** Mr. Austin informed our CIH that the Public Health Laboratory does not perform analysis for soil samples. On June 24, Mr. Austin referred Dr. Demosthenes Pappagianis, MD, PhD at UC Davis.
- **Dr. Demosthenes Pappagianis.** Dr. Pappagianis, who lists coccidioidomycosis as research interest area, is unavailable to conduct any analysis and thought that it would be difficult for Calico to find anyone with the ability to test soil samples for *C. immitis* arthroconidia. Dr. Pappagianis questioned the validity of direct testing of soil to determine presence or absence of *C. immitis* arthroconidia because even a negative result would not mean that there was an absence of the spore on site. Dr. Pappagianis also questioned mammalian testing relying on random soil sampling.
- **Ventura County Air Pollution Control District.** Our CIH reviewed the Ventura County Air Quality Assessment Guidelines, October 2003, including the mitigation measures for Valley Fever. Our CIH spoke with Mike Villegas, an Air Pollution Control Officer, who said that he would have one of their experts on the 2003 Guidelines return the call. On June 28, our CIH spoke with Mr. Chuck Thomas, Supervisor Planning and Evaluation Division, and discussed the Ventura County Air Quality Assessment Guidelines, October 2003. Mr. Thomas said the District was in the process of revising the Guidelines. He indicated that the revisions are likely to delete the recommended mitigation measure of seropositive workers and retain dust suppression as the

¹ <http://www.kernpublichealth.com/departments/divisionofhealthassessment/pdfs/HSR-2002.pdf>;
<http://www.kernpublichealth.com/departments/divisionofhealthassessment/pdfs/HSR-2003.pdf>

sole mitigation measure. Mr. Thomas was not able to provide any referrals for laboratories that may be available to conduct the soil testing that Calico has proposed.

- **Kings County Department of Public Health, Environmental Health Services.** On July 15, our CIH spoke with Troy Hummerding, who stated that the County labs would be unable to perform the necessary soil testing and that he was unaware of any laboratories that perform such analyses.
- **California Department of Public Health, Division of Environmental and Occupational Disease Control (DEODC).** On July 19, our CIH spoke with Ms. Janet Macher, who informed us that the state no longer has a mycology laboratory. Similar to Dr. Pappagianis, Ms. Macher also questioned the validity of soil testing to determine presence or absence of *C. immitis* arthroconidia.
- **Dr. Michael Allen, Director of the Center for Conservation Biology, UC Riverside.** Our CIH sent an e-mail inquiry to Dr. Allen on July 15, but has not received a reply.

Exhibit 3

August 5, 2011

Ms. Roxie Trost
Field Manager
Bureau of Land Management
Barstow Field Office
2601 Barstow Road
Barstow, CA 92311

Re: Calico Solar (CACA 049537)

Dear Ms. Trost:

I am writing to provide information regarding the relative level of potential environmental impacts associated with the proposed amendment to the Calico Solar Right of Way Grant as compared to the Approved Project. As offered, we have thoroughly reviewed the analysis in the Final Environmental Impact Statement and Proposed Amendment to the California Desert Conservation Area Plan for the Calico Solar (formerly SES Solar One) Project and to assist you in assessing the potential changes in impacts that could result from the proposed amendment, we have applied the FEIS' analytical methodology for evaluating impacts to the Amended Project. The enclosed table summarizes the impacts, on a resource by resource basis, of the FEIS Agency Preferred Alternative (850 MW SunCatcher Project on 6,215 acres); the Approved Project (663.5 MW SunCatcher Project on 4,613 acres) based on the ROD, the analysis provided in the Determination of NEPA Adequacy and response to public comments on the FEIS; and the proposed Amended Project (663.5 MW PV-SunCatcher Project on 4,613 acres) based on the analysis completed by our consulting team. The breakdown of resources as well as the focus of the analysis is based on and consistent with the analysis included in the FEIS.

As detailed in the table, our assessment concludes that the impacts of the Amended Project would be less than or equal to the impacts of the Approved Project. Following is an overview of the basis for this conclusion.

Impacts Assumed for All Resources Located within Footprint of the Project.

For many resources elements, the FEIS assumed that all resources located within the project footprint would be adversely impacted by Project development. For each of these areas, the severity of the impact of the Amended Project would be the same as the Approved Project given that the footprint on BLM lands will not be changed. Additionally, although the precise areas of disturbance will likely be altered, the overall level of site disturbance associated with the Amended Project will be the same as or slightly less than the Approved Project. This is true for the following resource elements:

- Biological Resources:
 - General vegetation
 - Invasive, non-native and noxious weeds
 - General wildlife
 - Birds
 - Wildlife movement corridors

- Special-status plants: white margined beardtongue and others
 - Special-status reptiles: desert tortoise, Gila monster, and Mojave fringe-toed lizard
 - Special-status birds: Bendire's thrasher, burrowing owl, golden eagle, Le Conte's thrasher, mountain plover, and Swainson's Hawk (as relates to loss of habitat)
 - Special-status mammals: American badger, desert kit fox, Nelson's bighorn sheep and special status bats.
- Cultural Resources and Paleontology
 - Geology and Mineral Resources
 - Grazing and Wild Horses and Burros
 - Land Use
 - Recreation
 - Environmental Justice
 - Special Designations
 - WAs and WSAs
 - ACECs
 - DWMA's
 - Donated and Acquired Lands
 - Traffic and Transportation:
 - Effects on BLM Routes
 - Hydrology and Water Resources
 - Floodplains and Potential Flood Damage

Impacts Related to Specification of the Utilized Solar Technology

Some of the Project's impact relate to specifications of the solar technology used on the site. These impacts will be reduced due to the partial substitution of PV for SunCatchers due to the following:

- PV modules have a much lower profile (averaging a 9 foot elevation above ground level as compared to 40 feet with the SunCatcher). The lower profile will reduce the visual impacts of the Amended Project. The lower profile will also reduce impacts to some biological resources such as birds as the chances for avian collision will also be reduced.
- PV modules reduce the noise that will be associated with the Amended Project because they do not utilize the Stirling Engine and the remaining SunCatchers will be placed at a location which is designed to minimize the noise edge effects. The reduction in noise is anticipated to lessen impacts to wildlife in the vicinity.
- Because PV modules do not have mirrors and absorb sunlight rather than reflect it, potential impacts associated with glare will be reduced. We are currently conducting a study to quantify

potential glint and glare impacts and this analysis is anticipated to be completed mid-September, 2011.

- Less hazardous materials are utilized with PV modules during operation than SunCatchers; therefore, the amount of hazardous materials transported to and stored on the site will be reduced.
- The equipment needed to install PV modules is lighter than SunCatchers and given that the components of PV are lighter and require less on site assembly, the construction equipment will have less emissions, the number of construction employees will be reduced, and the number of construction deliveries will be reduced; this will reduce air quality impacts.
- PV modules require substantially less maintenance than SunCatchers. Therefore, the amount of workers required during operation will be less, the maintenance fleet will include fewer and smaller vehicles, and the number and length of improved roadways on the site will be reduced. These changes will reduce social economic impacts, air quality impacts, and amount of soil disturbance.
- The Amended Project will reduce the number of transmission towers (due to the relocation of the substation) and will thereby reduce the opportunities for predators to perch on the Project site, lessening impacts to a number of wildlife species.

Impacts Related to Project Operation

For some resources, the impact of the Project is due to how the Project will operate. These include public health and safety, hazardous materials, waste management, emergency response, visual impacts (nighttime impacts and construction impacts, and impacts of closure and decommissioning and indirect impacts); and operations wastewater. Because the Amended Project will use the same methods as the Approved Project to address each of these issues, the overall impact will remain the same. Further, because the Amended Project will utilize the same amount of water, the impacts to groundwater will not change.

Impacts Related to Area of Disturbance

Because the overall level of disturbance associated with the Amended Project will be slightly less than the Approved Project, the impacts associated with such disturbance will remain substantially the same. The reduction in the number of improved roadways will reduce the impacts to state jurisdictional waters. We also anticipate that impacts to hydrology and erosion will remain the same given that the Amended Project will be required to meet the same performance standards regarding avoidance and mitigation of potential impacts to soils and water as the Approved Project. We are currently conducting detailed hydrologic studies and anticipate that these will be completed mid-September, 2011.

We look forward to meeting with the BLM on August 9, 2011. Should you have any questions or need additional information prior to then, please let me know.

Sincerely,

A handwritten signature in blue ink, appearing to read "Daniel J. O'Shea". The signature is stylized with a large, sweeping initial "D" and "O".

Daniel J. O'Shea
On behalf of Calico Solar, LLC

cc: Joan Patrovsky
Greg Miller

**Calico Solar Project
Side-By-Side Comparison of
the Proposed Changes on the Affected Resources**

<u>Resource Element</u>	<u>Impact Assessment for 850 MW FEIS Agency Preferred Alternative</u>	<u>Impact Assessment for 663.5 MW Approved Project in Record of Decision</u>	<u>Impact Assessment for 663.5 MW Proposed Project in CEC Petition to Amend</u>
Air Quality and Climate	<ul style="list-style-type: none"> • The analysis of potential air quality impacts associated with the project was based on AERMOD modeling for construction and operations emissions; analysis conducted for the originally proposed 8,230-acre project as that represents the maximum expected effects of construction and operation emissions. • During construction, impacts would be related to off-road construction equipment, on-road construction vehicle exhaust and fugitive dust. • Operation impacts would occur from emergency generator, vehicles and equipment. • Both operation and construction activities would result in minimal contribution to violations of the most stringent PM10 standards. • Potential for substantial additional development in air basin resulting in increased air basin emissions would result in cumulative short-term construction and operation impacts on air quality. 	<ul style="list-style-type: none"> • The Approved Project would use two diesel generators, one Tier III 75kW generator and one Tier III 500 kW generator, to provide construction power, but emissions would remain the same under those modeled in the FEIS Agency Preferred Alternative using the AERMOD modeling for construction and operations emissions. • Reduced size of the Approved Project and corresponding reduced road length would lessen the construction impacts related to off-road construction equipment, on-road construction vehicle exhaust and fugitive dust. • Operation impacts would occur from emergency generator, vehicles and equipment. • Both operation and construction activities would continue to result in minimal contribution to violations of the most stringent PM10 standards. • Potential for substantial additional development in air basin resulting in increased air basin emissions would result in cumulative short-term construction and operation impacts on air quality. 	<ul style="list-style-type: none"> • <u>Air Quality impacts would be less than or equal to those associate with Approved Project; decrease in workforce and delivery vehicle trips, reduction in length and number of improved roadways, and reduction in operational fleet of vehicles would less emissions.</u> • The Amended Project would use up to five Tier IV 250 kW diesel generators to provide construction power. Because of the more stringent requirements for Tier IV engines versus the Tier II engines to be used under the Approved Project, there would be a decrease in NO_x,PM, and VOC, but an increase in CO emissions. Emissions overall would be less than or equal to those modeled in the FEIS Agency Preferred Alternative using the AERMOD modeling for construction and operations emissions and authorized under the Amended Project. • As with the Approved Project, reduced size of the project and corresponding reduced road length, as compared to the FEIS Agency Preferred Alternative, would lessen the construction impacts related to off-road construction equipment, on-road construction vehicle exhaust and fugitive dust. • Reduction in the amount of construction and operational workers and corresponding reduction in vehicle trips as compared to the Approved Project would lessen impacts. • Operation impacts would occur from emergency generator, vehicles and equipment. • Operational impacts would be reduced to due reduction in number and size of operational

<u>Resource Element</u>	<u>Impact Assessment for 850 MW FEIS Agency Preferred Alternative</u>	<u>Impact Assessment for 663.5 MW Approved Project in Record of Decision</u>	<u>Impact Assessment for 663.5 MW Proposed Project in CEC Petition to Amend</u>
Air Quality and Climate			
			<p>fleet necessary to conduct the mirror washing, inspections, and minor maintenance tasks.</p> <ul style="list-style-type: none"> • Both operation and construction activities would continue to result in minimal contribution to violations of the most stringent PM10 standards. • Potential for substantial additional development in air basin resulting in increased air basin emissions would result in cumulative short-term construction and operation impacts on air quality.

<u>Resource Element</u>	<u>Impact Assessment for 850 MW FEIS Agency Preferred Alternative</u>	<u>Impact Assessment for 663.5 MW Approved Project in Record of Decision</u>	<u>Impact Assessment for 663.5 MW Proposed Project in CEC Petition to Amend</u>
Biological Resources			
General Vegetation	<ul style="list-style-type: none"> Result in the loss of 6,215 acres of vegetation on the project site and impacts would extend a short distance from the project boundary. Although entire site would not be cleared of vegetation, FEIS assumed long-term adverse impact on remaining vegetation. Impacts on vegetation would be minimized by avoiding special status plants in designated ESAs, limiting disturbance, implementing erosion and dust control measures, conducting habitat restoration in disturbed areas and managing noxious and invasive weeds. Compensatory mitigation would offset project impacts. Incremental contribution to cumulative adverse impacts. 	<ul style="list-style-type: none"> Result in the loss of 4,613 acres of vegetation on the project site and impacts would extend a short distance from the project boundary. Although entire site would not be cleared of vegetation, based on the reasons stated in the FEIS, assumed long-term adverse impact on remaining vegetation. Impacts on vegetation would be minimized by avoiding special status plants in designated ESAs, limiting disturbance, implementing erosion and dust control measures, conducting habitat restoration in disturbed areas and managing noxious and invasive weeds. Compensatory mitigation would offset project impacts. Incremental contribution to cumulative adverse impacts. 	<ul style="list-style-type: none"> <u>Impacts to general vegetation same as the Approved Project because same footprint and analysis assumes total loss of vegetation within footprint.</u> Result in the loss of 4,613 acres of vegetation on the project site and impacts would extend a short distance from the project boundary. Although entire site would not be cleared of vegetation, based on the reasons stated in the FEIS, assumed long-term adverse impact on remaining vegetation. Impacts on vegetation would be minimized by avoiding special status plants in designated ESAs, limiting disturbance, implementing erosion and dust control measures, conducting habitat restoration in disturbed areas and managing noxious and invasive weeds. Shading effects of PV panels may preclude reestablishment of vegetation in some areas, however, severity of impact not changed given that FEIS assumed long term adverse impact on all the site's vegetation. Compensatory mitigation would offset project impacts. Incremental contribution to cumulative adverse impacts.
Invasive, Non-native and Noxious Weeds	<ul style="list-style-type: none"> Construction disturbance, use of water for dust control and mirror washing, shading and wind deflection associated with SunCatchers, and ongoing vegetation maintenance activities would support colonization by non-native species. Impact will occur on project site and may indirectly impact surrounding areas Implementation of a weed management plan that includes measures for targeting weeds for control and eradication and BMPS will avoid and minimize these impacts. 	<ul style="list-style-type: none"> Construction disturbance, use of water for dust control and mirror washing, shading and wind deflection associated with SunCatchers, and ongoing vegetation maintenance activities would support colonization by non-native species. Reduction in project size will reduce the area of impact as compared to the FEIS Agency Preferred Alternative. Implementation of a weed management plan that includes measures for targeting weeds for control and eradication and BMPS will avoid and minimize these impacts. 	<ul style="list-style-type: none"> <u>Impacts related to invasive species same as Approved Project because same footprint and relative disturbance areas.</u> Construction disturbance, use of water for dust control and mirror/panel washing, shading and wind deflection associated with SunCatchers and PV tracker blocks, and ongoing vegetation maintenance activities would support colonization by non-native species. Reduction in project size will reduce the area of impact as compared to the FEIS Agency Preferred Alternative; impact same as

