5.1 BIOLOGICAL RESOURCES

This section compares the potential impacts to biological resources between the Modified Project and the Approved Project. As demonstrated below, in all cases, the Modified Project's potential environmental impacts are less than those identified in the Final Commission Decision for the Approved Project.

5.1.1 Summary of Project Changes Related to Biology

The Modified Project incorporates the following design changes that were developed by K Road Calico Solar to reduce the potential impacts to biological resources from those evaluated for the Approved Project.

First, the overall site footprint has been reduced from 4,613 acres to 3,851 acres. This further minimizes environmental impacts by:

- Avoiding the highest quality desert tortoise habitat located in the northeast of the original project site and avoiding development in areas with more than half of the desert tortoise identified on the approved site;
- Eliminating development of an area near the center of the Modified Project to provide an open space that will allow for a wildlife movement corridor;
- Avoiding development within three of the four distinct areas containing specific incidences of White-Margined Beardtongue;
- Avoiding development within 69.23 acres of Mojave Fringe Toed Lizard including 16.9 acres of the 21.4 total acres of high quality breeding habitat;
- Excluding the donated lands (Catellus Lands) within Section 17 from the project; and
- Incorporation of management practices including minimizing graded and stabilized roadway access to the solar field and changing the timing of individual tortoise translocations.

The facilities, engineering design changes, depth of excavation, extent of construction, and overall acreage of disturbance would not increase from those identified under the Approved Project. The locations of the roads would be altered due to changes in the Project layout (as shown on Figure 2-2) and the amount of and location of ground disturbance would change. However, the overall disturbed acreage would remain less than the Approved Project. The Project changes under the Modified Project would decrease the total length of improved roads required and increase the total length of unimproved module access points throughout the Project. In total, these changes would decrease the Project's impacts to State jurisdictional waters (*i.e.,* ephemeral drainages) that would occur within the Project site.

The proposed technology change to PV modules under the Modified Project would require a larger area of brush trimming during construction than would the Approved Project, and less brush trimming during Project operations. Under the Modified Project, as a result of the proposed relocation of the Project substation to a site near the Pisgah Substation, 0 to 3, rather than 12 to 15, transmission towers would be required.

Because the phases of construction would be changed under the Modified Project, the timing of translocations of individual desert tortoises would change, although the total number of desert tortoises affected would decrease.

5.1.2 Changes in Environmental Impacts

In the Commission Decision, the Commission concluded that there would be potential impacts from Project-related activities on biological resources, including impacts to state jurisdictional waters and desert wash vegetation, state- and federally-listed species, and other sensitive species, (Commission Decision, page 232). Throughout the regulatory review process, reductions were made to the Project footprint to avoid environmentally sensitive areas and reduce biological impacts. The Modified Project would further reduce impacts to biological resources compared to the Approved Project.

Under the Modified Project, it is anticipated that the permanent impacts to state jurisdictional waters, assuming impacts to all state waters within the Modified Project footprint, would decrease from 152.3 acres to 114.1 acres (Figure 5.1-1).

The changes under the Modified Project would not increase impacts to desert vegetation from that indicated in the Approved Project. Although a greater number of shrubs would require trimming during construction, compared to the Approved Project, Condition BIO-28, requiring vegetation restoration, would be applied and would mitigate this impact. During operations, vegetation trimming under the Modified Project would be substantially reduced compared to the Approved Project; Condition BIO-28 would also apply during operations. The Modified Project would not result in an increase in impacts to vegetation.

Because the number of transmission towers needed for the Modified Project would be 0 to 3 rather than 12 to 15 under the Approved Project, potential impacts from bird and bat collisions with the towers would be reduced. Potential perches for common ravens, which prey on other species, including sensitive species, would also be reduced.

The proposed change in phasing and footprint reduction under the Modified Project would result in fewer desert tortoises being translocated in Phase 1, as well as Phase 2, compared to the Approved Project. Because construction of Phase 2 is not anticipated to begin until 2015, K Road Calico Solar will conduct additional desert tortoise studies prior to construction activities to further add to the data on desert tortoise movement north of the BNSF railroad. This data could be used by the Designated Biologist and

resource agency staff to better refine the translocation plan as translocation techniques and monitoring methods evolve as the result of lessons learned from other projects.

With implementation of the Conditions of Certification as modified to reflect the smaller project disturbance area, and considering that no increase to the Project footprint, boundaries, or overall disturbance would occur, no increase in impacts to biological resources would occur under the Modified Project. The addition of K Road Calico Solar's offer to conduct additional studies in the area north of the BNSF railroad is not deferred analysis nor deferred mitigation as the existing Conditions of Certification relating to translocation and habitat compensation for desert tortoise would continue to apply whether or not the studies are undertaken.

5.1.3 Changes in LORS

In the Commission Decision, the Commission concluded that, with the implementation of the Conditions, the Approved Project would comply with all applicable LORS. The Commission identified the LORS listed below associated with biological resources.

1. The project owner will implement appropriate avoidance and mitigation measures to prevent significant adverse impacts to all sensitive species.
2. With implementation of the mitigation measures described in the evidentiary record and incorporated into the Conditions below, as well as those in other portions of this Decision, the Project will not result in significant direct, indirect, or cumulative impacts to biological resources.
3. With implementation of the mitigation measures described in the evidentiary record and incorporated into the Conditions, the Approved Project will conform to all applicable laws, ordinances, regulations, and standards related to biological resources as identified above.

There are no new LORS that would affect the Commission's findings. However, an amendment to the Commission's Final Decision would also amend the Incidental Take Permit and a Lake and Streambed Alteration Agreement from the CDFG. We understand that BLM will consult with the USFWS to amend its Biological Opinion to reflect the Modified Project

5.1.4 Changes in Proposed Mitigation

No new or more severe impacts requiring additional mitigation are anticipated to result from the Modified Project. The mitigation measures proposed in the Commission Decision would mitigate impacts associated with the Modified Project to levels that would be less than significant.