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Biological Resources			
	<ul style="list-style-type: none"> Incremental contribution to significant cumulative adverse impacts. 	<ul style="list-style-type: none"> Incremental contribution to significant cumulative adverse impacts. 	<p>Approved Project because same footprint.</p> <ul style="list-style-type: none"> Implementation of a weed management plan that includes measures for targeting weeds for control and eradication and BMPS will avoid and minimize these impacts. Incremental contribution to significant cumulative adverse impacts.
General wildlife	<ul style="list-style-type: none"> Short-term and long-term direct and indirect adverse impacts on wildlife on the project site and in the immediate project vicinity due to increased trampling, predation, noise, light, traffic and habitat loss. BLM would require implementation of mitigation measures to reduce impacts to wildlife occurring on the project site. Incremental contribution to cumulative adverse impacts. 	<ul style="list-style-type: none"> Short-term and long-term direct and indirect adverse impacts on wildlife on the project site and in the immediate project vicinity due to increased trampling, predation, noise, light, traffic and habitat loss. Reduced size of the Approved Project would eliminate impacts to 1,602 acres of high-value wildlife habitat that would be impacted by the FEIS Agency Preferred Project. Reduced size of Approved Project would provide additional protection of the hydrologic function of high-value desert washes and associated wildlife habitat by eliminating obstruction of natural drainage patterns on the northern project boundary. BLM would require implementation of mitigation measures to reduce impacts to wildlife occurring on the site. Incremental contribution to cumulative adverse impacts. 	<ul style="list-style-type: none"> <u>Impacts to general wildlife same as Approved Project because same footprint, fenced area, and overall area of disturbance.</u> Short-term and long-term direct and indirect adverse impacts on wildlife on the project site and in the immediate project vicinity due to increased trampling, predation, noise, light, traffic and habitat loss. As with the Approved Project, the elimination of impacts to 1,602 acres of high-value wildlife habitat that would be impacted by the FEIS Agency Preferred Project would lessen wildlife impacts. As with the Approved Project, reduced size of amended project as compared to the FEIS Agency Preferred Project would provide additional protection of the hydrologic function of high-value desert washes and associated wildlife habitat by eliminating obstruction of natural drainage patterns on the northern project boundary. BLM would require implementation of mitigation measures to reduce impacts to wildlife occurring on the project site. Incremental contribution to cumulative adverse impacts.
Birds	<ul style="list-style-type: none"> Construction of the FEIS Agency Preferred Alternative would result in the loss of 6,215 acres of potential foraging and nesting habitat for birds. Swaths of native vegetation between alternating rows of SunCatchers would be unsuitable for nesting of most species due to planned ongoing mowing. 	<ul style="list-style-type: none"> Construction of the Approved Project would result in the loss of 4,613 acres of potential foraging and nesting habitat for birds; reduction in project size reduces impact. Swaths of native vegetation between alternating rows of SunCatchers would be unsuitable for nesting of most species due to planned ongoing mowing. 	<ul style="list-style-type: none"> <u>Impacts to birds same or less than the Approved Project because same loss of foraging habitat; impact may be reduced due to reduced operational noise.</u> Like the Approved Project, construction of the Amended Project would result in the loss of 4,613 acres of potential foraging and nesting habitat for birds.

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Biological Resources			
	<ul style="list-style-type: none"> Implementation of mitigation measures would avoid direct impacts to bird nests, eggs and young, it is likely that project would involve removal or relocation of some nests. Construction and operational noise would disrupt birds on and near the site; mitigation measures would address potential noise impacts to nesting birds. Permanent exterior lighting and nighttime construction lighting could disrupt birds; mitigation measures would reduce this impact. Glint or glare from SunCatchers could increase risk for avian collisions; Avian Protection Plan would include measures to address impact. Collision risks to and electrocution of birds at the project site considered unlikely. Incremental contribution to significant cumulative adverse impacts. 	<ul style="list-style-type: none"> Implementation of mitigation measures would avoid direct impacts to bird nests, eggs and young, it is likely that project would involve removal or relocation of some nests. Construction and operational noise would disrupt birds on and near the site; mitigation measures would address potential noise impacts to nesting birds. Permanent exterior lighting and nighttime construction lighting could disrupt birds; mitigation measures would reduce this impact. Glint or glare from SunCatchers could increase risk for avian collisions; Avian Protection Plan would include measures to address impact. Collision risks to and electrocution of birds at the project site considered unlikely. Incremental contribution to significant cumulative adverse impacts. 	<ul style="list-style-type: none"> Swaths of native vegetation between alternating rows of SunCatchers and PV tracker blocks would be unsuitable for nesting of most species due to planned ongoing mowing. Implementation of mitigation measures would avoid direct impacts to bird nests, eggs and young, it is likely that project would involve removal or relocation of some nests. Operational noise significantly reduced as a result of reduction in number and placement of SunCatchers; construction noise similar to Approved Project although may be slightly reduced due to change of equipment necessary to install PV. Mitigation measures would address potential noise impacts to nesting birds. Permanent exterior lighting and nighttime construction lighting could disrupt birds; mitigation measures would reduce this impact. Reduction in number of SunCatchers would reduce potential glint-glare impact to birds; Avian Protection Plan would include measures to address impact. Collision risks to and electrocution of birds at the project site would remain unlikely. Incremental contribution to significant cumulative adverse impacts.
Wildlife movement corridors	<ul style="list-style-type: none"> Installation of fencing around the 6,215 acre site would represent a substantial barrier to wildlife movement; anticipated that regional east-west movement would be maintained through the avoided corridor north of the project site; north-south movement would be limited by project development. Compensatory mitigation would offset impact. Incremental contribution to the loss and degradation of wildlife movement corridors and habitat linkages. 	<ul style="list-style-type: none"> Installation of fencing around the 4,613 acre site would represent a substantial barrier to wildlife movement; anticipated that regional east-west movement would be maintained through the avoided corridor north of the project site; north-south movement would be limited by project development. As compared to the FEIS Agency Preferred Alternative, Approved Project would have less impacts on wildlife movement corridors due to the reduced projects size. Compensatory mitigation would offset impact. Incremental contribution to the loss and 	<ul style="list-style-type: none"> <u>Impacts to wildlife movement corridors same as Approved Project given that the footprint has not changed and entire project area fenced.</u> As with the Approved Project, installation of fencing around the 4,613 acre site would represent a substantial barrier to wildlife movement; anticipated that regional east-west movement would be maintained through the avoided corridor north of the project site; north-south movement would be limited by project development. As compared to the FEIS Agency Preferred Alternative, the Amended Project would have

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Biological Resources			
		degradation of wildlife movement corridors and habitat linkages.	less impacts on wildlife movement corridors due to the reduced projects size. <ul style="list-style-type: none"> • Compensatory mitigation would offset impact. • Incremental contribution to the loss and degradation of wildlife movement corridors and habitat linkages.
Special-status plants: white-margined beardtongue	<ul style="list-style-type: none"> • Impacts would be avoided through on-site protection in Environmentally Sensitive Areas. • Other foreseeable future projects could result in significant adverse cumulative impacts. 	<ul style="list-style-type: none"> • Impacts would be avoided through on-site protection in Environmentally Sensitive Areas. • Other foreseeable future projects could result in significant adverse cumulative impacts. 	<ul style="list-style-type: none"> • <u>Impacts the same as the Approved Project as footprint unchanged and same avoidance measures required.</u> • Impacts would be avoided through on-site protection in Environmentally Sensitive Areas. • Other foreseeable future projects could result in significant adverse cumulative impacts.
Special-status plants: other	<ul style="list-style-type: none"> • Project will impact occurrences of small-flowered androstephium; no specific mitigation required for this impact due to discovery of numerous occurrences of small-flowered androstephium in the project vicinity in recent years, but mitigation for other plant species assumed to reduce this impact. • Five additional BLM sensitive plants have some potential to occur on the project site, but have not been documented. If documented during pre-project surveys, BLM would determine the level of avoidance that is needed. • Project would result in direct and indirect short-term and long-term impacts on special status species due to the reduction, fragmentation and degradation of suitable habitats on the project site and in the immediate vicinity. • Project required to implement mitigation measures including the avoidance and protection of special-status plant occurrences on either the project site or acquired lands off-site, or a combination of the two. • Incremental contribution to an adverse cumulative impact to small-flowered 	<ul style="list-style-type: none"> • Project will impact occurrences of small-flowered androstephium; no specific mitigation required for this impact due to discovery of numerous occurrences of small-flowered androstephium in the project vicinity in recent years, but mitigation for other plant species assumed to reduce this impact. • Five additional BLM sensitive plants have some potential to occur on the project site, but have not been documented. If documented during pre-project surveys, BLM would determine the level of avoidance that is needed. • Project would result in direct and indirect short-term and long-term impacts on special status species due to the reduction, fragmentation and degradation of suitable habitats on the project site and in the immediate vicinity. • The magnitude of impacts to special status plant species will be reduced as compared to the FEIS Agency Preferred Alternative due to the reduction in the project size. • Project required to implement mitigation measures including the avoidance and protection of special-status plant occurrences on either the project site or 	<ul style="list-style-type: none"> • <u>Impact to special status plant species same as the Approved Project as same footprint and same avoidance and mitigation measures required.</u> • Project will impact occurrences of small-flowered androstephium; no specific mitigation required for this impact due to discovery of numerous occurrences of small-flowered androstephium in the project vicinity in recent years, but mitigation for other plant species assumed to reduce this impact. • Five additional BLM sensitive plants have some potential to occur on the project site, but have not been documented. If documented during pre-project surveys, BLM would determine the level of avoidance that is needed. Additional surveys conducted in the fall of 2010 did not identify any additional special status plant species. • Project would result in direct and indirect short-term and long-term impacts on special status species due to the reduction, fragmentation and degradation of suitable habitats on the project site and in the immediate vicinity. • The magnitude of impacts to special status plant species will be reduced as compared to the FEIS Agency Preferred Alternative due to

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Biological Resources			
	androstephium.	<p>acquired lands off-site, or a combination of the two.</p> <ul style="list-style-type: none"> Incremental contribution to an adverse cumulative impact to small-flowered androstephium. 	<p>the reduction in the project size.</p> <ul style="list-style-type: none"> Project required to implement mitigation measures including the avoidance and protection of special-status plant occurrences on either the project site or acquired lands off-site, or a combination of the two. Incremental contribution to an adverse cumulative impact to small-flowered androstephium.
Special-status reptiles: banded Gila monster	<ul style="list-style-type: none"> Impacts to banded Gila monster are not likely to occur based on the low potential for this species to occur on the site. If individuals are present, direct impacts would likely occur but such impacts would be minimized and mitigated through the implementation of project specific mitigation measures. Could result in incremental contribution to cumulative adverse impacts. 	<ul style="list-style-type: none"> Impacts to banded Gila monster are not likely to occur based on the low potential for this species to occur on the site. If individuals are present, direct impacts would likely occur but such impacts would be minimized and mitigated through the implementation of project specific mitigation measures. Magnitude of potential impact to banded Gila monster would be reduced as compared to the FEIS Agency Preferred Alternative due to the reduction in the project size. Could result in incremental contribution to cumulative adverse impacts. 	<ul style="list-style-type: none"> <u>Impacts to banded Gila monster same as the Approved Project as the footprint is the same.</u> Impacts to banded Gila monster are not likely to occur based on the low potential for this species to occur on the site. If individuals are present, direct impacts would likely occur but such impacts would be minimized and mitigated through the implementation of project specific mitigation measures. Magnitude of potential impact to banded Gila monster would be reduced as compared to the FEIS Agency Preferred Alternative due to the reduction in the project size. Could result in incremental contribution to cumulative adverse impacts.
Special-status reptiles: desert tortoise	<ul style="list-style-type: none"> Project would result in the loss of 6,215 acres of desert tortoise habitat including areas of high quality habitat. Project estimated to affect 107 tortoises and 436 eggs. Desert tortoise found within the project site would be translocated pursuant to the terms of a final Desert Tortoise Translocation Plan approved by the BLM and wildlife agencies. Disease testing would be conducted on translocated desert tortoise and desert tortoise located in the translocation receptor sites; monitoring of control site will be conducted. Translocation of desert tortoise to critical habitat in Ord-Rodman could adversely 	<ul style="list-style-type: none"> Approved Project would result in the loss of 4,613 acres of desert tortoise habitat. Approved Project avoids high-value habitat impacted by the FEIS Agency Preferred Alternative. Approved Project estimated to affect an estimated 22 tortoises and 56 eggs. Translocation same as under the FEIS Agency Preferred Alternative, although number of tortoises translocated will be substantially reduced. Disease testing same as under the FEIS Agency Preferred Alternative, although number of tortoises tested would be significantly reduced. Translocation of desert tortoise to critical habitat in Ord-Rodman could adversely 	<ul style="list-style-type: none"> <u>Impacts to desert tortoise same as the Approved Project because footprint unchanged and entire site will be fenced; if Service requires changes to the translocation plan, additional analysis may be required.</u> Like the Approved Project, the Amended Project would result in the loss of 4,613 acres of desert tortoise habitat. Amended Project also avoids high-value habitat impacted by the FEIS Agency Preferred Alternative. Like the Approved Project, Amended Project estimated to affect an estimated 22 tortoises and 56 eggs. Translocation same as under the FEIS Agency Preferred Project, although numbers of tortoises translocated will be substantially

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Biological Resources			
	<p>affect the critical habitat, although disease testing and limitations on translocation density levels would ensure that this habitat is not adversely modified.</p> <ul style="list-style-type: none"> • Project would create a barrier to north-south movement and could limit east-west movement. • Applicant to provided compensatory mitigation to offset impacts. • Incremental contribution to significant cumulative adverse impacts on desert tortoise habitat and connectivity. 	<p>affect the critical habitat, although disease testing and limitations on translocation density levels would ensure that this habitat is not adversely modified.</p> <ul style="list-style-type: none"> • Approved Project allows for a 6,865-foot wide desert tortoise linkage area between the north project boundary and the Cady Mountains, reducing impact to regional east-west linkages as compared to FEIS Agency Preferred Alternative. • Compensatory mitigation required to offset impacts. • Incremental contribution to significant cumulative adverse impacts on desert tortoise habitat and connectivity. 	<p>reduced.</p> <ul style="list-style-type: none"> • Disease testing same as under the FEIS Agency Preferred Alternative; although number of tortoises tested would be significantly reduced. • Translocation of desert tortoise to critical habitat in Ord-Rodman could adversely affect the critical habitat, although disease testing and limitations on translocation density levels would ensure that this habitat is not adversely modified. • Amended Project allows for a 6,865-foot wide desert tortoise linkage area between the north project boundary and the Cady Mountains, reducing impact to regional east-west linkages as compared to FEIS Agency Preferred Alternative. • Compensatory mitigation required to offset impacts. • Incremental contribution to significant cumulative adverse impacts on desert tortoise habitat and connectivity.
Special-status reptiles: Mojave fringe-toed lizard	<ul style="list-style-type: none"> • Project would directly impact Mojave fringe-toed lizard through habitat loss, mortality, injury, or harassment of individuals as a result of encounters with vehicles or heavy equipment; disturbance from increased vehicular and human presence on the project site; and displacement due to habitat loss or displacement. • Project would indirectly impact Mojave fringe-toed lizard on-going project related disturbance and habitat degradation. • Increased predation could occur through placement of features that could provide roosting opportunities for avian predators. • Placement of project features, particularly drainage features including detention basins could alter sand transport and could reduce connectivity with other occupied habitats in project vicinity. 	<ul style="list-style-type: none"> • Approved Project would directly impact Mojave fringe-toed lizard through habitat loss, mortality, injury, or harassment of individuals as a result of encounters with vehicles or heavy equipment; disturbance from increased vehicular and human presence on the project site; and displacement due to habitat loss or displacement. Approved Project would impact the same Mojave fringe-toes lizard habitat as the FEIS Agency Preferred Alternatives. • Project would indirectly impact Mojave fringe-toed lizard on-going project related disturbance and habitat degradation. • Increased predation could occur through placement of features that could provide roosting opportunities for avian predators. • Placement of project features could alter sand transport although the removal of the 	<ul style="list-style-type: none"> • <u>Impacts to Mojave fringe-toed lizard same as the Approved Project because footprint.</u> • Project would directly impact Mojave fringe-toed lizard through habitat loss, mortality, injury, or harassment of individuals as a result of encounters with vehicles or heavy equipment; disturbance from increased vehicular and human presence on the project site; and displacement due to habitat loss or displacement. Amended Project would impact the same Mojave fringe-toed lizard habitat as the FEIS Agency Preferred Alternative and the Approved Project. • Project would indirectly impact Mojave fringe-toed lizard on-going project related disturbance and habitat degradation. • Potential increase for predation decreased as compared to FEIS Agency Preferred Alternative and Approved Project due to the reduction in transmission towers thereby

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Biological Resources			
	<ul style="list-style-type: none"> • Compensatory mitigation required. • Incremental contribution to potentially significant adverse cumulative impacts. 	<p>detention basis likely reduces this impact as compared to the FEIS Agency Preferred Alternative.</p> <ul style="list-style-type: none"> • Potential impact to connectivity likely reduced by increase in set back from the railroad as compared to the FEIS Agency Preferred Alternative. • Compensatory mitigation required as under the FEIS Agency Preferred Alternative. • Incremental contribution to potentially significant adverse cumulative impacts. 	<p>reducing roosting opportunities for avian predators.</p> <ul style="list-style-type: none"> • Placement of project features could alter sand transport although the removal of the detention basis likely reduces this impact as compared to the FEIS Agency Preferred Alternative. • Potential impact to connectivity likely reduced by increase in set back from the railroad as compared to the FEIS Agency Preferred Alternative. • Compensatory mitigation required as under the FEIS Agency Preferred Alternative. • Incremental contribution to potentially significant adverse cumulative impacts.
Special-status birds: Bendire's thrasher	<ul style="list-style-type: none"> • Project would impact 6,215 acres of potential nesting and foraging habitat for the Bendire's thrasher. • Project noise and visual disturbance has the potential to disrupt foraging or breeding activities. • Project would create potential for collision with SunCatchers or other above-ground structures on the project site. • Project required to conduct pre-construction nesting surveys and avoid active nests. Project also required to develop and implement an Avian Protection Plan. • Incremental contribution to cumulative adverse impacts. 	<ul style="list-style-type: none"> • Project would impact 4,613 acres of potential nesting and foraging habitat for the Bendire's thrasher, a reduced impact as compared to the FEIS Agency Preferred Alternative. • Project noise and visual disturbance has the potential to disrupt foraging or breeding activities, although this impact would be less than under the FEIS Agency Preferred Alternative due to the reduction in project size. • Project would create potential for collision with SunCatchers or other above-ground structures on the project site, although this impact would be less than under the FEIS Agency Preferred Alternative due to the reduction in project size. • Project required to conduct pre-construction nesting surveys and avoid active nests. Project also required to develop and implement an Avian Protection Plan. • Incremental contribution to cumulative adverse impacts. 	<ul style="list-style-type: none"> • <u>Impact to Bendire's thrasher same as or less than the Approved Project; Project footprint unchanged but reduction in project noise and lower profile of PV models could reduce impacts.</u> • Like the Approved Project, the Amended Project would impact 4,613 acres of potential nesting and foraging habitat for the Bendire's thrasher, a reduced impact as compared to the FEIS Agency Preferred Alternative. • Project noise and visual disturbance has the potential to disrupt foraging or breeding activities, although this impact would be less than under the FEIS Agency Preferred Alternative due to the reduction in project size. Impact would also be less than the Approved Project given the significant reduction in the number of SunCatchers, reducing operational noise. • Project would create potential for collision with SunCatchers or other above-ground structures on the project site, although this impact would be less than under the FEIS Agency Preferred Alternative due to the reduction in project size. Impact would also be less than the Approved Project given the substitution of a significant number of

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Biological Resources			
			<p>SunCatchers with PV tracker blocks which are significantly closer to the ground.</p> <ul style="list-style-type: none"> Project required to conduct pre-construction nesting surveys and avoid active nests. Project also required to develop and implement an Avian Protection Plan. Incremental contribution to cumulative adverse impacts.
Special-status birds: burrowing owl	<ul style="list-style-type: none"> Burrowing owls known to occur on site, and Project would directly impact this species through alteration of 6,215 acres of suitable foraging, nesting and sheltering habitat. There is a potential for burrowing owl mortality as a result of collapsing of burrows during project construction, although this impact will be minimized through pre-construction surveys and required avoidance measures. Increased noise and visual disturbance on the site could directly or indirectly impact burrowing owls by causing displacement and/or interruption of normal breeding, feeding and foraging behavior. Although burrowing owls can tolerate some level of human activity, alteration of habitat and expected noise level associated with operation of SunCatcher engines may preclude continued use of the site. Applicant required to implement project specific avoidance and minimization measures and provide compensatory mitigation lands for any displaced burrowing owls. Incremental contribution to potentially significant cumulative adverse impacts. 	<ul style="list-style-type: none"> Burrowing owls known to occur on site, and Approved Project would directly impact this species through alteration of 4,613 acres of suitable foraging, nesting and sheltering habitat, which represents a reduction in impacts as compared to the FEIS Agency Preferred Alternative. There is a potential for burrowing owl mortality as a result of collapsing of burrows during project construction, although this impact will be minimized through pre-construction surveys and required avoidance measures. Increased noise and visual disturbance on the site could directly or indirectly impact burrowing owls by causing displacement and/or interruption of normal breeding, feeding and foraging behavior. Although burrowing owls can tolerate some level of human activity, alteration of habitat and expected noise level associated with operation of SunCatcher engines may preclude continued use of the site. Applicant required to implement project specific avoidance and minimization measures and provide compensatory mitigation lands for any displaced burrowing owls. Incremental contribution to potentially significant cumulative adverse impacts. 	<ul style="list-style-type: none"> <u>Impact to burrowing owl same as or less than Approved Project because footprint is unchanged but reduction in project noise levels could reduce impact.</u> As with the Approved Project, Burrowing owls known to occur on site, and Amended Project would directly impact this species through alteration of 4,613 acres of suitable foraging, nesting and sheltering habitat, which represents a reduction in impacts as compared to the FEIS Agency Preferred Alternative. There is a potential for burrowing owl mortality as a result of collapsing of burrows during project construction, although this impact will be minimized through pre-construction surveys and required avoidance measures. Increased noise and visual disturbance on the site could directly or indirectly impact burrowing owls by causing displacement and/or interruption of normal breeding, feeding and foraging behavior. Although burrowing owls can tolerate some level of human activity, alteration of habitat and expected noise level associated with operation of SunCatcher engines may preclude continued use of the site. It is anticipated that this impact will be reduced under the Amended Project due to the decrease in the number of SunCatchers. Applicant required to implement project specific avoidance and minimization measures and provide compensatory mitigation lands for any displaced burrowing owls.

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Biological Resources			
Special-status birds: golden eagle	<ul style="list-style-type: none"> Project is not anticipated to disturb any nesting eagles. Project would result in loss of 6,215 acres of potential foraging habitat. Given the amount of potential foraging habitat in the area and known nest locations, this loss would not be large enough to affect the breeding success of eagles in the project vicinity. While golden eagles could potentially forage between the SunCatchers, the noise generated by the SunCatchers and human activity would likely preclude this use. If foraging continues, collision with SunCatchers and other above-ground structures could occur. Applicant required to develop and implement an Avian Protection Plan to avoid and minimize impacts to golden eagle. Incremental contribution to potentially significant cumulative impact through the loss of foraging habitat. 	<ul style="list-style-type: none"> Approved Project is not anticipated to disturb any nesting eagles. Approved Project would result in loss of 4,613 acres of potential foraging habitat. Given the amount of potential foraging habitat in the area and known nest locations, this loss would not be large enough to affect the breeding success of eagles in the project vicinity. Further, this represents a reduction in impacts as compared to the FEIS Agency Preferred Alternative. While golden eagles could potentially forage between the SunCatchers, the noise generated by the SunCatchers and human activity would likely preclude this use. If foraging continues, collision with SunCatchers and other above-ground structures could occur. Applicant required to develop and implement an Avian Protection Plan to avoid and minimize impacts to golden eagle. Incremental contribution to potentially significant cumulative impact through the loss of foraging habitat. 	<ul style="list-style-type: none"> Incremental contribution to potentially significant cumulative adverse impacts. <u>Impacts to golden eagle same as the Approved Project same foraging habitat will be impacted.</u> As with the Approved Project, Amended Project is not anticipated to disturb any nesting eagles. As with the Approved Project, Amended Project would result in loss of 4,613 acres of potential foraging habitat. Given the amount of potential foraging habitat in the area and known nest locations, this loss would not be large enough to affect the breeding success of eagles in the project vicinity. Further, this represents a reduction in impacts as compared to the FEIS Agency Preferred Alternative. While golden eagles could potentially forage between the SunCatchers, the noise generated by the SunCatchers and human activity would likely preclude this use. Eagles may forage between PV tracker blocks which do not make noise, but human activity may discourage this use. If foraging continues, collision with SunCatchers and other above-ground structures could occur. Reduction of SunCatchers and installation of lower PV tracker blocks would likely reduce potential for collision. Applicant required to develop and implement an Avian Protection Plan to avoid and minimize impacts to golden eagle. Incremental contribution to potentially significant cumulative impact through the loss of foraging habitat.
Special-status birds: Le Conte's thrasher	<ul style="list-style-type: none"> Le Conte's Thrasher is present on the site, and Project would directly impact this species through alteration of 6,215 acres of suitable foraging, nesting and sheltering habitat. Increased noise and visual disturbance on 	<ul style="list-style-type: none"> Le Conte's Thrasher is present on the site, and Approved Project would directly impact this species through alteration of 4,613 acres of suitable foraging, nesting and sheltering habitat. This represents a reduction in impact as compared to the 	<ul style="list-style-type: none"> <u>Impact to Le Conte's Thrasher is same as or less than the Approved Project Because footprint is unchanged.</u> Le Conte's Thrasher is present on the site, and like the Approved Project, the Amended Project would directly impact this species

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Biological Resources			
	<p>the site could directly or indirectly impact Le Conte's thrasher by causing displacement and/or interruption of normal breeding, feeding and foraging behavior.</p> <ul style="list-style-type: none"> • Applicant required to implement project specific avoidance and minimization measures and provide compensatory mitigation lands for any displaced Le Conte's thrashers. • Incremental contribution to potentially significant cumulative adverse impacts. 	<p>FEIS Agency Preferred Alternative.</p> <ul style="list-style-type: none"> • Increased noise and visual disturbance on the site could directly or indirectly impact Le Conte's thrasher by causing displacement and/or interruption of normal breeding, feeding and foraging behavior. • Applicant required to implement project specific avoidance and minimization measures and provide compensatory mitigation lands for any displaced Le Conte's thrashers. • Incremental contribution to potentially significant cumulative adverse impacts. 	<p>through alteration of 4,613 acres of suitable foraging, nesting and sheltering habitat. This represents a reduction in impact as compared to the FEIS Agency Preferred Alternative.</p> <ul style="list-style-type: none"> • Increased noise and visual disturbance on the site could directly or indirectly impact Le Conte's thrasher by causing displacement and/or interruption of normal breeding, feeding and foraging behavior. It is anticipated that this impact would be lessened as a result of the reduction in the number of SunCatchers, reducing the amount of operational noise as compared to the Approved Project. • Applicant required to implement project specific avoidance and minimization measures and provide compensatory mitigation lands for any displaced Le Conte's thrashers. • Incremental contribution to potentially significant cumulative adverse impacts.
Special-status birds: mountain plover	<ul style="list-style-type: none"> • Mountain Plover has not been documented on the site and likelihood of occurrence is considered low. Only negligible direct and indirect, short-term and long-term adverse impacts on mountain plovers are anticipated. • Negligible contribution to cumulative adverse impacts. 	<ul style="list-style-type: none"> • Mountain Plover has not been documented on the site and likelihood of occurrence is considered low. Only negligible direct and indirect, short-term and long-term adverse impacts on mountain plovers are anticipated. • Negligible contribution to cumulative adverse impacts. 	<ul style="list-style-type: none"> • <u>Impact to Mountain Plover same as the Approved Project and continues to be negligible on this site.</u> • Mountain Plover has not been documented on the site and likelihood of occurrence is considered low. Only negligible direct and indirect, short-term and long-term adverse impacts on mountain plovers are anticipated. • Negligible contribution to cumulative adverse impacts.
Special-status birds: Swainson's hawk	<ul style="list-style-type: none"> • Swainson's hawk is not anticipated to nest on the project site or in the immediate project vicinity. • Alteration of the 6,215 acres site could result in some potential impacts to foraging habitat. • Implementation of mitigation measures would reduce the direct and indirect short-term and long-term impacts to Swainson's hawk to a negligible level. • Incremental contribution to potentially significant cumulative impact through the 	<ul style="list-style-type: none"> • Swainson's hawk is not anticipated to nest on the project site or in the immediate project vicinity. • Alteration of the 4,613 acres Approved Project site could result in some potential impacts to foraging habitat. This impact would be less than the FEIS Agency Preferred Alternative. • Implementation of mitigation measures would reduce the direct and indirect short-term and long-term impacts to Swainson's hawk to a negligible level. 	<ul style="list-style-type: none"> • <u>Impact to Swainson's hawk same as the Approved Project because footprint is unchanged and same potential foraging habitat impacted.</u> • Swainson's hawk is not anticipated to nest on the project site or in the immediate project vicinity. • Like the Approved Project, alteration of the 4,613 acre Amended Project site could result in some potential impacts to foraging habitat. This impact would be less than the FEIS Agency Preferred Alternative.

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Biological Resources			
	loss of foraging habitat.	<ul style="list-style-type: none"> Incremental contribution to potentially significant cumulative impact through the loss of foraging habitat. 	<ul style="list-style-type: none"> Implementation of mitigation measures would reduce the direct and indirect short-term and long-term impacts to Swainson's hawk to a negligible level. Incremental contribution to potentially significant cumulative impact through the loss of foraging habitat.
Special-status mammals: American badger	<ul style="list-style-type: none"> American badgers are present on the project site. Installation of desert tortoise exclusion fences would eliminate use of badger habitat on the 6,215 acres site. Any American badger located on the site could be directly impacted by construction activities. American badger may be indirectly impacted by introduction of nonnative or invasive plant species and loss or alteration of prey base. Placement of fencing, transmission towers, and other above-ground structures could also providing roosting opportunities for avian predators. Pre-construction surveys would be conducted and any occupied den would be avoided. Incremental contribution to cumulative adverse impacts. 	<ul style="list-style-type: none"> American badgers are present on the project site. Installation of desert tortoise exclusion fences would eliminate use of badger habitat on the 4,613 acres Approved Project site. This represents a reduction in impacts as associated with the FEIS Agency Preferred Alternative. Any American badger located on the site could be directly impacted by construction activities. American badger may be indirectly impacted by introduction of nonnative or invasive plant species and loss or alteration of prey base. Placement of fencing, transmission towers, and other above-ground structures could also providing roosting opportunities for avian predators. Pre-construction surveys would be conducted and any occupied den would be avoided. Incremental contribution to cumulative adverse impacts. 	<ul style="list-style-type: none"> <u>Impact to American badger is the same as or less than the Approved Project because same footprint and same area fenced.</u> American badgers are present on the project site. Like the Approved Project, installation of desert tortoise exclusion fences would eliminate use of badger habitat on the 4,613 acres Amended Project site. This represents a reduction in impacts as associated with the FEIS Agency Preferred Alternative. Any American badger located on the site could be directly impacted by construction activities. American badger may be indirectly impacted by introduction of nonnative or invasive plant species and loss or alteration of prey base. Placement of fencing, transmission towers, and other above-ground structures could also providing roosting opportunities for avian predators; this impact will be reduced due to the reduction in number of transmission towers. Pre-construction surveys would be conducted and any occupied den would be avoided. Incremental contribution to cumulative adverse impacts.
Special-status mammals: desert kit fox	<ul style="list-style-type: none"> Desert kit fox are present on the project site. Installation of desert tortoise exclusion fences would eliminate continued use of desert kit fox habitat on the 6,215 acres site. Any desert kit fox located on the site 	<ul style="list-style-type: none"> Desert kit fox are present on the project site. Installation of desert tortoise exclusion fences would eliminate continued use of desert kit fox habitat on the 4,613 acre Approved Project site. Any desert kit fox located on the site could be directly impacted by construction 	<ul style="list-style-type: none"> <u>Impact to desert kit fox same as or less than the Approved Project because footprint is unchanged.</u> Desert kit fox are present on the project site. As with the Approved Project Installation of desert tortoise exclusion fences would eliminate continued use of desert kit fox