5.1.5 Changes in Conditions of Certification

The conforming changes to the Conditions for the Modified Project related to biological resources are:

REVEGETATION PLAN AND COMPENSATION FOR IMPACTS TO NATIVE VEGETATION COMMUNITIES

BIO-10 The project owner shall provide restoration/compensation for impacts to native vegetation communities and develop and implement a Revegetation Plan for all areas subject to temporary project disturbance, including but not limited to linear features and berms of detention or debris basins, to the extent permitted by stormwater control requirements. Upon completion of construction, all temporarily disturbed areas shall be restored to pre-project grade and revegetated according to the measures described below. Temporarily disturbed areas within the project area include, but are not limited to: all areas where underground infrastructure was installed, temporary access roads, construction work temporary lay-down areas, and construction equipment staging areas. For the purpose of this mitigation measure, "temporarily disturbed areas" shall include disturbances that are considered permanent impacts in the analyses above (i.e., would take more than 5 years to recover) but would benefit from the revegetation activities identified here. Areas within the PV Tracker Blocks (unimproved module access points and the native soil rows) shall not be revegetated. The following measures shall be implemented for all temporarily disturbed areas, excluding areas immediately around facilities which may be landscaped according to a separate Landscape Plan. These measures will include:

1. Plan Details. The plans shall include at minimum: (a) locations and details for top soil storage; (b) methods to salvage and replant cacti, yucca or other species described in **BIO-12** Section E, or to plant out nursery stock of these species onto revegetation sites; (c) seed collection guidelines; (d) a schematic depicting the mitigation area; (e) time of year that the planting will occur and the methodology of the planting; (f) a description of the irrigation methodology if used; (g) measures to control exotic vegetation on site; (h) performance standards (see below); and (i) a detailed monitoring program. All ~~habitats~~temporary disturbance areas dominated by non-native species prior to project disturbance shall be revegetated using appropriate native species. This plan shall also contain contingency measures for failed restoration efforts (efforts not meeting success criteria).

2. Topsoil Salvage. Topsoil shall be stockpiled from the project site for use in revegetation of the temporarily disturbed ~~soils~~areas. The topsoil excavated shall be segregated, kept intact, and protected, under conditions shown to sustain seed bank viability. The upper 1 inch of topsoil which contains the seed bank shall be scraped and stockpiled for use as the top-dressing for the revegetation area. An additional 6 to 8 inches of soil below the top 1 inch of soil shall also be scraped and separately stockpiled for use in revegetation areas. Topsoil shall be replaced in its original vertical orientation following ground disturbance, ensuring the integrity of the top one inch in particular. All other elements of soil stockpiling shall be conducted as described on pages 39-40 of *Rehabilitation of Disturbed Lands in California* (Newton and Claassen 2003).

3. Seed and Nursery Stock. Only seed or potted nursery stock of locally occurring native species shall be used for revegetation. Seeds shall contain a mix of short-lived early pioneer species such as native annuals and perennials and subshrubs. Seeding and planting shall be conducted as described in Chapter 5 of *Rehabilitation of Disturbed Lands in California* (Newton and Claassen 2003). A list of plant species suitable for Mojave Desert region revegetation projects, including recommended seed treatments, are included in Appendix A-8 of the same report. The list of plants observed during the 2010 special-status plant surveys of the Project area can also be used as a guide to site-specific plant selection for revegetation. In conformance with BLM policy, the project owner shall include salvaged or nursery stock yucca (all species), cacti (excluding cholla species, genus *Cylindropuntia),* smoke tree, mesquites, and desert ironwood in revegetation plans and implementation, as described in **BIO-12** Section E.

4. Monitoring Requirement and Performance Standards. Post-seeding and planting monitoring will be yearly and shall continue for a period of no less than 10 years or until the defined performance standards are achieved (whichever is later). Remediation activities (e.g., additional planting, removal of non-native invasive species, or erosion control) shall be taken during the 10-year period if necessary to ensure the success of the restoration effort. If the mitigation fails to meet the established performance standards after the 10-year maintenance and monitoring period, monitoring and remedial activities shall extend beyond the 10-year period until the performance standards are met, unless otherwise specified by the Energy Commission and BLM. As needed to achieve performance standards, the project owner shall be responsible for replacement planting or other remedial action as agreed to by BLM and CPM. Replacement plants shall be monitored with the same

survival and growth requirements as required for original revegetation plantings. The following performance standards must be met by the end of the monitoring period: (a) at least 80% of the species and vegetative cover observed within the temporarily disturbed areas shall be native species that naturally occur in desert scrub habitats; (b) absolute cover and density of native plant species within the revegetated areas shall equal at least 60% of the pre-disturbance or reference vegetation cover; and (c) the site shall have gone without irrigation or remedial planting for a minimum of three years prior to completion of monitoring.

5. If a fire or flood damages a revegetation area within the 10-year monitoring period, the owner shall be responsible for a one-time replacement. If a second fire or flood occurs, no replanting is required, unless the event is caused by the owner's activity (e.g., as determined by BLM or other firefighting agency investigation).

Verification: All mitigation measures and their implementation methods shall be included in the BRMIMP and implemented. Within 90 days after completion of each year of project construction, the project owner shall provide to the CPM verification of the total vegetation acreage subject to temporary and permanent disturbance. To monitor and evaluate the success of the revegetation, the project owner shall submit annual reports of the revegetation including the status of the site, percent cover of native and exotics, and any remedial actions conducted by the owner to the CPM and BLM Wildlife Biologist.

~~No less than 30 days following the publication of the Energy Commission License Decision or the Record of Decision/ROW Issuance, whichever comes first~~At least 30 days prior to Pre-Construction Site Mobilization, the project owner shall submit to the CPM and BLM's Wildlife Biologist a final agency-approved Revegetation Plan~~ that has been reviewed and approved by BLM's Wildlife Biologist and the CPM~~. The Plan shall include a Plant Salvage and Replacement Section as described in **BIO-12** Section E. All modifications to the Revegetation Plan shall be made only after approval from BLM's Wildlife Biologist and the CPM.

Within 30 days after completion of each year of project construction, the project owner shall provide to the CPM for review and approval, a written report identifying which items of the Revegetation Plan have been completed, a summary of all modifications to mitigation measures made during the project's construction phase, and which items are still outstanding.

On January 31st of each year following construction until the completion of the revegetation monitoring specified in the Revegetation Plan, the Designated

Biologist shall provide a report to the CPM and BLM's Wildlife Biologist that includes: a summary of revegetation activities for the year, a discussion of whether revegetation performance standards for the year were met; and recommendations for revegetation remedial action, if warranted, are planned for the upcoming year.