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Biological Resources			
	<p>could be directly impacted by construction activities.</p> <ul style="list-style-type: none"> Desert kit fox may be indirectly impacted by soil compaction, introduction of nonnative or invasive plant species and loss or alteration of prey base. Placement of fencing, transmission towers, and other above-ground structures could also providing roosting opportunities for avian predators. Pre-construction surveys would be conducted and any occupied den would be avoided. Incremental contribution to cumulative adverse impacts. 	<p>activities.</p> <ul style="list-style-type: none"> Desert kit fox may be indirectly impacted by soil compaction, introduction of nonnative or invasive plant species and loss or alteration of prey base. Placement of fencing, transmission towers, and other above-ground structures could also providing roosting opportunities for avian predators. Pre-construction surveys would be conducted and any occupied den would be avoided. Incremental contribution to cumulative adverse impacts. 	<p>habitat on the 4,613 acre Amended Project site.</p> <ul style="list-style-type: none"> Any desert kit fox located on the site could be directly impacted by construction activities. Desert kit fox may be indirectly impacted by soil compaction, introduction of nonnative or invasive plant species and loss or alteration of prey base. Placement of fencing, transmission towers, and other above-ground structures could also providing roosting opportunities for avian predators; this impact would be reduced due to the decrease in the number of transmission towers. Pre-construction surveys would be conducted and any occupied den would be avoided. Incremental contribution to cumulative adverse impacts.
Special-status mammals: Nelson's bighorn sheep	<ul style="list-style-type: none"> Project would avoid impacts to year-round occupied Nelson bighorn sheep habitat but would impact approximately 1,078 acres of spring foraging habitat along the south side of the Cady Mountain. Direct and indirect impacts may occur as a result of disturbance from construction and maintenance activities, noise and lighting. Project could result in an additional impediment to north-south movement by Nelson's bighorn sheep. Monitoring will be required during project construction, and project construction activities would be halted if bighorn sheep come within 500 feet of construction activity. Incremental contribution to the cumulative loss of foraging habitat in the Cady Mountains and significant adverse cumulative impacts on populations in the West Mojave Planning Area. 	<ul style="list-style-type: none"> The Approved Project avoids Nelson's Bighorn Sheep habitat. The reduced size of the Approved Project would eliminate impacts to 1,602 acres of wildlife habitat for bighorn sheep along the foothills of the Cady Mountains that were included in the FEIS Proposed Action. Indirect impacts could occur as a result of construction activities. Approved Project could result in an additional impediment to north-south movement by Nelson's bighorn sheep. Monitoring will be required during project construction, and project construction activities would be halted if bighorn sheep come within 500 feet of construction activity. Incremental contribution to adverse cumulative impacts on the populations in the West Mojave Planning Area. 	<ul style="list-style-type: none"> <u>Impact to Nelson's bighorn sheep same as the Approved Project because footprint is unchanged.</u> Like the Approved Project, the Amended Project avoids Nelson's Bighorn Sheep habitat. The reduced size of the Approved Project would eliminate impacts to 1,602 acres of wildlife habitat for bighorn sheep along the foothills of the Cady Mountains that were included in the FEIS Proposed Action. Indirect impacts could occur as a result of construction activities. Amended Project could result in an additional impediment to north-south movement by Nelson's bighorn sheep. Monitoring will be required during project construction, and project construction activities would be halted if bighorn sheep come within 500 feet of construction activity. Incremental contribution to adverse cumulative impacts on the population in the West Mojave Planning Area.

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Biological Resources			
Special-status mammals: special-status bats	<ul style="list-style-type: none"> • Project could result in negligible short-term and long-term adverse impacts on special-status bats that forage over the project site. • Project would develop and implement a Bat Protection Plan to address potential impacts. • Incremental contribution to cumulative adverse impacts. 	<ul style="list-style-type: none"> • Project could result in negligible short-term and long-term adverse impacts on special-status bats that forage over the project site. Reduction in project size would also reduce potential impacts to special status bats as compared to the FEIS Agency Preferred Alternative. • Project would develop and implement a Bat Protection Plan to address potential impacts. • Incremental contribution to cumulative adverse impacts. 	<ul style="list-style-type: none"> • <u>Impacts to special status bats same as the Approved Project; impact remains negligible at this site.</u> • Project could result in negligible short-term and long-term adverse impacts on special-status bats that forage over the project site. Reduction in project size would also reduce potential impacts to special status bats as compared to the FEIS Agency Preferred Alternative. • Project would develop and implement a Bat Protection Plan to address potential impacts. • Incremental contribution to cumulative adverse impacts.

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Climate Control	<ul style="list-style-type: none"> • Minor contributions to GHG emissions from construction activities, natural gas use, operation of maintenance vehicles, and solid waste disposal. • Minor reduction of soil carbon sequestration from disturbance of soils and removal of vegetation over 6,215 acres. • Overall long-term, beneficial direct and indirect impacts due to a net reduction in GHG emissions across the electricity system. • Incremental contribution to cumulative beneficial impacts. 	<ul style="list-style-type: none"> • Minor contributions to GHG emissions from construction activities, natural gas use, operation of maintenance vehicles, and solid waste disposal. • Minor reduction of soil carbon sequestration from disturbance of soils and removal of vegetation over 4,604 acres. Reduction in project size would reduce potential impacts from loss of soil carbon sequestration as compared to the FEIS Agency Preferred Alternative. • Overall long-term, beneficial direct and indirect impacts due to a net reduction in GHG emissions across the electricity system. • Incremental contribution to cumulative beneficial impacts. 	<ul style="list-style-type: none"> • <u>Climate change impacts same as the Approved Project.</u> • Minor contributions to GHG emissions from construction activities, natural gas use, operation of maintenance vehicles, and solid waste disposal. • Direct emissions would be less than or equal to the Approved Project because fewer workers and the ability to pack cargo more efficiently will reduce the expected truck trip as compared to the Approved Project. • Minor reduction of soil carbon sequestration from disturbance of soils and removal of vegetation over 4,604 acres. Reduction in project size would reduce potential impacts from loss of soil carbon sequestration as compared to the FEIS Agency Preferred Alternative. • Overall long-term, beneficial direct and indirect impacts due to a net reduction in GHG emissions across the electricity system. • Incremental contribution to cumulative beneficial impacts.

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Cultural Resources and Paleontology			
	<ul style="list-style-type: none"> • 332 cultural resources are present on the site. • None of the on-site cultural resources have the potential for listing on the National Register of Historic Places. • Possibility of increased vandalism or illegal collection of artifacts due to improved human access to the resources. • Possibility of destruction of resources by vehicles travelling on the site during construction and operation. • Construction and decommissioning activities and increased human access may result in permanent long-term adverse direct, indirect, and cumulative impacts on the cultural resources. • Potential indirect adverse visual effect on historic Route 66. • Incremental contribution to cumulative indirect impacts including increased vandalism, illegal collection of artifacts, and/or destruction of resources by vehicles. 	<ul style="list-style-type: none"> • None of the on-site cultural resources have the potential for listing on the National Register of Historic Places; reduced number of cultural resources present on site as compared to FEIS Agency Preferred Alternative due to reduction in project size. • As a result of CEC concerns that subsurface components of cultural resources found on the site could change eligibility determination, BLM and SHPO executed a Programmatic Agreement on September 21, 2010 outlying process for addressing cultural resources on site. • Reduction in project size as compared to the FEIS Agency Preferred Alternative would reduce the impacts from possible increased vandalism or illegal collection of artifacts due to improved human access to the resources. • Reduction in project size and corresponding reduction in vehicles used as compared to the FEIS Agency Preferred Alternative would reduce the impacts from possible destruction of resources by vehicles travelling on the site during construction and operation. • Construction and decommissioning activities and increased human access may result in permanent long-term adverse direct, indirect, and cumulative impacts on the cultural resources. • Mitigation for indirect impacts to historic Route 66 addressed in the Programmatic Agreement. • Incremental contribution to cumulative indirect impacts including increased vandalism, illegal collection of artifacts, and/or destruction of resources by vehicles. 	<ul style="list-style-type: none"> • <u>Direct impacts to cultural resources same as the Approved Project because footprint unchanged and same minimization measures required; indirect visual impacts to Route 66 reduced due to reduction in profile of PV portion of the project..</u> • None of the on-site cultural resources have the potential for listing on the National Register of Historic Places; reduced number of cultural resources present on site as compared to FEIS Agency Preferred Alternative due to reduction in project size. • As a result of CEC concerns that subsurface components of cultural resources found on the site could change eligibility determination, BLM and SHPO executed a Programmatic Agreement on September 21, 2010 outlying process for addressing cultural resources on site. • Reduction in project size as compared to the FEIS Agency Preferred Alternative would reduce the impacts from possible increased vandalism or illegal collection of artifacts due to improved human access to the resources. • Reduction in project size and corresponding reduction in vehicles used as compared to the FEIS Agency Preferred Alternative would reduce the impacts from possible destruction of resources by vehicles travelling on the site during construction and operation. • Construction and decommissioning activities and increased human access may result in permanent long-term adverse direct, indirect, and cumulative impacts on the cultural resources. • <u>Indirect visual impacts to historic Route 66 will be lessened due to the fact that the PV panels at a 45° tilt are on average 9 feet above ground whereas the SunCatchers are on average 40 feet tall; mitigation for indirect impacts to historic Route 66</u>

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Cultural Resources and Paleontology			
			<p>addressed in the Programmatic Agreement.</p> <ul style="list-style-type: none"> • Incremental contribution to cumulative indirect impacts including increased vandalism, illegal collection of artifacts, and/or destruction of resources by vehicles.

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Fire and Fuels	<ul style="list-style-type: none"> • Removal of existing vegetation over 6,215 acres could reduce the potential for fire. • Possible introduction of invasive weeds that could alter the fire regime and increase fire frequency and intensity. • Invasive weed containment and control activities could reduce the potential for fire, but the opportunity for invasive species to infiltrate would remain high. • Highest potential for an increase in fire potential after project decommissioning due to the ground disturbing activities creating more favorable conditions for fire-tolerant invasive species. • Additional human use on the project site - up to 731 personnel during peak construction activities and approximately 136 full time personnel during operation - and additional human ignition sources would increase the fire potential in and around the project site. • Incremental contribution to cumulative adverse impacts. 	<ul style="list-style-type: none"> • Removal of existing vegetation over 4,613 acres could reduce the potential for fire. • Possible introduction of invasive weeds that could alter the fire regime and increase fire frequency and intensity. Reduction in project size as compared to the FEIS Agency Preferred Alternative would reduce impacts from the introduction of invasive weeds. • Invasive weed containment and control activities could reduce the potential for fire, but the opportunity for invasive species to infiltrate would remain high. • Highest potential for an increase in fire potential after project decommissioning due to the ground disturbing activities creating more favorable conditions for fire-tolerant invasive species. Reduction in area of disturbance would reduce this impact as compared to the FEIS Agency Preferred Alternative. • Reduction in project size and corresponding reduction in workforce would reduce fire potential from human ignition sources as compared to the FEIS Agency Preferred Alternative. • Incremental contribution to cumulative adverse impacts. 	<ul style="list-style-type: none"> • <u>Impact to fire regime in vicinity of the Project site would be the same as or less than the Approved Project; reduction could result from decrease in workforce and decrease in amount of hydrogen stored on site.</u> • Removal of existing vegetation over 4,613 acres could reduce the potential for fire. • Possible introduction of invasive weeds that could alter the fire regime and increase fire frequency and intensity. Reduction in project size as compared to the FEIS Agency Preferred Alternative would reduce impacts from the introduction of invasive weeds. • Invasive weed containment and control activities could reduce the potential for fire, but the opportunity for invasive species to infiltrate would remain high. • Highest potential for an increase in fire potential after project decommissioning due to the ground disturbing activities creating more favorable conditions for fire-tolerant invasive species. Reduction in area of disturbance would reduce this impact as compared to the Agency Preferred Alternative. • Reduction in project size and corresponding reduction in workforce would reduce fire potential from human ignition sources as compared to the FEIS Agency Preferred Alternative; Amended Project would have a peak construction work force of 351 and operation work force of 112. • The Amended Project would store much less hydrogen on-site than either the FEIS Agency Preferred Alternative or the Approved Project, and this reduction may decrease fire potential. • Incremental contribution to cumulative adverse impacts.

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Geology, Soils, and Mineral Resources			
Mineral resources	<ul style="list-style-type: none"> The project site does not have any economically viable mineral deposits. No direct, indirect, or cumulative impacts due to absence of mineral resources. 	<ul style="list-style-type: none"> The project site does not have any economically viable mineral deposits. No direct, indirect, or cumulative impacts due to absence of mineral resources. 	<ul style="list-style-type: none"> <u>Impacts to mineral resources same as the Approved Project; no impact associated with development of the site.</u> The project site does not have any economically viable mineral deposits. No direct, indirect, or cumulative impacts due to absence of mineral resources.
Soils	<ul style="list-style-type: none"> Clearing of vegetation and grading for project features would result in long-term disturbance to soils on 4,151 acres. Topsoil loss, loss of cryptobiotic soil and desert pavement, erosion, and compaction would result in diminished soil productivity. Short-term disturbance to soils on 4,337 acres from the installation of fence lines and buried hydrogen and water supply lines, and from temporary access roads. Incremental contribution to cumulative adverse impacts on soil resources. 	<ul style="list-style-type: none"> Reduction in project size would result in less clearing of vegetation and grading for project features, and long-term disturbance to soils on fewer acres as compared to the FEIS Agency Preferred Alternative. Approved Project would permanently disturb approximately 2,870 acres. Reduction in project size would result in less topsoil loss, less loss of cryptobiotic soil and desert pavement, less erosion, and less compaction as compared to the FEIS Agency Preferred Alternative. Impacts to soil productivity would therefore be less than under the FEIS Agency Preferred Alternative. Reduction in project size and corresponding reduction in total road length as compared to the FEIS Agency Preferred Alternative would result in less short-term disturbance to soils. Incremental contribution to cumulative adverse impacts on soil resources. 	<ul style="list-style-type: none"> <u>Impacts to soils will be less than the Approved Project due to slight reduction disturbance areas, reduction in length and number of roads, and reduction in maintenance traffic during operation.</u> As with the Approved Project, reduction in project size would result in less long-term disturbance to soils on fewer acres as compared to the FEIS Agency Preferred Alternative. Amended Project would permanently disturb approximately 2,783 acres, which represents a slight reduction from the Approved Project. Reduction in project size would result in less impacts to soil productivity than under the FEIS Agency Preferred Alternative. Under the Amended Project, the length and quantities of roads would be reduced as compared to the Approved Project and a majority of the maintenance access roads would be replaced with unimproved access points. The reduction in amount of improved roads as well as the road length would result in less short-term disturbance to soils as compared to the Approved Project. Revised soil loss calculations indicate that the estimated soil loss rates under the Amended Project, with the implementation of construction- and operation-phase BMPs, are in some cases less than but not significantly different from those expected under the Approved Project. Technology maintenance for the PV

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Geology, Soils, and Mineral Resources			
			<p>modules would be reduced in frequency compared to the SunCatchers, resulting in less traffic and ground disturbance than under the Approved Project.</p> <ul style="list-style-type: none"> Incremental contribution to cumulative adverse impacts on soil resources.
Geologic hazards	<ul style="list-style-type: none"> Potential for ground shaking is present, but can be affectively mitigated through facility design Low likelihood of volcanic eruptions. Negligible or non-existent potential for impacts from liquefaction, dynamic compaction, hydrocompaction, subsidence, expansive soils, or landslides No cumulative impacts related to geologic hazards. 	<ul style="list-style-type: none"> Potential for ground shaking is present, but can be affectively mitigated through facility design No occupied facilities would be situated within 50 feet of fault lines. Low likelihood of volcanic eruptions. Negligible or non-existent potential for impacts from liquefaction, dynamic compaction, hydrocompaction, subsidence, expansive soils, or landslides. No cumulative impacts related to geologic hazards. 	<ul style="list-style-type: none"> <u>Impacts related to geologic hazards same as the Approved Project because protect footprint is unchanged.</u> Potential for ground shaking is present, but can be affectively mitigated through facility design The new location of the main services complex will not increase or decrease risk from fault rupture, and the new locations of the primary facilities would not be in proximity to the known active fault traces. As with the Approved Project, no occupied facilities would be situated within 50 feet of fault lines. Low likelihood of volcanic eruptions. Negligible or non-existent potential for impacts from liquefaction, dynamic compaction, hydrocompaction, subsidence, expansive soils, or landslides. No cumulative impacts related to geologic hazards.

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Grazing and Wild Horses and Burros			
Agricultural lands	<ul style="list-style-type: none"> There are no agricultural lands on the project site. No direct, indirect, or cumulative impacts. 	<ul style="list-style-type: none"> There are no agricultural lands on the project site. No direct, indirect, or cumulative impacts. 	<ul style="list-style-type: none"> <u>Impact on agricultural lands same as Approved Project because project footprint is unchanged.</u> There are no agricultural lands on the project site. No direct, indirect, or cumulative impacts.
Grazing	<ul style="list-style-type: none"> Grazing is not currently occurring at the site. The present grazing vegetation is of low quality. Project would preclude future grazing access. Negligible direct, indirect, or cumulative impacts. 	<ul style="list-style-type: none"> Grazing is not currently occurring at the site. The present grazing vegetation is of low quality. Project would preclude future grazing access. The reduced project size would preclude less future grazing access than under the FEIS Agency Preferred Alternative. Negligible direct, indirect, or cumulative impacts. 	<ul style="list-style-type: none"> <u>Impact to grazing same as the Approved Project because project footprint is unchanged.</u> Grazing is not currently occurring at the site. The present grazing vegetation is of low quality. Project would preclude future grazing access. The area where future grazing would be precluded same as the Approved Project. Negligible direct, indirect, or cumulative impacts.
Wild horses and burros	<ul style="list-style-type: none"> No wild horses or burros have been observed at or near the project site, and are unlikely to occur within the project site. The project site is not within the boundaries of any established HAs or HMAs. Negligible direct, indirect, or cumulative impacts. 	<ul style="list-style-type: none"> No wild horses or burros have been observed at or near the project site, and are unlikely to occur within the project site. The project site is not within the boundaries of any established HAs or HMAs. Negligible direct, indirect, or cumulative impacts. 	<ul style="list-style-type: none"> <u>Impact to wild horses and burros same as the Approved Project because project footprint is unchanged.</u> No wild horses or burros have been observed at or near the project site, and are unlikely to occur within the project site. The project site is not within the boundaries of any established HAs or HMAs. Negligible direct, indirect, or cumulative impacts.

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Land Use	<ul style="list-style-type: none"> • Occupation and fencing of the project site would result in exclusion of other public uses besides solar power generation on 6,215 acres of previously open public land. • No current grazing leases, but project would preclude future grazing access. • Approximately 1,020 acres of donated and acquired lands would be disturbed. • The CDCA Plan would have to be amended. • Incremental contribution to cumulative adverse impacts. 	<ul style="list-style-type: none"> • Occupation and fencing of the project site would result in exclusion of other public uses besides solar power generation on 4,613 acres of previously open public land. • As compared to the FEIS Agency Preferred Alternative, the Approved Project would have less impacts on other public uses due to the reduced projects size. • No current grazing leases, but project would preclude future grazing access. • Approximately 96 acres of donated and acquired lands would be disturbed. Impacts to donated and acquired lands would therefore be reduced as compared to the FEIS Agency Preferred Alternative. • The CDCA Plan would have to be amended. • Incremental contribution to cumulative adverse impacts. 	<ul style="list-style-type: none"> • <u>Land use impacts same as the Approved Project because project footprint and type of use is unchanged.</u> • Occupation and fencing of the project site would result in exclusion of other public uses besides solar power generation on 4,613 acres of previously open public land. • As compared to the FEIS Agency Preferred Alternative, the Approved Project would have less impacts on other public uses due to the reduced projects size. • No current grazing leases, but project would preclude future grazing access. • Approximately 96 acres of donated and acquired lands would be disturbed. Impacts to donated and acquired lands would therefore be reduced as compared to the FEIS Agency Preferred Alternative. • As amended, the CDCA Plan allows for solar development on the project site. • Incremental contribution to cumulative adverse impacts.

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Noise and Vibration	<ul style="list-style-type: none"> • Construction activities, including possibly blasting and pile driving, will generate noise at residential receivers at levels that exceed the normal county limits, but will fall within an exemption for construction noise. • Construction of the project will only produce vibration perceivable off-site if pile drivers are used. • Normal operation of the plant will generate noise that exceeds the county noise level limits at sensitive receivers, but does not exceed the measured ambient level of noise at those receivers. • Ground borne vibration from operation will likely be undetectable outside the ROW, and there will be no perceptible airborne vibration during operation. • No cumulative impacts due to location of other potential projects in the region immediately surrounding the sensitive receivers for the project. 	<ul style="list-style-type: none"> • Construction activities, including possibly blasting and pile driving, will generate noise at residential receivers at levels that exceed the normal county limits, but will fall within an exemption for construction noise. • The reduction in the number of SunCatchers used will reduce construction noise as compared to the FEIS Agency Preferred Alternative; because the distance to the nearest sensitive receptor is unchanged, the impact is the same. • Construction of the project will only produce vibration perceivable off-site if pile drivers are used. • Normal operation of the plant will generate noise that exceeds the county noise level limits at sensitive receivers, but does not exceed the measured ambient level of noise at those receivers. • Ground borne vibration from operation will likely be undetectable outside the ROW, and there will be no perceptible airborne vibration during operation. • No cumulative impacts due to location of other potential projects in the region immediately surrounding the sensitive receivers for the project. 	<ul style="list-style-type: none"> • <u>Noise impacts will be less than the Approved Project due to partial substitution of PV modules for SunCatchers.</u> • Because the installation of PV tracker blocks uses less noisy construction equipment than SunCatchers, construction noise levels will be reduced. Noise at the nearest sensitive receptors will be reduced from 74 dBA Leq to 67 dBA Leq at SR1 and from 62 dBA Leq to 61 dBA Leq at SR2 (as compared to the Approved Project). While this level still exceeds the normal county limits, it falls within an exemption for construction noise. • Installation of SunCatchers will also require fewer employees and deliveries, thereby reducing the construct related traffic noise levels as compared to the Approved Project. • As with the Approved Project, construction of the project will only produce vibration perceivable off-site if pile drivers are used. • Operation of the PV technology will create substantially less noise than operation of SunCatchers; operational noises at the nearest sensitive receptors will be reduced (as compared to the Approved Project from 57 dBA Leq to < 45 dBA Leq at SR1 and from 52 dBA Leq to 48 dBA Leq at SR2. Operational traffic will also be decreased due to decrease in employees and projected deliveries. • Impacts associated with linear facilities will remain the same as under the Approved Project. • Ground borne vibration from operation will likely be undetectable outside the ROW, and there will be no perceptible airborne vibration during operation.

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Noise and Vibration			
			<ul style="list-style-type: none"> No cumulative impacts due to location of other potential projects in the region immediately surrounding the sensitive receivers for the project.

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Public Health and Safety and Hazardous Materials			
Hazardous materials	<ul style="list-style-type: none"> • Most of the hazardous materials on site would be stored in either solid form or in small quantities. • The hazardous materials would have low mobility, low vapor pressure, and/or low levels of toxicity. • During construction, hazardous materials would be transported to the facility via truck. Impacts due to spills or other releases would be limited to the site due to the small quantities of materials and the use of temporary containment berms. • Hydrogen - used as the working fluid in the SunCatcher engines - would be the only chemical to pose a risk of off-site impacts. • Risk of an on-site fire caused by hydrogen would be minimal. • Minimal potential for on-site and off-site direct and indirect impacts; no cumulative impacts. 	<ul style="list-style-type: none"> • Most of the hazardous materials on site would be stored in either solid form or in small quantities. • The hazardous materials would have low mobility, low vapor pressure, and/or low levels of toxicity. • During construction, hazardous materials would be transported to the facility via truck. Impacts due to spills or other releases would be limited to the site due to the small quantities of materials and the use of temporary containment berms. • The amount of hazardous materials that would be used during operation under the Approved Project (such as hydrogen, lubricating oils, mineral oils, and ethylene glycol) would decrease as compared to the FEIS Agency Preferred Alternative. • The reduction in the number of SunCatchers used as compared to the FEIS Agency Preferred Alternative would reduce the risk of off-site impacts caused by hydrogen. • The risk of an on-site fire caused by hydrogen would be less than under the FEIS Agency Preferred Alternative due to the reduction in number of SunCatchers. • Minimal potential for on-site and off-site direct and indirect impacts; no cumulative impacts. 	<ul style="list-style-type: none"> • <u>Impacts to public health and safety and hazardous materials are same as or less than the Approved Project; while types of hazardous waste and method for handling remain same, quantities will be reduced due to partial substitution of PV modules for SunCatchers.</u> • Most of the hazardous materials on site would be stored in either solid form or in small quantities. • The hazardous materials would have low mobility, low vapor pressure, and/or low levels of toxicity. • During construction, hazardous materials would be transported to the facility via truck. Impacts due to spills or other releases would be limited to the site due to the small quantities of materials and the use of temporary containment berms. • The amount of hazardous materials that would be used during operation under the Amended Project (such as hydrogen, lubricating oils, mineral oils, and ethylene glycol) would decrease as compared to the Approved Project. • The reduction in the number of SunCatchers used as compared to the Approved Project would substantially reduce the amount of hydrogen stored on site and would reduce the risk of off-site impacts caused by hydrogen. • The risk of an on-site fire caused by hydrogen would be less than under the Approved Project due to the reduction in number of SunCatchers. • Minimal potential for on-site and off-site direct and indirect impacts; no cumulative impacts.

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Public Health and Safety and Hazardous Materials			
Waste management	<ul style="list-style-type: none"> • Site preparation and construction would generate nonhazardous and hazardous wastes in solid and liquid forms. • Recyclable materials would be removed as needed to recycling facilities. • Nonrecyclable, non-hazardous materials would be disposed at a Class III landfill. • Decommissioning and removal of the facilities would generate additional solid waste. • Nonhazardous liquid wastes generated during construction would include stormwater runoff, sanitary waste, and wastewater with a high dissolved solids concentration. Waste water will be directed to on-site evaporation ponds; stormwater will be handled according applicable regulations; and sanitary waste will be directed to tanks. • Hazardous waste would be held on site for less than 90 days and would be transported off-site to a facility licensed to accept hazardous waste. • There are sufficient facilities in the area to handle the hazardous and non-hazardous waste that will be generated as part of the project. • No cumulative impacts due to modest quantities of waste, employment of waste recycling, and sufficient capacity of local treatment and disposal facilities. 	<ul style="list-style-type: none"> • Site preparation and construction would generate nonhazardous and hazardous wastes in solid and liquid forms. • Recyclable materials would be removed as needed to recycling facilities. • Nonrecyclable, non-hazardous materials would be disposed at a Class III landfill. • Decommissioning and removal of the facilities would generate additional solid waste. • Nonhazardous liquid wastes generated during construction would include stormwater runoff, sanitary waste, and wastewater with a high dissolved solids concentration. Waste water will be directed to on-site evaporation ponds; stormwater will be handled according applicable regulations; and sanitary waste will be directed to tanks. • Hazardous waste would be held on site for less than 90 days and would be transported off-site to a facility licensed to accept hazardous waste. • There are sufficient facilities in the area to handle the hazardous and non-hazardous waste that will be generated as part of the project. • The reduction in project size and corresponding reduction in SunCatchers would generate less waste during construction, operation and decommissioning than the FEIS Agency Preferred Alternative. • No cumulative impacts due to modest quantities of waste, employment of waste recycling, and sufficient capacity of local treatment and disposal facilities. 	<ul style="list-style-type: none"> • <u>Impacts resulting from waste management would be the same as the Approved Project as same types of waste materials generated and same treatment methods proposed.</u> • Site preparation and construction would generate nonhazardous and hazardous wastes in solid and liquid form. • Recyclable materials would be removed as needed to recycling facilities. • Nonrecyclable, non-hazardous materials would be disposed at a Class III landfill. • Decommissioning and removal of the facilities would generate additional solid waste. • Nonhazardous liquid wastes generated during construction would include stormwater runoff, sanitary waste, and wastewater with a high dissolved solids concentration. Waste water will be directed to on-site evaporation ponds; stormwater will be handled according applicable regulations; and sanitary waste will be directed to tanks. • Hazardous waste would be held on site for less than 90 days and would be transported off-site to a facility licensed to accept hazardous waste. • There are sufficient facilities in the area to handle the hazardous and non-hazardous waste that will be generated as part of the project. • No cumulative impacts due to modest quantities of waste, employment of waste recycling, and sufficient capacity of local treatment and disposal facilities.
Emergency response	<ul style="list-style-type: none"> • The project site is currently served by the SBCFD, which may need additional resources to provide adequate fire projection and emergency response services during construction and 	<ul style="list-style-type: none"> • The project site is currently served by the SBCFD, which may need additional resources to provide adequate fire projection and emergency response services during construction and operation. 	<ul style="list-style-type: none"> • <u>Impacts to emergency response same as the Approved Project as same location and anticipated needs.</u> • The project site is currently served by the SBCFD, which may need additional resources

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Public Health and Safety and Hazardous Materials			
	<p>operation.</p> <ul style="list-style-type: none"> No adverse direct or indirect impacts on emergency medical services or law enforcement are expected due to proposed safety procedures, employee training, proposed on-site security measures. Incremental contribution to adverse impacts on emergency response provided by SBCFD. 	<ul style="list-style-type: none"> No adverse direct or indirect impacts on emergency medical services or law enforcement are expected due to proposed safety procedures, employee training, proposed on-site security measures. Incremental contribution to adverse impacts on emergency response provided by SBCFD. 	<p>to provide adequate fire projection and emergency response services during construction and operation.</p> <ul style="list-style-type: none"> The limited risk of a hydrogen accident that would require emergency response is reduced as compared to the Approved Project. No adverse direct or indirect impacts on emergency medical services or law enforcement are expected due to proposed safety procedures, employee training, proposed on-site security measures. Incremental contribution to adverse impacts on emergency response provided by SBCFD.