WEED MANAGEMENT PLAN

BIO-11 The project owner shall ~~revise~~ prepare and implement a Weed Management Plan that meets the approval of BLM and CPM. The draft ~~Noxious~~ Weed Management Plan submitted by the ~~applicant~~project owner shall provide the basis for the final plan, subject to review and revisions from BLM, USFWS, CDFG, and the CPM.

The final plan shall include weed control measures with demonstrated records of success, based on the best available information from sources such as: The Nature Conservancy's The Global Invasive Species Team, Cooperative Extension, California Invasive Plant Council http://www.cal-ipc.org/ip/ management/plant profiles/index. php, and the California Department of Food & Agriculture Encycloweedia: http://www.cdfa.ca.gov/phpps/ipc/encycloweedia/encycloweedia

hp.htm. The methods shall meet the following criteria:

1. Manual: well-timed removal of plants or seed heads with hand tools; seed heads and plants must be disposed of in accordance with guidelines from the ~~Riverside~~San Bernardino County Agricultural Commissioner.

2. Chemical: Herbicides known to have residual toxicity, such as ~~preemergents~~pre-emergents and ~~pellts~~pellets, shall not be used in natural areas or within the engineered channels. Only the following application methods may be used: wick (wiping onto leaves); inner bark injection; cut stump; frill or hack & squirt (into cuts in the trunk); basal bark girdling; foliar spot spraying with backpack sprayers or pump sprayers at low pressure or with a shield attachment to control drift, and only on windless days, or with a squeeze bottle for small infestations.

   In addition to describing weed eradication and control methods, and a reporting plan for weed management during and after construction, the final Weed Management Plan shall include at least the following Best Management Practices to prevent the spread and propagation of weeds:

- Limit the extent of any vegetation and/or ground disturbance to the absolute minimum needed, and limit ingress and egress to defined routes.

- Install and maintain vehicle wash and inspection stations and closely monitor the types of materials brought onto the site.

- Reestablish vegetation on disturbed sites with native seed mixes (measures and performance standards to be consistent with Revegetation Plan, described in Condition of Certification **BIO-10).**

- Monitoring and timely implementation of control measures to ensure early detection and eradication for weed invasions. Weed infestations must be controlled or eradicated as soon as possible upon discovery, and before they go to seed, to prevent further expansion.

- Use only weed-free straw or hay bales used for sediment barrier installations, and weed-free seed.

- Reclamation and revegetation shall occur on all temporarily disturbed areas, including, but not limited to, transmission lines, temporary access roads, construction work temporary lay-down areas, and staging areas.

- Control weeds in areas where irrigation and panel ~~mirror~~ washing take place.

- Prohibit disposal of mulch or green waste from mown weed infestations ~~around~~within the ~~solar generators~~project area to prevent inadvertent introduction and spread of invasive plants beyond the immediate vicinity of the project area and possibly into Environmentally Sensitive Areas (ESAs) within the project area or rare plant populations off-site. Mulch or green waste shall be removed from the site in a covered vehicle to prevent seed dispersal, and transported to a landfill or composting facility.

- Indicate where herbicides may be used, which herbicides, and specify techniques to be used to avoid chemical drift or residual toxicity to special-status plants, consistent with guidelines provided by the Nature Conservancy's The Global Invasive Species Team (http://www. invasive.org/gist/products. html).

- Avoid herbicide use or other control methods in or around ~~Environmentally Sensitive Areas (~~ESAs, (see Condition of

Certification **BIO-12)** on-site or off-site; prevent any herbicide drift into ESAs.

From the time construction begins and throughout the life of the project, surveying for new invasive weed populations and the monitoring of identified and treated populations shall be required within the project area and surrounding 250-foot buffer area. See also requirements for weed monitoring and treatment in the adjacent Pisgah Crater ACEC described in Condition of Certification **BIO-12.** Surveying and monitoring for weed infestations shall occur annually. Treatment of all identified weed populations shall occur at a minimum of once annually. When no new seedlings or resprouts are observed at treated sites for three consecutive, average rainfall years, the weed infestation at that site can be considered eradicated and weed control efforts, but not annual monitoring, may cease for that impact site.

Verification: At least 30 days prior to start of any ~~project-related ground disturbance activities~~pre-construction site mobilization, the project owner shall provide the BLM's Wildlife Biologist and the CPM with the ~~revised Weed Management Plan. The project owner shall coordinate with the CPM and BLM's Wildlife Biologist to revise and finalize the~~final Weed Management Plan. Any further modifications to the approved Weed Management Plan shall be made only after consultation with the CPM and BLM's Wildlife Biologist in consultation with USFWS and CDFG. Within 30 days after completion of project construction, the project owner shall provide to the BLM's Wildlife Biologist and the CPM for review and approval, a written report identifying which items of the Weed Management Plan have been completed, a summary of all modifications to mitigation measures made during the project's construction phase, and which items are still outstanding. A summary report on weed management on the project site shall be submitted in the Annual Compliance Report during plant operations.

SPECIAL-STATUS PLANT IMPACT AVOIDANCE AND MINIMIZATION

BIO-12 This condition contains the following five sections:

- **Section A: White-margined Beardtongue Avoidance and Minimization Measures** describes measures to protect all white-margined beardtongue plants located within the project area or within 250 feet of its boundaries (including access roads, staging areas, laydown areas, parking and storage areas) from accidental and indirect impacts during construction, operation, and closure.
- **Section B: Conduct Late Season Botanical Surveys** ~~describes guidelines for conducting~~confirms that 2010 summer-fall surveys ~~to detect special-status plants that may~~ have been ~~missed during the spring surveys~~completed.

- **Section C: Mitigation Requirements for Special-Status Plants Detected in the Summer/Fall Surveys** outlines the level of avoidance required for plants detected during the 2010 summer-fall surveys, based on the species' rarity and conservation status. Avoidance is based on extent of local occurrences on the project site and, as applicable, extending onto contiguous public land. Where avoidance would result in on-site isolation of plant occurrences from essential ecological processes, or would cause local populations to become ~~inviable~~no longer viable, then off-site compensation would be allowed.
- **Section D: Off-Site Compensatory Mitigation for Special-Status Plants** describes performance standards for mitigation for a range of options for compensatory mitigation through acquisition, restoration/enhancement, or a combination of acquisition and restoration/enhancement, based on the species' rarity and conservation status.
- **Section E: Plant Salvage** describes measures to include potted nursery stock or salvaged specimens of certain cacti, yucca, and other species listed in San Bernardino County plant protection policies in revegetation plans, in conformance with BLM policy.

"Project Disturbance Area" encompasses all areas to be temporarily ~~and~~or permanently disturbed by the Project, including the plant site, linear facilities, and areas disturbed by temporary access roads, fence installation, construction work lay-down and staging areas, parking, storage, or by any other activities resulting in disturbance to soil or vegetation. Nothing in this condition requires the project owner to conduct botanical surveys on private lands adjacent to the project site when the project owner has made reasonable attempts to obtain permission to enter the property for survey work but was unable to obtain such permission.

The Project owner shall implement the following measures in Section A, B, C, D and E to avoid, minimize, and compensate for impacts to certain special-status plant species, based on species rarity and conservation status:

Section A: White-margined Beardtongue Avoidance and Minimization Measures

To protect all white-margined beardtongue plants located within the project area or within 250 feet of its boundaries (including access roads, staging areas, laydown areas, parking and storage areas) from accidental and indirect impacts during construction, operation, and closure, the Project owner shall implement the following measures:

1. Designated Botanist. An experienced botanist who meets the qualifications described in Section **B-2** below shall oversee compliance with all special-status plant avoidance, minimization, and compensation measures described in this condition throughout construction, operation, and closure. The Designated Botanist shall oversee

and train all other Biological Monitors tasked with conducting botanical survey and monitoring work.

2. White-margined Beardtongue Impact Avoidance and Minimization Plan. The Project owner shall prepare and implement a White-margined Beardtongue Impact Avoidance and Minimization Plan and shall incorporate the Plan into the BRMIMP (**BIO-7).** The Plan shall be designed to prevent direct or indirect effects of project construction and operation to all white-margined beardtongue occurrences within the project boundary, and to any other special status plants including small-flowered androstephium located within Environmentally Sensitive Areas (defined below). The Plan shall include the following elements:

    a. Designate Environmentally Sensitive Areas (ESAs). Before construction, designate ESAs to protect all known white-margined beardtongue locations ~~on~~within the project site or within 250 feet of site boundaries. The ESAs shall include, at minimum, the approximately ~~18~~ 4.5 acres of white-margined beardtongue occurrences as identified on Applicant's Exhibit 57, Alternative Site Layout #2. The locations of ESAs shall be clearly depicted on construction drawings, which shall also include all avoidance and minimization measures on the margins of the construction plans. The boundaries of the ESAs shall provide a minimum of 250 feet buffer area between white-margined beardtongue plant locations and any ground-disturbing project activity. The ESAs shall be clearly delineated in the field with permanent fencing and signs prohibiting movement of the fence under penalty of work stoppages and additional compensatory mitigation. ESAs shall also be permanently marked (with signage or other markers) to ensure that avoided plants are not inadvertently harmed during construction, operation, or closure.

    b. Baseline data. Document baseline conditions, including numbers and areal extent of white-margined beardtongue and any other special-status plant occurrences within the ESAs;

    c. Success criteria. Specify success standards for protection of special-status plant occurrences within the ESAs, and identify specific triggers for remedial action (e.g., numbers of plants dropping below a threshold);

    d. Literature review. Describe and reference any available information about microhabitat preferences and fecundity, essential pollinators, reproductive biology, and propagation and culture requirements for white-margined beardtongue and any other special-status species within the ESAs;

    e. Protection and avoidance measures. Describe measures (e.g., fencing, signage) to avoid direct and indirect construction and operation impacts to special-status plants within the ESAs; these shall include but shall not be limited to: (1) training components specific to protection of white-margined beardtongue and surrounding habitat buffer

area, which shall be incorporated into the WEAP described in **BIO6;** (2) detailed specifications for avoiding herbicide and soil stabilizer drift, and shall include a list of herbicides and soil stabilizers that may be used on the Project with manufacturer's guidance on appropriate use; the Plan shall reference the Weed Management Plan (see Condition of Certification **BIO-11)** and shall be consistent with provisions of that Plan; (3) measures to ensure that erosion and sediment control do not inadvertently impact special-status plants located within an ESA (e.g., by using invasive or nonnative plants in seed mixes, introducing pest plants through contaminated seed or straw, etc.). Where applicable, these measures shall be incorporated in the Weed Management Plan and Storm Water Pollution Prevention Plan. Also, designate spoil areas; equipment, vehicle, and materials storage areas; parking; equipment and vehicle maintenance areas, and; wash areas at least 100 feet from boundaries of any ESAs;

f. Monitoring and Reporting Requirements. The Designated Botanist shall conduct weekly monitoring of the ESAs during any construction or decommissioning activities within 100 feet of the ESAs, and quarterly monitoring for the remainder of construction and during operations. For the life of the project, the Project owner shall also conduct annual monitoring of the avoided occurrences within ESAs on-site, and off-site occurrences that are within 250 feet from the project boundary and are located on public lands or on private lands to which the ~~Applicant~~Project owner has access. The project owner shall make reasonable attempts to obtain permission to enter adjacent private property for the purpose of rare plant monitoring (see Verification, below).

g. Remedial Action Measures. Specify remedial action measures to be implemented if success standards (above) are not met at any time during the life of the project;

h. Seed Collection. Over the life of the project, the project owner shall collect a small proportion of any available seed produced by white-margined beardtongue plants protected on-site within ESAs on an annual basis until propagation research (below) is complete and seed bank curators agree that sufficient seed has been placed into long-term storage. Seed collection must only be done under permit from the BLM; the project owner shall be responsible for obtaining and complying with applicable permit(s). The collection technique shall follow seed collection and storage guidelines contained in (Wall 2009a; Bainbridge 2007). Collection of seed shall be done by the Rancho Santa Ana Botanic Garden (RSABG) Conservation Program staff or other qualified seed or restoration specialist. The Project owner shall be responsible for all costs associated with seed collection and storage. All seed storage shall occur at RSABG or other qualified research institution and at least 40 percent of the collected seed shall remain in long-term storage at RSABG Seed Conservation Program, San Diego Natural History