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Recreation	<ul style="list-style-type: none"> • The project would eliminate the site from use for recreation activities including camping, hiking, and hunting that currently occur on the site; project would reduce the amount of land available for recreational use in the general Mojave Valley area. • There would be adverse affects to recreational OHV use because open access routes would be closed and would reduce connectivity of the OHV route network. • Construction and operation activities would indirectly impact surrounding WAs and WSA by diminishing opportunities for solitude and unconfined recreation experiences. • Cady Mountains WSA, Rodman Mountains Wilderness, and Pisgah Crater ACEC would be adversely impacted because scenic values would be reduced. • Direct and indirect short-term and long-term adverse impacts; incremental contribution to cumulative adverse impacts. 	<ul style="list-style-type: none"> • The reduced project size would reduce the amount of land eliminated from use for recreation activities including camping, hiking, and hunting that currently occur on the site; the Approved Project would lessen the impact on recreational use in the general Mojave Valley area as compared to the FEIS Agency Preferred Alternative. • There would be adverse affects to recreational OHV use because open access routes would be closed and would reduce connectivity of the OHV route network. • Construction and operation activities would indirectly impact surrounding WAs and WSA by diminishing opportunities for solitude and unconfined recreation experiences. Such impacts will be less than under the FEIS Agency Preferred Alternative due to the reduced project size. • Cady Mountains WSA, Rodman Mountains Wilderness, and Pisgah Crater ACEC would be adversely impacted because scenic values would be reduce, but impacts will be less than under the FEIS Agency Preferred Alternative due to the reduced project size. • Direct and indirect short-term and long-term adverse impacts; incremental contribution to cumulative adverse impacts. 	<ul style="list-style-type: none"> • <u>Impacts to recreation would be the same as the Approved Project as footprint and anticipated use unchanged.</u> • As with the Approved Project, the Amended Project would eliminate the same land from recreational activities including camping, hiking, and hunting that currently occur on the site; Amended Project would have less impact on recreational use in the general Mojave Valley area as compared to the FEIS Agency Preferred Alternative. • There would be adverse affects to recreational OHV use because open access routes would be closed and would reduce connectivity of the OHV route network to the same extent as the Approved Project. • Construction and operation activities would indirectly impact surrounding WAs and WSA by diminishing opportunities for solitude and unconfined recreation experiences. Such impacts will be less than the Approved Project due to the lower height of PV tracker blocks as compared to SunCatchers, reducing the overall visual dominance of the Amended Project on adjacent land. • Cady Mountains WSA, Rodman Mountains Wilderness, and Pisgah Crater ACEC would be adversely impacted because scenic values would be reduce, but impacts will be less than under the Approved Project because the PV modules have a lower profile than the SunCatchers (9 feet versus 40 feet). • Direct and indirect short-term and long-term adverse impacts; incremental contribution to cumulative adverse impacts.

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Socioeconomics and Environmental Justice			
Population and employment	<ul style="list-style-type: none"> It is anticipated that the majority of the construction work force already resides within San Bernardino and Riverside counties. Construction workforce would average at 400 employees; with a peak of 731 employees. Construction anticipated to take place over 52 months. Most of the anticipated operational workforce will likely live within a one-hour commute of the project site. Project would employ approximately 136 full time employees. Approximately 20 operational workers are expected to be recruited from outside the immediate project area. Construction and operation would have no substantial population growth inducing impact. Impacts from the presence of construction and operation workers would be negligible in comparison with the existing populations of the nearby communities. Negligible beneficial short-term and long-term direct and indirect impacts; incremental contribution to cumulative beneficial impacts. 	<ul style="list-style-type: none"> It is anticipated that the majority of the construction work force already resides within San Bernardino and Riverside counties. Construction workforce would average at 400 employees. Construction anticipated to take place over 52 months. Most of the anticipated operational workforce will likely live within a one-hour commute of the project site. Approximately 20 operational workers are expected to be recruited from outside the immediate project area. Construction and operation would have little impact with respect to inducing substantial population growth. Impacts from the presence of construction and operation workers would be negligible in comparison with the existing populations of the nearby communities. Negligible beneficial short-term and long-term direct and indirect impacts; incremental contribution to cumulative beneficial impacts. 	<ul style="list-style-type: none"> <u>Impacts to population and employment will be substantially same as Approved Project; number of construction and full time employees will be reduced.</u> Fewer construction and operation workers would be needed than for the Approved Project because PV requires fewer personnel than SunCatchers to construct and maintain. Construction workforce would average at 340 employees, with a peak of approximately 700 employees. Construction anticipated to take place over 48 months. It is anticipated that the majority of the construction work force already resides within San Bernardino and Riverside counties. Amended Project would employ approximately 112 full time employees. Most of the anticipated operational workforce will likely live within a one-hour commute of the project site. Approximately 11 operational workers are expected to be recruited from outside the immediate project area. Construction and operation would have little impact with respect to inducing substantial population growth. Impacts from the presence of construction and operation workers would be negligible in comparison with the existing populations of the nearby communities. Negligible beneficial short-term and long-term direct and indirect impacts; incremental contribution to cumulative beneficial impacts.
Environmental justice	<ul style="list-style-type: none"> Minorities account for about two percent of the total population within a 6-mile radius of the site. The below-poverty-level population within a 6-mile radius is about 18 percent of the total population. 	<ul style="list-style-type: none"> Minorities account for about two percent of the total population within a 6-mile radius of the site. The below-poverty-level population within a 6-mile radius is about 18 percent of the total population. 	<ul style="list-style-type: none"> <u>Environmental justice impacts same as the Approved Project because project occurs in same location and impacts not changed.</u> Minorities account for about two percent of the total population within a 6-mile radius of the site.

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Socioeconomics and Environmental Justice			
	<ul style="list-style-type: none"> The construction and operation would not result in any direct, indirect, or cumulative disproportionate socioeconomic impacts on low-income or minority populations. 	<ul style="list-style-type: none"> The construction and operation would not result in any direct, indirect, or cumulative disproportionate socioeconomic impacts on low-income or minority populations. 	<ul style="list-style-type: none"> The below-poverty-level population within a 6-mile radius is about 18 percent of the total population. The construction and operation would not result in any direct, indirect, or cumulative disproportionate socioeconomic impacts on low-income or minority populations.
Housing supply	<ul style="list-style-type: none"> Few employees are expected to relocate to the immediate project vicinity. Most workers are expected to commute to the project site daily from their existing residences. There is adequate existing housing in the area and communities near the project site have a high housing vacancy rate. Because project occurs on BLM land, the project would not displace any people or necessitate construction of replacement housing. No direct, indirect, or cumulative impacts on housing supply. 	<ul style="list-style-type: none"> Few employees are expected to relocate to the immediate project vicinity. Most workers are expected to commute to the project site daily from their existing residences. There is adequate existing housing in the area and communities near the project site have a high housing vacancy rate. Because Approved Project occurs on BLM land, the Approved Project would not displace any people or necessitate construction of replacement housing. No direct, indirect, or cumulative impacts on housing supply. 	<ul style="list-style-type: none"> <u>Impacts on housing supply are same as the Approved Project because similar workforce.</u> Few employees are expected to relocate to the immediate project vicinity, and the Amended Project will require less workers than the Approved Project. Most workers are expected to commute to the project site daily from their existing residences. There is adequate existing housing in the area and communities near the project site have a high housing vacancy rate. Because Amended Project occurs on BLM land, the Amended Project would not displace any people or necessitate construction of replacement housing. No direct, indirect, or cumulative impacts on housing supply.
Social and public services	<ul style="list-style-type: none"> Enrollment in local school districts is not anticipated to increase because most workers are expected to commute to the project site daily from their existing residences. In the unlikely event that all operation workers are newly relocated to school districts serving the project vicinity, potential new students would not exceed the capacity of existing school resources. Negligible direct, indirect, and cumulative impacts on school facilities. 	<ul style="list-style-type: none"> Enrollment in local school districts is not anticipated to increase because most workers are expected to commute to the project site daily from their existing residences. In the unlikely event that all operation workers are newly relocated to school districts serving the project vicinity, potential new students would not exceed the capacity of existing school resources. Negligible direct, indirect, and cumulative impacts on school facilities. 	<ul style="list-style-type: none"> <u>Impact to social and public services same as the Approved Project because similar workforce.</u> Enrollment in local school districts is not anticipated to increase because most workers are expected to commute to the project site daily from their existing residences. In the unlikely event that all operation workers are newly relocated to school districts serving the project vicinity, potential new students would not exceed the capacity of existing school resources. Negligible direct, indirect, and cumulative impacts on school facilities.

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Special Designations			
WAs and WSAs	<ul style="list-style-type: none"> No WAs or WSAs are located within the project site and so there are no direct impacts on WAs or WSAs. Project will have a short-term adverse impacts on qualities of naturalness and solitude in the southwest portion of the Cady Mountain WSA due to construction related disturbance and activities. There will be long-term adverse impacts on wilderness characteristics on the areas of the Cady Mountains WSA from which the project would be visible by changing the natural and undisturbed landscape; because only a small portion of the WSA will be impacted, not considered a long-term adverse effect. Proximity to Project could reduce number of recreational users. Tortoise monitoring in the control area which extends into the western portion of the Cady Mountains WSA would not impact the WSA. Short-term effects on Rodman Mountain WA similar to Cay Mountains WSA, but lessened due to distance from project site. No long-term visual impacts to Rodman Mountain WA. There would be minimal visual impacts to the portion of the Newberry Mountains WA from which the project is visible due to the distance from the project site. Incremental contribution to adverse impact on WAs and WSAs by reducing scenic values and increasing recreational pressure on these areas on the Mojave Desert and southern California region. 	<ul style="list-style-type: none"> No WAs or WSAs are located within the project site and so there are no direct impacts on WAs or WSAs. Approved Project will have a short-term adverse impacts on qualities of naturalness and solitude in the southwest portion of the Cady Mountain WSA due to construction related disturbance and activities. There will be long-term adverse impacts on wilderness characteristics on the areas of the Cady Mountains WSA from which the Approved Project would be visible by changing the natural and undisturbed landscape; because only a small portion of the WSA will be impacted, not considered a long-term adverse effect. Proximity to Project could reduce number of recreational users. Tortoise monitoring in the control area which extends into the western portion of the Cady Mountains WSA would not impact the WSA. Short-term effects on Rodman Mountain WA similar to Cay Mountains WSA, but lessened due to distance from project site. Impact less than the FEIS Agency Preferred Alternative due to the reduction in project size. No long-term visual impacts to Rodman Mountain WA. There would be minimal visual impacts to the portion of the Newberry Mountains WA from which the project is visible due to the distance from the project site. s. Incremental contribution to adverse impact on WAs and WSAs by reducing scenic values and increasing recreational pressure on these areas on the Mojave Desert and southern California region. 	<ul style="list-style-type: none"> <u>Impacts to WAs and WSAs similar to but less than the Approved Project because footprint and proposed use unchanged.</u> No WAs or WSAs are located within the project site and so there are no direct impacts on WAs or WSAs. Project will have a short-term adverse impacts on qualities of naturalness and solitude in the southwest portion of the Cady Mountain WSA due to construction related disturbance and activities. Impact will be less than the Approved Project given shortened construction schedule. There will be long-term adverse impacts on wilderness characteristics on the areas of the Cady Mountains WSA from which the project would be visible by changing the natural and undisturbed landscape; because only a small portion of the WSA will be impacted, not considered a long-term adverse effect. Visual impacts less than Approved Project given the lower profile of PV as compared to SunCatchers. Tortoise monitoring in the control area which extends into the western portion of the Cady Mountains WSA would not impact the WSA. Short-term effects on Rodman Mountain WA similar to Cady Mountains WSA, but lessened due to distance from the project site. No long-term visual impacts to Rodman Mountain WA. Minimal if any visual impacts to the portion of the Newberry Mountains WA. Incremental contribution to adverse impact on WAs and WSAs by reducing scenic values and increasing recreational pressure on these areas on the Mojave Desert and southern California region.

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Special Designations			
ACECs	<ul style="list-style-type: none"> The closure of existing OHV routes on the project site and reduced access to open space could cause recreation activities to relocate to the northern portion of the Pisgah ACEC. Potential translocation of desert tortoise into this area could introduce disease into the Pisgah ACEC, and potential density increases could lead to over-population. Potential changes in the local sand transport process that creates habitat for sensitive wildlife within the Pisgah ACEC. Incremental contribution to adverse cumulative impacts. 	<ul style="list-style-type: none"> The closure of existing OHV routes on the project site and reduced access to open space could cause recreation activities to relocate to the northern portion of the Pisgah ACEC. Fewer tortoises would be translocated than under the FEIS Agency Preferred Alternative and impacts associated with translocation into the Pisgah ACEC would be reduced. Potential changes in the local sand transport process that creates habitat for sensitive wildlife within the Pisgah ACEC. Incremental contributions to adverse cumulative impacts. 	<ul style="list-style-type: none"> <u>Impacts to ACECs same as the Approved Project because project footprint and proposed use are unchanged.</u> The closure of existing OHV routes on the project site and reduced access to open space would cause recreation activities to relocate to northern portion of the Pisgah ACEC. Same number of tortoises would be translocated as under the Approved Project; impacts that result from translocation same as Approved Project. Potential changes in the local sand transport process that creates habitat for sensitive wildlife within the Pisgah ACEC. Incremental contribution to adverse cumulative impacts.
DWMA	<ul style="list-style-type: none"> Potential translocation of desert tortoise into the Ord Rodman DWMA could introduce disease and increase density leading to over-population. Impacts associated with translocation will be mitigated during translocation activities under a final Desert Tortoise Translocation Plan. Incremental contribution to adverse cumulative impacts to Ord Rodman DWMA if translocation occurs in this area. No direct or indirect impact on the Superior-Cronese DWMA because it is not proposed for siting of translocated desert tortoises. 	<ul style="list-style-type: none"> Fewer tortoises would be translocated than under the FEIS Agency Preferred Alternative and impacts associated with translocation into the Ord Rodman DWMA would be reduced. Impacts associated with translocation will be mitigated during translocation activities under a final Desert Tortoise Translocation Plan. Incremental contribution to adverse cumulative impacts to Ord Rodman if translocation occurs in this area. No direct or indirect impact on the Superior-Cronese DWMA because it is not proposed for siting of translocated desert tortoises. 	<ul style="list-style-type: none"> <u>Impacts to DWMA same as the Approved Project Because same number of desert tortoise will be translocated.</u> The timing of the desert tortoises surveys and translocation will change under the Amended Project, but there is no anticipated change to the number of tortoises to be relocated as compared to the Approved Project. Translocating desert tortoise during spring rather than fall likely to reduce potential impacts. Same number of tortoise will be translocated as under the Approved Project. Impacts associated with translocation will be mitigated during translocation activities under a final Desert Tortoise Translocation Plan; Desert Tortoise Translocation Plan may be revised during amendment process at the request of the USFWS. Incremental contribution to adverse cumulative impacts to Ord Rodman if translocation occurs in this area. No direct or indirect impact on the Superior-Cronese DWMA because it is not proposed for siting of translocated desert tortoises.

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Special Designations			
Donated and acquired lands	<ul style="list-style-type: none"> • There would be site facilities and improvements on all donated and acquired land - totaling 1,180 acres - within the project boundary. • Incremental contribution to adverse cumulative impacts. 	<ul style="list-style-type: none"> • The reduced footprint of the Approved Project would avoid approximately 1,084 acres of acquired and donated lands within the FEIS Agency Preferred Alternative project site. • Incremental contribution to adverse cumulative impacts. 	<ul style="list-style-type: none"> • <u>Impacts to donated and acquired lands same as the Approved Project because project footprint unchanged.</u> • As with the Approved Project, the reduced footprint of the Amended Project would avoid approximately 1,084 acres of acquired and donated lands within the FEIS Agency Preferred Alternative project site. • Incremental contribution to adverse cumulative impacts.