Museum, or other qualified seed conservation program. In the event that construction schedules or seed production prevent collection within ESAs on-site, the ~~applicant~~project owner must substitute off-site seed collection site as approved by the CPM in consultation with the BLM State Botanist;

i. Propagation research. The project owner shall be responsible for evaluating potential white-margined beardtongue propagation and reintroduction methods with the objective of developing horticultural techniques suitable for eventual introduction of nursery-grown white-margined beardtongue on-site or off-site as remedial action measures if needed (paragraph g., above); a portion of seed (paragraph h., above) shall be made available for propagation research which may at some time inform contingency propagation efforts on the project site or elsewhere; propagation experimentation shall be funded by the project owner and conducted by a qualified research institution such as Rancho Santa Ana Botanic Garden and the results shall not be subject to a non-disclosure agreement. At minimum, propagation research shall include germination and seedling establishment trials under a variety of soil and humidity conditions reflecting the range of seasonal conditions found in the plant's natural habitat on the project site; plant growth from seedling to nursery stock size; and transplantation methods. These trials shall be conducted in part within growth chambers where temperature and humidity are controlled and in part on the project site or adjacent Pisgah ACEC under natural conditions.

j. Off-site sand transport monitoring and management. The White-margined Beardtongue Impact Avoidance and Minimization Plan shall include a sand transport monitoring and management section to document and manage project effects to eastward sand transport to occupied white-margined beardtongue aeolian sand habitat off-site to the east. At minimum, the plan shall include the following elements (1) quantify baseline eastward sand transport from the project area into the adjacent BLM Pisgah Crater ACEC, following methods described by Etyemezian et al. (2010); (2) specify methods and schedule for annual sand transport monitoring throughout the first five years of the project's life; (3) identification of thresholds which would trigger remediation requirements; and (4) development of adaptive management strategies to supplement eastward sand transport into the ACEC if needed. These strategies may include revisions to project fencing design, importing sand from off-site or transporting sand across the project site for further dispersal. No sand transport remediation work would be permitted to cause new land disturbance outside the project area as analyzed in this SSA.

k. Off-site weed monitoring and management. The White-margined Beardtongue Impact Avoidance and Minimization Plan shall include methods and schedule to monitor and manage weed abundance in

occupied and suitable white-margined beardtongue habitat to the east. At minimum, the plan shall (1) quantify baseline weed abundance in the portion of the ACEC adjacent BLM Pisgah Crater ACEC, adjacent to and within 500 m of the eastern project boundary, north of the BNSF railroad tracks; (2) weed abundance monitoring schedule and methods to implement throughout that area by collecting and analyzing quantitative weed abundance during every year of average or greater rainfall throughout the life of the project; (3) identify weed abundance thresholds which would trigger remediation requirements; and (4) specify weed control methods to be implemented as needed in occupied and suitable white-margined beardtongue habitat throughout the area described above.

MOJAVE FRINGE-TOED LIZARD MITIGATION

BIO-13 The project owner shall provide compensatory land to mitigate for habitat loss and direct impacts to Mojave fringe-toed lizards based on revised estimates of suitable Mojave fringe-toed lizard habitat on-site, to be verified by an expert in this animal's ecology. The project owner shall provide compensatory mitigation at a 3:1 ratio for impacts to breeding habitat (i.e., dune, sand ramp, or fine-sandy wash habitat), and at a 1:1 ratio for impacts to adjacent suitable foraging and cover habitat, such as thin aeolian sand overlying bajada surfaces, or foraging habitat surrounding the breeding habitat. Staff estimates breeding habitat on site as 4.5~~21.4~~ acres, and surrounding suitable foraging and cover habitat (i.e., 45 meter buffer) as 91.0~~143.3~~ acres. Therefore, staff concludes this condition would require the acquisition and dedication in perpetuity of 104.5~~207.5~~ acres of habitat. The project owner shall provide funding for the acquisition, initial habitat improvements, and long-term management of the compensation lands, as described below.

Biological Resources Table 17
Mojave Fringe-toed Lizard Compensation Acreage Summary

Habitat Function	Project Impact Acreage	Mitigation Ratio	Compensation Acreage
Foraging and cover	91.0~~143.3~~ acres	1:1	91.0~~143.3~~ acres
Breeding	4.5~~21.4~~acres	3:1	13.5~~64.2~~ acres
Total	95.5~~164.7~~ acres		104.5~~207.5~~ acres

This compensation acreage may be included ("nested") within the acreage acquired and managed as desert tortoise habitat compensation (Condition of Certification **BIO-17)** only if:

Adequate acreage of qualifying desert tortoise compensation lands also meet the Selection Criteria (below) as habitat for Mojave fringe-toed lizard;

The desert tortoise habitat compensation lands are acquired and dedicated as permanent conservation lands within 18 months of the start of project construction.

If these two criteria are not met, then the project owner shall provide the required number of acres of Mojave fringe-toed lizard habitat compensation lands, adjusted to reflect the final project footprint and additional delineation of suitable habitat, independent of any compensation land required under other conditions of certification, and shall also provide funding for the initial improvement and long-term maintenance and management of the acquired lands, and shall comply with other related requirements this condition. Costs of these requirements are estimated to be $381,896~~$674,211.24~~ based on the acquisition of 104.5~~207.5~~ acres (see **Revised Biological Resources Tables 5** and **6** for a complete breakdown of estimated costs). Regardless of actual cost, the project owner shall be responsible for funding all requirements of this condition.

The project owner shall provide financial assurances as described below, in the amount of $374,947~~$660,416.25~~. In lieu of acquiring lands itself, the Project owner may satisfy the requirements of this condition by providing funds for the acquisition to the Renewable Energy Action Team (REAT) Account established with the National Fish and Wildlife Foundation (NFWF), as described below. If the Project owner elects to establish a REAT NFWF Account and have NFWF and the resource agencies complete the required habitat compensation, then the total estimated cost of complying with this condition is $381,896~~$674,211.24~~. The amount of security or NFWF deposit shall be adjusted up or down to reflect any revised cost estimates recommended by REAT.

The actual costs to comply with this condition will vary depending on the final footprint of the Project, the actual costs of acquiring compensation habitat, the costs of initially improving the habitat, and the actual costs of long-term management as determined by a Property Analysis Report (below). The 104.5 ~~207.5~~ acre habitat requirement, and associated funding requirements based on that acreage, shall be adjusted up or down if there are changes in the final footprint of the project or the associated costs of evaluation, acquisition, management, and other factors listed in **Revised Biological Resources Tables 5** and **6.** Regardless of actual cost, the project owner shall be responsible for implementing all aspects of this condition.

COMPENSATORY MITIGATION LAND ACQUISITION

1. Method of Acquisition. Compensation lands shall be acquired by either of the two options listed below. Regardless of the method of acquisition, the transaction

shall be complete only upon completion of all terms and conditions described in this Condition of Certification.

a. The project owner shall acquire lands and transfer title and/or conservation easement to a state or federal land management agency or to a third-party non-profit land management organization, as approved by the CPM in consultation with BLM, CDFG, and USFWS; or

b. The Project owner shall deposit funds into a project-specific subaccount within the REAT Account established with the NFWF, in the amount as indicated in **Revised Biological Resources Tables 5** and **6** (adjusted to reflect final project footprint and any applicable REAT adjustments to costs).

2. Selection Criteria for Compensation Lands. The compensation lands selected for acquisition to meet Energy Commission requirements shall:

a. Be sand dune or partially stabilized sand dune habitat with potential to contribute to Mojave fringe-toed lizard habitat connectivity and build linkages between known populations of Mojave fringe-toed lizards and preserve lands with suitable habitat;

b. Be biologically contiguous to lands currently occupied by Mojave fringe-toed lizard;

c. Be near larger blocks of lands that are either already protected or planned for protection, or which could feasibly be protected long-term by a public resource agency or a non-governmental organization dedicated to habitat preservation;

d. Provide quality habitat for Mojave fringe-toed lizard, that has the capacity to regenerate naturally when disturbances are removed;

e. Not have a history of intensive recreational use or other disturbance that might make habitat recovery and restoration infeasible;

f. Not be characterized by high densities of invasive species, either on or immediately adjacent to the parcels under consideration, that might jeopardize habitat recovery and restoration;

g. Not contain hazardous wastes;

h. Have water and mineral rights included as part of the acquisition, unless the CPM, in consultation with CDFG, BLM and USFWS, agrees in writing to the acceptability of land without these rights; and

i. Be on land for which long-term habitat management for Mojave fringe-toed lizard and other native biological resources is feasible.

3. Review and Approval of Compensation Lands Prior to Acquisition. The project owner shall submit a formal acquisition proposal to the CPM describing the parcel(s) intended for purchase. This acquisition proposal shall discuss the suitability of the proposed parcel(s) as compensation lands for Mojave fringe-toed lizard in relation to the criteria listed above and must be approved by the CPM. The

CPM will share the proposal with and consult with CDFG, BLM, and the USFWS before deciding whether to approve or disapprove the proposed acquisition.

4. Compensation Lands Acquisition Conditions: The project owner shall comply with the following conditions relating to acquisition of the compensation lands after the CPM, in consultation with CDFG, BLM and the USFWS, have approved the proposed compensation lands:

    a. Preliminary Report: The Project owner, or approved third party, shall provide a recent preliminary title report, initial hazardous materials survey report, biological analysis, and other necessary or requested documents for the proposed compensation land to the CPM. All documents conveying or conserving compensation lands and all conditions of title are subject to review and approval by the CPM, in consultation with CDFG, BLM and the USFWS. For conveyances to the State, approval may also be required from the California Department of General Services, the Fish and Game Commission and the Wildlife Conservation Board.

    b. Title/Conveyance: The Project owner shall acquire and transfer fee title to the compensation lands, a conservation easement over the lands, or both fee title and conservation easement as required by the CPM in consultation with CDFG. Any transfer of a conservation easement or fee title must be to CDFG, a non-profit organization qualified to hold title to and manage compensation lands (pursuant to California Government Code section 65965), or to BLM or other public agency approved by the CPM in consultation with CDFG. If an approved non-profit organization holds fee title to the compensation lands, a conservation easement shall be recorded in favor of CDFG or another entity approved by the CPM. If an approved non-profit holds a conservation easement, CDFG shall be named a third party beneficiary. If an entity other than CDFG holds a conservation easement over the compensation lands, the CPM may require that CDFG or another entity approved by the CPM, in consultation with CDFG, be named a third party beneficiary of the conservation easement. The Project owner shall obtain approval of the CPM, in consultation with CDFG, of the terms of any transfer of fee title or conservation easement to the compensation lands.

    c. Property Analysis Record: Upon identification of the compensation lands, the Project owner shall conduct a Property Analysis Record (PAR) or PAR-like analysis to establish the appropriate amount of the long-term maintenance and management fund to pay the in-perpetuity management of the compensation lands. The PAR or PAR-like analysis must be approved by the CPM, in consultation with CDFG, before it can be used to establish funding levels or management activities for the compensation lands.

5. Compensation Lands Acquisition Costs: The Project owner shall pay all other costs related to acquisition of compensation lands and conservation easements. In addition to actual land costs, these acquisition costs shall include but shall not be

limited to the items listed below. Management costs including site cleanup measures are described separately, in the following section.

a. Level 1 Environmental Site Assessment;
b. Appraisal;
c. Title and document review costs;
d. Expenses incurred from other state, federal, or local agency reviews;
e. Closing and escrow costs;
f. Overhead costs related to providing compensation lands to CDFG or an approved third party;
g. Biological survey(s) to determine mitigation value of the land; and
h. Agency costs to accept the land (e.g., writing and recording of conservation easements; title transfer).

COMPENSATORY MITIGATION LAND IMPROVEMENT

Land Improvement Requirements: The Project owner shall fund activities that the CPM, in consultation with the CDFG, USFWS and BLM, requires for the initial protection and habitat improvement of the compensation lands. These activities will vary depending on the condition and location of the land acquired, but may include surveys of boundaries and property lines, installation of signs, trash removal and other site cleanup measures, construction and repair of fences, invasive plant removal, removal of roads, and similar measures to protect habitat and improve habitat quality on the compensation lands.