<u>Resource Element</u>	<u>Impact Assessment for 850 MW FEIS Agency Preferred Alternative</u>	<u>Impact Assessment for 663.5 MW Approved Project in Record of Decision</u>	<u>Impact Assessment for 663.5 MW Proposed Project in CEC Petition to Amend</u>
Traffic and Transportation			
Construction impacts	<ul style="list-style-type: none"> The construction workforce will average 400 workers per day and peak at approximately 730 workers per day, resulting in a total of 1,460 daily round trips during peak construction. During construction, all intersections are projected to operate at acceptable levels. Anticipated 274 trips daily will be result from construction delivery. Mitigation measures will ensure no adverse traffic impact resulting from construction delivery trips. A temporary access road to the site would provide emergency services vehicle access; mitigation measures will ensure Project conforms with California State Fire Marshal requirements for adequate access for emergency vehicles. Until permanent bridge crossing BNSF tracks is completed, all vehicles would cross BNSF tracks at an at grade crossing; mitigation measure will address safety concerns. Negligible cumulative impacts because the number of workers needed for operations of all of these projects is modest compared to road capacities. 	<ul style="list-style-type: none"> Construction period traffic impacts would be substantially the same as the FEIS Agency Preferred Alternative and therefore, impacts related to construction trip generation would be the same. During construction, all intersections are projected to operate at acceptable levels. Mitigation measures will ensure no adverse traffic impacts resulting from construction delivery trips. A temporary access road to the site would provide emergency service vehicles and mitigation required to ensure adequate emergency access. Until permanent bridge crossing BNSF's tracks is completed, all vehicles would cross BNSF's tracks at an at grade crossing to be located near the permanent crossing; mitigation measures will address safety concerns. The planned permanent access route would be used during construction instead of the temporary construction access. Negligible cumulative impacts because the number of workers needed for operations of all of these projects is modest compared to road capacities. 	<ul style="list-style-type: none"> <u>Construction related traffic and transportation acts will be less than Approved Project because of reduced workforce and required equipment delivery.</u> The reduction in SunCatcher technology and the addition of PV modules would reduce peak construction workforces, peak daily trips would be reduced from 1,426 under the Approved Project to 714 under the Amended Project. During construction, all intersection are projected to operate at acceptable levels. Anticipated 108 daily delivery truck trips, a reduction from the 274 anticipated to occur under the Approved Project because fewer trips are required to transport PV technology than SunCatchers. Mitigation measures will ensure no adverse traffic impact resulting from construction delivery trips. A temporary access road to the site would provide emergency service vehicle access and mitigation required to ensure adequate emergency access. Until permanent bridge crossing BNSF's tracks constructed, vehicles would cross either at an existing at grade crossing (as under the FEIS Agency Preferred Alternative) or at a new at grade crossing (as under Approved Project). Change in phasing would reduce number of trips required prior to construction of permanent bridge. Negligible cumulative impacts because the number of workers needed for operations of all of these projects is modest compared to road capacities.

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Traffic and Transportation			
Operation impacts	<ul style="list-style-type: none"> Peak weekday traffic during shift changes would be less than 50 vehicles, and there would be few delivery truck trips. Negligible direct and indirect impacts on traffic due to a low increase in operational traffic. 	<ul style="list-style-type: none"> Peak weekday traffic during shift changes would be less than 50 vehicles, and there would be few delivery truck trips. Negligible direct and indirect impacts on traffic due to a low increase in operational traffic. 	<ul style="list-style-type: none"> <u>Operation related traffic and transportation impacts less than Approved Project because of reduced workforce.</u> The reduction in SunCatcher’s technology and the addition of PV modules would reduce peak operation workforces from 180 in the Approved Project to 112, thereby reducing vehicle trip generation, compared to the Approved Project. The technology change would also reduce glint glare as compared to the Approved Project¹. Fewer trips across the railroad will be required by locating the main services complex south of the tracks. Negligible direct and indirect impacts on traffic due to a low increase in operational traffic.
Effects on BLM routes	<ul style="list-style-type: none"> Segments of eight BLM routes currently designated as open would be closed to public access within the project boundaries. The Applicant would construct a new route around the perimeter of the project site to provide non-exclusive connecting access to BLM route segments that will remain open around the site and alternative access to private property in the project vicinity. Long-term adverse direct and indirect impacts on travel in the project vicinity because of BLM route closures; incremental contribution to adverse cumulative impacts. 	<ul style="list-style-type: none"> Segments of six BLM routes currently designated as open would be closed to public access within the project boundaries, resulting in impacts to two less BLM routes than under the FEIS Agency Preferred Alternative. The perimeter around the project would be shorter for the Approved Project than for the FEIS Agency Preferred Alternative, and would remain available for physical access for general public purposes. Long-term adverse direct and indirect impacts on travel in the project vicinity because of BLM route closures; incremental contribution to adverse cumulative impacts. 	<ul style="list-style-type: none"> <u>Impact to BLM routes would be the same as the Approved Project because project footprint and proposed use are unchanged.</u> Segments of six BLM routes currently designated as open would be closed to public access within the project boundaries, resulting in impacts to two less BLM routes than under the FEIS Agency Preferred Alternative. The perimeter around the project would be shorter for the Amended Project than for the FEIS Agency Preferred Alternative, and would remain available for physical access for general public purposes. Long-term adverse direct and indirect impacts on travel in the project vicinity because of BLM route closures; incremental contribution to adverse cumulative impacts.

¹ Although not discussed in the FEIS, the potential for the Approved Project to result in impacts to the railroad operations as a result of glint and/or glare created by Project features was a subject of analysis at the CEC. The Project owner is currently conducting a glint/glare analysis to assess the potential for this impact to occur as a result of construction or operation of the Amended Project. Results of the study are anticipated to be available mid-September 2011.

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Visual Resources			
Direct Impacts	<ul style="list-style-type: none"> • Very high magnitude of change to the visual landscape. • Project features would dominate the existing landscape by introducing a vast quantity of shapes and forms into the landscape that contrast with the lines, forms, colors and textures of the existing vegetation and landforms. • The reflective metallic surfaces of the SunCatchers would contrast with the landscape, particularly when reflecting a blue sky and/or white cloud formations. • The project would be visible from various locations falling within a 5-mile radius, with the exception of mountainous areas to the north and east where terrain encloses views near the site boundary. • Incremental contribution to adverse cumulative impacts. 	<ul style="list-style-type: none"> • Very high magnitude of change to the visual landscape, but the visual impact would be slightly less than under the FEIS Agency Preferred Alternative due to the reduction in project size. • Project features would dominate the existing landscape by introducing a vast quantity of shapes and forms into the landscape that contrast with the lines, forms, colors and textures of the existing vegetation and landforms. • There will be slightly less impacts from the reflective metallic surfaces of the SunCatchers because fewer SunCatchers will be used than under the FEIS Agency Preferred Alternative. • The project would be visible from various locations falling within a 5-mile radius, with the exception of mountainous areas to the north and east where terrain encloses views near the site boundary. • Incremental contribution to adverse cumulative impacts. 	<ul style="list-style-type: none"> • <u>Direct impacts to visual resources will be less than Approved Project due to the lower profile of the PV modules and the lower reflectivity of PV panels as compared to SunCatcher.</u> • Lower magnitude of change to the visual landscape than under the Approved Project because the replacement of SunCatchers with PV modules will reduce the size and dominance of the project features, and fewer transmission towers will be built. • Project features would dominate the existing landscape by introducing a vast quantity of shapes and forms into the landscape that contrast with the lines, forms, colors and textures of the existing vegetation and landforms, but visual impacts will be less than under the Approved Project. • There will be less impacts from the reflective metallic surfaces of the SunCatchers because fewer SunCatchers will be used than under the Approved Project. • The project would be visible from various locations falling within a 5-mile radius, with the exception of mountainous areas to the north and east where terrain encloses views near the site boundary. • Incremental contribution to adverse cumulative impacts.
Visual Impacts on KOPs	<ul style="list-style-type: none"> • KOP 1: Project would create a very high degree of contrast within the foreground of those traveling on both National Trails Highway and I-40. Magnitude of change from this viewpoint would be severe, and would dominate the landscape. • KOP 2: Overall changes of views from KOP 2 would range from moderate to high, depending on location and distance. • KOP 3: Change from this viewpoint 	<ul style="list-style-type: none"> • KOP 1: Approved Project would have similar visual impacts from this viewpoint. Although magnitude of change would be reduced as compared to FEIS Agency Preferred Alternative it would still be severe and Approved Project would dominate the landscape. • KOP 2: Reduction in size of project, significantly reduces impacts to KOP2 as compared to FEIS Agency Preferred 	<ul style="list-style-type: none"> • <u>Visual impacts would be similar to but less than the Approved Project because of lower profile of PV modules as compared to SunCatchers.</u> • KOP 1: Amended Project would be significantly less visually prominent from this view point than the Approved Project due to the substitution of PV module for SunCatchers. Partial substitution of technology also reduce obstruction of views

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Visual Resources	<p>would be high; existing transmission line towers currently visible and additional towers would further increase the vertical form and line contrast within the horizontal landscape.</p> <ul style="list-style-type: none"> • KOP 4: Project would create a high degree of contrast, magnitude of change from this viewpoint very high; and project would dominate the landscape. • KOP 5: Project would create a substantial degree of contrast; magnitude of change high; and Project would begin to dominate landscape. • KOP 6: Project would create a low degree of contrast and magnitude of change from this viewpoint low. • KOP 7: Change from this viewpoint very low. 	<p>Alternative. Most areas in KOP2 would only experience a moderate change.</p> <ul style="list-style-type: none"> • KO 3: Reduction in size of project would slightly reduce impact as compared to FEIS Agency Preferred Alternative; additional transmission towers and mirror brightness would continue to dominate. • KOP 4: Approved Project would create a high degree of contrast, magnitude of change from this viewpoint very high; and project would dominate the landscape. • KOP 5: Approved Project would create a substantial degree of contrast; magnitude of change high; and Approved Project would begin to dominate landscape. • KOP 6: Impact of Approved Project would be less than the FEIS Agency Approved Alternative due to the reduced project size. Would create a low degree of contrast and magnitude of change from this viewpoint low. • KOP 7: Change from this viewpoint very low and less than under the FEIS Approved Project due to reduced project size. 	<p>of Cady Mountain. Impact would still be severe and Amended Project would dominate the landscapes.</p> <ul style="list-style-type: none"> • KOP 2: Change in technology would reduce the dominance of the Amended Project at KOP 2 as compared to Approved Project. Change would be low. • KOP 3: Amended Project would result in much reduced degree of change from KOP3 as compared to Approved Project, due to the reduction in length of off-site transmission line, reduction or potential elimination of transmission structures and reduced height of PV modules. • KOP 4: Impact would be significantly reduced as compared to Approved Project due to partial substitution of PV modules for SunCatchers; change would remain significant. • KOP 5: Impact would be significantly less than under the Approved Project due to the partial substitution of PV modules for SunCatcher. Impact would remain significant due to magnitude of change and number of views effected. • KOP 6: Amended Project would have a negligible effect on this viewpoint; less impact than the Approved Project due to the partial substitution of PV modules for SunCatchers. • KOP 7: Amended Project would not impact this viewpoint.
Glare and Nighttime Light Impacts	<ul style="list-style-type: none"> • Under certain circumstances, glare from SunCatchers could be intrusive and distracting to motorists, but would not cause retinal damage. • SunCatcher mirrors closest to road could be sources of distracting nuisance brightness in the early morning or late afternoons and motorists on 1-40 may be exposed to a flicker or stroboscopic effect from the repetitive bright mirrors 	<ul style="list-style-type: none"> • Under certain circumstances, glare from SunCatchers could be intrusive and distracting to motorists, but would not cause retinal damage. • SunCatcher mirrors closest to road could be sources of distracting nuisance brightness in the early morning or late afternoons and motorists on 1-40 may be exposed to a flicker or stroboscopic effect from the repetitive bright mirrors at the end of rows. 	<ul style="list-style-type: none"> • <u>Glare impacts less than Approved Project because of partial substitution of PV modules for SunCatchers; nighttime light impacts will be the same as the Approved Project.</u> • Partial substitution of PV modules for SunCatchers will substantially reduce or wholly eliminate any glare impact. Studies currently underway will provide additional information on potential for impact to

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Visual Resources			
	<ul style="list-style-type: none"> at the end of rows. Glare from diffuse reflection is not considered to represent a hazard or substantial nuisance to aircraft due to distance and potential level of brightness. Required setback from freeway designed to reduce glint/glare impacts. Nighttime light pollution associated with Project could adversely effect recreational uses in the area. Mitigation measures designed to reduce impact. 	<ul style="list-style-type: none"> Glare from diffuse reflection is not considered to represent a hazard or substantial nuisance to aircraft due to distance and potential level of brightness. Required setback from freeway designed to reduce glint/glare impacts. Nighttime light pollution associated with Project could adversely effect recreational uses in the area. Mitigation measures designed to reduce impact. 	<p>occur.</p> <ul style="list-style-type: none"> No mirrors will be located any where near public roadways, therefore, no glare impact on motors anticipated. Nighttime light pollution associated with Project could adversely effect recreational uses in the area. Mitigation measures designed to reduce impact.
Construction Impacts, and Impacts of Closure and Decommissioning and Indirect Impacts	<ul style="list-style-type: none"> Visual impacts of construction would be considerable; grading would result in strong color contrast from soil surface disturbance. Project construction would include a highly industrial scene of assembly and installation of SunCatcher units. Initial disturbance from construction would be absorbed into the project development as construction is completed and would not create a separate visual disturbance in the project vicinity. Following decommissioning, color contrast of the disturbed soils will be visually prominent. Visual recovery from land disturbance could occur, over a long period of time, with implementation of an active and comprehensive revegetation program for the site. By substantially lowering the visual quality of the local viewshed, Project could have indirect effect of encouraging additional subsequent development of similar industrial character in the area. 	<ul style="list-style-type: none"> Visual impacts of construction would be considerable; grading would result in strong color contrast from soil surface disturbance. Project construction would include a highly industrial scene of assembly and installation of SunCatcher units. Initial disturbance from construction would be absorbed into the project development as construction is completed and would not create a separate visual disturbance in the project vicinity. Following decommissioning, color contrast of the disturbed soils will be visually prominent. Visual recovery from land disturbance could occur, over a long period of time, with implementation of an active and comprehensive revegetation program for the site. By substantially lowering the visual quality of the local viewshed, Project could have indirect effect of encouraging additional subsequent development of similar industrial character in the area. 	<ul style="list-style-type: none"> <u>Visual impacts related to construction and decommissioning would be same as Approved Project; Indirect visual impacts would be same as Approved Project.</u> Visual impacts of construction would be considerable; grading would result n strong color contrast from soil surface disturbance. During a portion of Phase 2, project construction would include a highly industrial scene of assembly and installation of SunCatcher units.; partial substitution of PV modules would reduce this impact as compared to the Approved Project. Initial disturbance from construction would be absorbed into the project development as construction is completed and would not create a separate visual disturbance in the project vicinity. Following decommissioning, color contrast of the disturbed soils will be visually prominent. Visual recovery from land disturbance could occur, over a long period of time, with implementation of an active and comprehensive revegetation program for the site. By substantially lowering the visual quality of the local viewshed, Project could have indirect effect of encouraging additional subsequent development of similar industrial character in the area.

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Hydrology and Water Resources			
Hydrology	<ul style="list-style-type: none"> • High intensity/short duration runoff events and earth disturbance activities could accelerate erosion; BMPs will be employed to minimize impacts. • The project would create new impervious surfaces that could create additional runoff, erosion and sedimentation. Potential surface water impacts minimized by earthwork required to construct facilities and to maintain control of stormwater will be minimized. • Off-site flow would be intercepted by debris basins, and on-site runoff would be intercepted by detention basins; surface flows would be directed from the basins into the primary drainage channels onsite. • Water quality could be impacted if the stormwater drainage pattern concentrates runoff in areas that are not properly designed or protected; BMPs will be utilized to avoid and mitigate impacts. • Loss of on-site ephemeral streams and washes would alter the hydrological, biogeochemical, vegetation and wildlife functions of the ephemeral drainages. Impacts would be localized and effectively mitigated. • Attenuation of peak flood discharge rates would create direct, adverse, long term impact on desert wash communities downstream of the project. • Increased standing water onsite may promote mosquito breeding, attraction of wildlife, and the possible transport of broken mirror pieces offsite during storm events. • Incremental contribution to adverse 	<ul style="list-style-type: none"> • High intensity/short duration runoff events and earth disturbance activities could accelerate erosion; BMPs will be employed to minimize impacts. • Fewer impervious surfaces would be created due to reduction in project size as compared with the FEIS Agency Preferred Alternative. Potential surface water impacts minimized by earthwork required to construct facilities and to maintain control of stormwater will be minimized. • Measures deemed necessary by hydrology studies would be implemented to ensure that drainage patterns are maintained on-site to extent practicable and that no adverse impacts to off-site features including BNSF railroad would occur. • Water quality could be impacted if the stormwater drainage pattern concentrates runoff in areas that are not properly designed or protected; BMPs will be utilized to avoid and mitigate impacts. • The reduced project footprint as compared to the FEIS Agency Preferred Alternative would reduce impacts to on-site ephemeral streams and washes and provide additional protection of the hydrologic function of high-value desert washes and associated wildlife habitat by eliminating obstruction of natural drainage patterns on the northern project boundary. Impacts would be localized and mitigated. • Attenuation of peak flood discharge rates could create direct, adverse long term impact on desert wash communities downstream of project site; Approved Project required to demonstrate that impact will be minimized such that no long-term 	<ul style="list-style-type: none"> • <u>Hydrology impacts anticipated to be the same as the Approved Project as overall area of disturbance is substantially similar and Amended Project will meet the same performance standards regarding avoidance, minimization and mitigation of hydrologic impacts as required for the Approved Project.</u> • High intensity/short duration runoff events and earth disturbance activities could accelerate erosion; BMPs will be employed to minimize impacts. • The total surface area for the amended project site permanently disturbed by the PV module posts and SunCatcher pedestals would be equal to or less than with the Approved Project, and the same impervious surfaces would be created. Potential surface water impacts minimized by earthwork required to construct facilities and to maintain control of stormwater will be minimized. • As with the Approved Project, measures deemed necessary by hydrology studies would be implemented to ensure that drainage patterns are maintained on-site to extent practicable and that no adverse impacts to off-site features including BNSF railroad would occur.² • Water quality could be impacted if the stormwater drainage pattern concentrates runoff in areas that are not properly designed or protected; BMPs will be utilized to avoid and mitigate impacts. • The reduced project footprint as compared to the FEIS Agency Preferred Alternative would reduce impacts to on-site ephemeral streams and washes and provide additional protection of the hydrologic function of high-value desert

² Studies are currently being conducted regarding Amended Project’s potential impacts to hydrology. Studies should be completed by mid September 2011.