The costs of these activities are estimated at $250 an acre, but will vary depending on the measures that are required for the compensation lands. A non-profit organization, CDFG or another public agency may hold and expend the habitat improvement funds if it is qualified to manage the compensation lands (pursuant to California Government Code section 65965), if it meets the approval of the CPM in consultation with CDFG, and if it is authorized to participate in implementing the required activities on the compensation lands. If CDFG takes fee title to the compensation lands, the habitat improvement fund must be paid to CDFG or its designee.

COMPENSATORY MITIGATION LAND LONG-TERM MANAGEMENT

1. Long-term Management Requirements: Long-term management is required to ensure that the compensation lands are managed and maintained to protect and enhance habitat for Mojave fringe-toed lizard. Management activities may include maintenance of signs, fences, removal of invasive weeds, monitoring, security and enforcement, and control or elimination of unauthorized use.

2. Long-term Management Plan. The project owner shall pay for the preparation of a Management Plan for the compensation lands. The Management Plan shall reflect site-specific enhancement measures on the acquired compensation lands. The plan shall be submitted for approval of the CPM, in consultation with CDFG, BLM and USFWS.

3. Long-Term Maintenance and Management Funding. The Project owner shall provide money to establish an account with a long-term maintenance and management that will be used to fund the long-term maintenance and management of the compensation lands. The amount of money to be paid will be determined through an approved PAR or PAR-like analysis conducted for the compensation lands. The amount of required funding is initially estimated to be $1,450 for every acre of compensation lands. If compensation lands will not be identified and a PAR or PAR-like analysis completed within the time period specified for this payment (see the verification section at the end of this condition), the project owner shall provide initial payment of $1,450 an acre for the acres identified in the verified and approved delineation of habitat required by this condition, or if the delineation is not completed, shall provide $151,525~~$300,875~~ calculated at $1,450 an acre for 104.5~~207.5~~ acres into an account for long-term maintenance and management of compensation lands. The amount of the required initial payment or security for this item shall be adjusted for any change in the Project footprint as described above. If an initial payment is made based on the estimated per-acre costs, the project owner shall deposit additional money as may be needed to provide the full amount of long-term maintenance and management funding indicated by a PAR or PAR-like analysis, once the analysis is completed and approved. If the approved analysis indicates less than $1,450 an acre will be required for long-term maintenance and management, the excess paid will be returned to the Project owner.

The project owner must obtain the CPM's approval of the entity that will receive and hold the long-term maintenance and management fund for the compensation lands. The CPM will consult with CDFG before deciding whether to approve an entity to hold the project's long-term maintenance and management funds. The CPM, in consultation with CDFG, may designate another non-profit organization to hold the long-term maintenance and management fee if the organization is qualified to manage the compensation lands in perpetuity.

If CDFG takes fee title to the compensation lands, CDFG shall determine whether it will hold the long-term management fee in the special deposit fund, leave the money in the REAT Account, or designate another entity to manage the long-term maintenance and management fee for CDFG and with CDFG supervision.

The Project owner shall ensure that an agreement is in place with the long-term maintenance and management fee holder/manager to ensure the following conditions:

i. Interest. Interest generated from the initial capital shall be available for reinvestment into the principal and for the long-term operation, management, and protection of the approved compensation lands, including reasonable administrative overhead, biological monitoring, improvements to carrying capacity, law enforcement measures, and any other action designed to protect or improve the habitat values of the compensation lands.

ii. Withdrawal of Principal. The long-term maintenance and management fee principal shall not be drawn upon unless such withdrawal is deemed necessary by the CPM, in consultation with CDFG, or the approved third-party long-term maintenance and management fee manager to ensure the continued viability of the species on the compensation lands. If CDFG takes fee title to the compensation lands, monies received by CDFG pursuant to this provision shall be deposited in a special deposit fund established solely for the purpose to manage lands in perpetuity unless CDFG designates NFWF or another entity to manage the long-term maintenance and management fee for CDFG.

iii. Pooling Funds. A CPM-approved non-profit organization qualified to hold long-term maintenance and management fees solely for the purpose to manage lands in perpetuity, may pool the fund with other funds for the operation, management, and protection of the compensation lands for local populations of Mojave fringe-toed lizard. However, for reporting purposes, the long-term maintenance and management fee fund must be tracked and reported individually to the CPM.

iv. Reimbursement Fund. The project owner shall provide reimbursement to CDFG or an approved third party for reasonable expenses incurred during title, easement, and documentation review; expenses incurred from other State or State-approved federal agency reviews; and overhead related to providing compensation lands.

COMPENSATORY MITIGATION LAND SECURITY

Compensation Mitigation Security: The project owner shall provide security sufficient for funding acquisition, improvement, and long-term management of Mojave fringe-toed lizard compensation land. Financial assurance can be provided to the CPM in the form of an irrevocable letter of credit, a pledged savings account or another form of security ("Security"). Prior to submitting the Security to the CPM, the Project owner shall obtain the CPM's approval, in consultation with CDFG, BLM and the USFWS, of the form of the Security.

The security amount shall be based on the estimates provided in **Revised Biological Resources Tables 5** and **6.** This amount shall be updated and

verified prior to payment and shall be adjusted to reflect actual costs or more current estimates as agreed upon by the REAT agencies.

The Project owner shall provide verification that financial assurances have been established to the CPM with copies of the document(s) to BLM, CDFG and the USFWS, to guarantee that an adequate level of funding is available to implement any of the mitigation measures required by this condition that are not completed prior to the start of ground-disturbing activities described in Section A of this condition.

In the event that the project owner defaults on the Security, the CPM may use money from the Security solely for implementation of the requirements of this condition. The CPM's use of the security to implement measures in this condition may not fully satisfy the Project owner's obligations under this condition. Any amount of the Security that is not used to carry out mitigation shall be returned to the Project owner upon successful completion of the associated requirements in this condition.

Security for the requirements of this condition shall be provided in the amount of $374,947~~$660,416.25~~ (or $381,896~~$674,211.24~~ if the project owner elects to use the REAT Account with NFWF pursuant to paragraph 4 of this condition, below). The Security is calculated in part from the items that follow but adjusted as specified below (consult **Revised Biological Resources Tables 5** and **6** for the complete breakdown of estimated costs). However, regardless of the amount of the security or actual cost of implementation, the project owner shall be responsible for implementing all aspects of this condition.