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Hydrology and Water Resources			
	<p>cumulative soil erosion and stormwater impacts within the Newberry Springs watershed.</p>	<p>adverse impact occurs.</p> <ul style="list-style-type: none"> • Increased standing water onsite may promote mosquito breeding, attraction of wildlife, and the possible transport of broken mirror pieces offsite during storm events; impact greatly decreased as compared to FEIS Agency Preferred Alternative due to elimination of detention basins. • Incremental contribution to adverse cumulative soil erosion and stormwater impacts within the Newberry Springs watershed. 	<p>washes and associated wildlife habitat by eliminating obstruction of natural drainage patterns on the northern project boundary. Impacts will be localized and mitigated.</p> <ul style="list-style-type: none"> • Attenuation of peak flood discharge rates could create direct, adverse long term impact on desert wash communities downstream of project site; Amended Project will demonstrate that impact will be minimized such that no long-term adverse impact occurs. • There is a potential that the hydrologic, hydraulic and sediment response for the Amended Project may change from that of the Approved Project as a result of PV module spacing, coverage, post size and PV module orientation. However, the Amended Project's total area of disturbance is less than Approved Project and Amended Project will meet same performance standards regarding avoidance, minimization and mitigation of hydrologic impacts as the Approved Project. Therefore, no significant change in level of impact anticipated. • Further hydrology, hydraulic, and sediment transport/scour analyses will be prepared. Any changes that result from these reports are not anticipated to be substantial because the overall project disturbance area, impervious surface area, and cut and fill ranges would not differ substantially from those analyzed for the Approved Project and performance standards required for Approved Project will be met. • It is anticipated that the relocation of the main services complex and the substation to the south of the railroad would not increase runoff, soil erosion, or sedimentation impacts because the size and impermeable area of the main services complex would not increase under the

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Hydrology and Water Resources			
			<p>Amended Project.</p> <ul style="list-style-type: none"> Increased standing water onsite may promote mosquito breeding, attraction of wildlife, and the possible transport of broken mirror pieces offsite during storm events; impact greatly decreased as compared to FEIS Agency Preferred Alternative due to elimination of detention basins. Incremental contribution to adverse cumulative soil erosion and stormwater impacts within the Newberry Springs watershed.
Groundwater resources	<ul style="list-style-type: none"> The project would use an average of 136 acre-feet of water per year during construction and average of 20 acre-feet per year for operations, mirror washing and domestic use. Potable water during operations will be trucked in from off-site. The water pumping during construction and operation will not alter the patterns of water quality in the groundwater aquifer. Localized drawdown of the water table and rapid recovery of groundwater levels will result in the project having no adverse affects on water quality or quantity. No impact would occur to groundwater or wells outside the project site. Groundwater impacts would be reversible, as groundwater levels would recover to pre-pumping conditions after closure of the facility. Negligible, long-term direct and indirect impacts on groundwater; negligible cumulative impact . 	<ul style="list-style-type: none"> The Approved Project would use the same amount of water as the FEIS Agency Preferred Alternative. The Approved Project would allow for use of water for domestic purposes from Lavic Basin Well 3, eliminating the need for water to be trucked to the site. The water pumping during construction and operation will not alter the patterns of water quality in the groundwater aquifer. Localized drawdown of the water table and rapid recovery of groundwater levels will result in the project having no adverse affects on water quality or quantity. No impact would occur to groundwater or wells outside the project site. Groundwater impacts would be reversible, as groundwater levels would recover to pre-pumping conditions after closure of the facility. Negligible, long-term direct and indirect impacts on groundwater; negligible cumulative impacts. 	<ul style="list-style-type: none"> <u>Impacts to groundwater resources would be the same as the Approved Project because the amount used and source of groundwater for the Amended Project would remain the same; impacts could decrease due to the shortened construction schedule (52 v. 48 months) as compared to the Approved Project.</u> The Amended Project would use the same amount of water during construction and operation as the Approved Project. As with the Approved Project, the Amended Project would allow for use of water for domestic purposes from Lavic Basin Well 3, eliminating the need for water to be trucked to the site. The water pumping during construction and operation will not alter the patterns of water quality in the groundwater aquifer. Localized drawdown of the water table and rapid recovery of groundwater levels will result in the project having no adverse affects on water quality or quantity. No impact would occur to groundwater or wells outside the project site. Groundwater impacts would be reversible, as groundwater levels would recover to pre-pumping conditions after closure of the facility.

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Hydrology and Water Resources			
			<ul style="list-style-type: none"> Negligible, long-term direct and indirect impacts on groundwater; negligible cumulative impacts.
Operations wastewater	<ul style="list-style-type: none"> Water used for mirror washing and other uses would require treatment to remove dissolved solids. Project would use reverse osmosis to treat water. Wastewater generated by the reverse osmosis process would contain relatively high concentrations of TDS. Wastewater from project operations would be discharged into two on-site, double lined evaporation ponds that would comply with the requirements for Class II surface impoundments. The on-site facility wastewater would include two lined evaporation ponds, each covering approximately 1/2 acre in surface area and will alternate between operation and evaporation on an annual basis. Each evaporation pond would be designed to contain one year of wastewater discharge. In alternating years, the accumulated bottom soils would be tested and disposed in an appropriate off-site waste disposal facility in accordance with applicable laws and regulations. 	<ul style="list-style-type: none"> Water used for mirror washing and other uses would require treatment to remove dissolved solids. Project would use reverse osmosis to treat water. Wastewater generated by the reverse osmosis process would contain relatively high concentrations of TDS. Wastewater from project operations would be discharged into two on-site, double lined evaporation ponds that would comply with the requirements for Class II surface impoundments. The on-site facility wastewater would include two lined evaporation ponds, each covering approximately 1/2 acre in surface area and will alternate between operation and evaporation on an annual basis. Each evaporation pond would be designed to contain one year of wastewater discharge. In alternating years, the accumulated bottom soils would be tested and disposed in an appropriate off-site waste disposal facility in accordance with applicable laws and regulations. 	<ul style="list-style-type: none"> <u>Impacts associated with operational wastewater would be the same as the Approved Project as estimated effluent for the waste water is the same and the treatment method is unchanged.</u> Water used for mirror washing and other uses would require treatment to remove dissolved solids. Project would use reverse osmosis to treat water. Wastewater generated by the reverse osmosis process would contain relatively high concentrations of TDS. Wastewater from project operations would be discharged into two on-site, double lined evaporation ponds that would comply with the requirements for Class II surface impoundments. The on-site facility wastewater would include two lined evaporation ponds, each covering approximately 1/2 acre in surface area and will alternate between operation and evaporation on an annual basis. Each evaporation pond would be designed to contain one year of wastewater discharge. In alternating years, the accumulated bottom soils would be tested and disposed in an appropriate off-site waste disposal facility in accordance with applicable laws and regulations.
Jurisdictional waters	<ul style="list-style-type: none"> No federal jurisdictional waters are presented within the project site, and there would be no impacts to Waters of the United States. Waters of the State are present on the project site and would be impacted due to the placement of facility structures. Impacts to State jurisdictional waters would include the removal of native vegetation, the discharge of fill, degradation of water quality, and the 	<ul style="list-style-type: none"> No federal jurisdictional waters are presented within the project site, and there would be no impacts to Waters of the United States. The Approved Project would lessen the impacts to jurisdictional waters of the State because the avoided northern portion of the site included in the FEIS Proposed Action supports the highest density of jurisdictional waters. Approved project would impact 152.3 acres of state jurisdictional waters. 	<ul style="list-style-type: none"> <u>Impacts to state jurisdictional waters would be reduced as compared to the Approved Project due to avoidance of additional areas.</u> No federal jurisdictional waters are presented within the project site, and there would be no impacts to Waters of the United States. <u>Impacts to state jurisdictional waters would decrease from 152.3 under the Approved Project to 90.2 under the Amended Project; as with the approved Project, Amended</u>

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Hydrology and Water Resources			
	<p>attenuation of peak flood flows. Most impacts would occur during access road improvements and development of the project's detention basin and stormwater management system.</p> <ul style="list-style-type: none"> The project may alter the existing topographical and hydrological conditions and introduce nonnative, invasive plant species. The project would avoid surface impacts on most of the high quality microphyll woodland habitat. The location of the detention basins would leave the existing ephemeral washes near the northern project boundary undisturbed and functioning. Adverse, long-term direct and indirect impacts on California State jurisdictional waters; incremental contribution to cumulative adverse impacts. 	<ul style="list-style-type: none"> The project may alter the existing topographical and hydrological conditions and introduce nonnative, invasive plant species. The project would avoid surface impacts on most of the high quality microphyll woodland habitat. Elimination of detention basins would reduce impacts to jurisdictional washes. Reduction of project size would avoid highest functioning alluvial plains in the northern area of the site. Adverse, long-term direct and indirect impacts on California State jurisdictional waters; incremental contribution to cumulative adverse impacts. 	<p>Project would avoid impacts to highest density and highest quality state jurisdictional waters in the northern area of the site (impacted by the FEIS Agency Preferred Alternative).</p> <ul style="list-style-type: none"> Impacts to state jurisdictional water will be mitigated at a 1:1 ratio, ensuring that impacts fully offset. The project may alter the existing topographical and hydrological conditions and introduce nonnative, invasive plant species; Amended Project includes measures to mitigate impacts. The project would avoid surface impacts on most of the high quality microphyll woodland habitat. Incremental contribution to cumulative adverse impacts.
Floodplains and potential flood damage	<ul style="list-style-type: none"> There are no FEMA designated floodplains onsite. No structural buildings are proposed to be located in areas susceptible to such flooding. SunCatchers and related project features may be located in areas susceptible to flooding resulting from a 100-year storm. The project's Stormwater Damage Monitoring and Response Plan would ensure that structures are protected and that redirected flows are designed such that they not cause adverse impacts. No direct, indirect, or cumulative adverse impacts on floodplains. Volume of SunCatcher foundation elements installed in existing channels could decrease capacity of channels to contain flood flows. Migration of channels and local scour caused by stormwater flows could remove sediment supporting individual poles and 	<ul style="list-style-type: none"> There are no FEMA designated floodplains onsite. The Approved Project would not include construction or maintenance of several detention basins proposed at the north boundary of the project site in the FEIS Agency Preferred Alternative, but include stormwater control measures necessary to protect project facilities and off-site areas from flooding and erosion. The deletion of 470 acres of detention basin construction will reduce impacts to biological resources because the potential for long-term effects to nearby vegetation from modified flow and sedimentation regimes would be eliminated. The elimination of the basins also reduces impacts to natural drainages on the project site. No structural buildings are proposed to be located in areas susceptible to such flooding. 	<ul style="list-style-type: none"> <u>Impacts to floodplains and related to potential flood damage same as Approved Project as Amended Project has same footprint and will meet same performance standards regarding control of stormwater.</u> There are no FEMA designated floodplains onsite. As with the Approved Project, the Amended Project would not include construction or maintenance of several detention basins proposed at the north boundary of the project site in the FEIS Agency Preferred Alternative, but would include stormwater control measures necessary to protect project facility and off-site areas from flooding and erosion. The deletion of 470 acres of detention basin construction will reduce impacts to biological resources because the potential for long-term effects to nearby vegetation from modified flow and sedimentation regimes would be eliminated. The elimination of the basins also reduces

<u>Resource Element</u>	<u>Impact Assessment for 850 MW FEIS Agency Preferred Alternative</u>	<u>Impact Assessment for 663.5 MW Approved Project in Record of Decision</u>	<u>Impact Assessment for 663.5 MW Proposed Project in CEC Petition to Amend</u>
Hydrology and Water Resources			
	cause them to fall to ground. If that occurred, parts of fallen SunCatcher could be washed downstream. Detention basins would completely retain flood flows from 100-year storm event. Water would be released at a rate to avoid damaging poles.	<ul style="list-style-type: none"> No direct, indirect, or cumulative adverse impacts on floodplains. 	impacts to natural drainages on the project site. <ul style="list-style-type: none"> No structural buildings are proposed to be located in areas susceptible to such flooding. No direct, indirect, or cumulative adverse impacts on floodplains.



BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT
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**FOR THE CALICO SOLAR PROJECT
AMENDMENT**

**Docket No. 08-AFC-13C
PROOF OF SERVICE
(Revised 8/1/2011)**

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DECLARATION OF SERVICE

I, Marsha Curtis, declare that on August 22, 2011, I served and filed copies of the attached Applicant's Status Memorandum, dated August 22, 2011. The original document, filed with the Docket Unit or the Chief Counsel, as required by the applicable regulation, is accompanied by a copy of the most recent Proof of Service list, located on the web page for this project at:
[www.energy.ca.gov/sitingcases/calicosolar/compliance/index.html].

The document has been sent to the other parties in this proceeding (as shown on the Proof of Service list) and to the Commission's Docket Unit or Chief Counsel, as appropriate, in the following manner:

(Check all that Apply)

For service to all other parties:

- Served electronically to all e-mail addresses on the Proof of Service list;
- Served by delivering on this date, either personally, or for mailing with the U.S. Postal Service with first-class postage thereon fully prepaid, to the name and address of the person served, for mailing that same day in the ordinary course of business; that the envelope was sealed and placed for collection and mailing on that date to those addresses **NOT** marked "e-mail preferred."

AND

For filing with the Docket Unit at the Energy Commission:

- by sending an original paper copy and one electronic copy, mailed with the U.S. Postal Service with first-class postage thereon fully prepaid and e-mailed respectively, to the address below (preferred method); **OR**
- by depositing an original and 12 paper copies in the mail with the U.S. Postal Service with first-class postage thereon fully prepaid, as follows:

CALIFORNIA ENERGY COMMISSION – DOCKET UNIT

Attn: Docket No. 08-AFC-13C
1516 Ninth Street, MS-4
Sacramento, CA 95814-5512
docket@energy.state.ca.us

OR, if filing a Petition for Reconsideration of Decision or Order pursuant to Title 20, § 1720:

- Served by delivering on this date one electronic copy by e-mail, and an original paper copy to the Chief Counsel at the following address, either personally, or for mailing with the U.S. Postal Service with first-class postage thereon fully prepaid:

California Energy Commission
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I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct, that I am employed in the county where this mailing occurred, and that I am over the age of 18 years and not a party to the proceeding.