Verification: The project owner shall provide the CPM with written notice of intent to start ground disturbance at least 30 days prior to the start of ground-disturbing activities on the project site.

If the mitigation actions required under this condition are not completed at least 30 days prior to the start of ground-disturbing activities, the Project owner shall provide the CPM and CDFG with an approved Security for such phase in accordance with this condition of certification no later than 30 days prior to beginning Project ground-disturbing activities. Prior to submitting the Security to the CPM, the project owner shall obtain the CPM's approval, in consultation with CDFG, BLM and the USFWS, of the form of the Security. The project owner, or an approved third party, shall complete and provide written verification to the CPM, CDFG, BLM and USFWS of the compensation lands acquisition and transfer within 18 months of the start of Project ground-disturbing activities.

No later than 12 months after the start of any phase of ground-disturbing project activities, the project owner shall submit a formal acquisition proposal to the CPM describing the parcels intended for purchase, and shall obtain approval from the CPM, in consultation with CDFG, BLM and USFWS, prior to the acquisition. If NFWF or another approved third party is handling the acquisition, the project owner shall fully cooperate with the third party to ensure the proposal is submitted within this time period. The project owner or an approved third party shall complete the acquisition and all required transfers of the compensation lands, and provide written verification to the CPM, CDFG, BLM and USFWS of such completion, no later than 18 months after the issuance of the Energy Commission Decision. If NFWF or another approved third party is being used for the acquisition, the project owner shall ensure that funds needed to accomplish the acquisition are transferred in timely manner to facilitate the planned acquisition and to ensure the land can be acquired and transferred prior to the 18-month deadline.

The project owner shall complete and submit to the CPM a PAR or PAR-like analysis no later than 60 days after the CPM approves compensation lands for acquisition associated with any phase of construction. The project owner shall fully fund the required amount for long-term maintenance and management of the compensation lands for that phase of construction no later than 30 days after the CPM approves a PAR or PAR-like analysis of the anticipated long-term maintenance and management costs of the compensation lands. Written verification shall be provided to the CPM and CDFG to confirm payment of the long-term maintenance and management funds.

No later than 60 days after the CPM determines what activities are required to provide for initial protection and habitat improvement on the compensation lands for any phase of construction, the project owner shall make funding available for those activities and provide written verification to the CPM of what funds are available and how costs will be paid. Initial protection and habitat improvement activities on the compensation lands for that phase of construction shall be completed, and written verification provided to the CPM, no later than six months after the CPM's determination of what activities are required on the compensation lands.

The project owner, or an approved third party, shall provide the CPM, CDFG, BLM and USFWS with a management plan for the compensation lands associated with any phase of construction within180 days of the land or easement purchase, as determined by the date on the title. The CPM, in consultation with CDFG, BLM and the USFWS, shall approve the management plan after its content is acceptable to the CPM.

Within 90 days after completion of all project related ground disturbance, the project owner shall provide to the CPM, CDFG, BLM and USFWS an analysis, based on aerial

photography, with the final accounting of the amount of habitat disturbed during Project construction. This shall be the basis for the final number of acres required to be acquired.

DESERT TORTOISE COMPENSATORY MITIGATION

BIO-17 The project owner shall provide compensatory mitigation acreage of ~~10,302~~ 7,469 acres of desert tortoise habitat lands, adjusted to reflect the final project footprint, as specified in this condition. In addition, the project owner shall provide funding for initial improvement and long term maintenance, enhancement, and management of the acquired lands for protection and enhancement of desert tortoise populations, and comply with other related requirements of this condition. This acreage was calculated as follows: a ratio of 1:1 for the project area south of the BNSF railroad tracks (~~2,140~~ 2,042 acres); a ratio of 3:1 ratio for ~~2,104~~ 1,809 acres of the project area north of the BNSF railroad tracks~~; and a ratio of 5:1 for 370 additional acres north of the BNSF railroad tracks~~. See **Table,** below.

Desert Tortoise Compensation Acreage Summary:

Location	**Project Impact**	**Mitigation Ratio**	**Compensation**
	Acreage		**Acreage**
South of BNSF RR	~~2,140~~ 2,042 acres	1:1	~~2,140~~ 2,042acres
North of BNSF RR ~~(southern Phase 1b~~	~~2..104~~1,809 acres	3:1	~~6,312~~ 5,427 acres
~~Far North of BNSF RR (northern Phase 2~~	~~370 0 acres~~	~~5:1~~	~~1,850 0 acres~~
~~**Scenario 5.5 Total**~~ **for Project**	~~**4,613**~~ 3,851 **acres**		~~**10,302**~~ 7,469 **acres**

Costs of these requirements are estimated to be ~~$31,079,934.00~~ $23,444,595 for ~~Scenario 5.5~~the Project (see Ex. 317, **Biological Resources Addendum Tables 5** and **7** for a complete breakdown of costs and acreage).

As many as ~~4,613~~ 3,851 acres of the compensation lands requirement may be satisfied by ~~applicant~~project owner's compliance with the desert tortoise habitat acquisition or enhancement requirements of BLM, to be calculated as an acre-for-acre offset in the Energy Commission requirement for mitigation provided to satisfy BLM's requirements. For purposes of this paragraph, credit will be given for BLM-required mitigation without regard to whether BLM uses the mitigation funds for habitat acquisition or for enhancement projects to benefit the species.

These impact acreages shall be adjusted to reflect the final project footprint. For purposes of this condition, the Project footprint means all lands disturbed in the construction and operation of the Calico Solar Project, including all linear project components, as well as all undeveloped areas inside the Project's boundaries.

The project owner shall provide financial assurances as described below in the amount of ~~$31,079,934.00~~ $23,444,595. In lieu of acquiring lands itself, the Project owner may satisfy the requirements of this condition by depositing funds into a Renewable Energy Action Team (REAT) Account established with the National Fish and Wildlife Foundation (NFWF), as described below. If the Project owner elects to establish a REAT NFWF Account and have NFWF and the agencies complete the required habitat compensation, then the total estimated cost of complying with this condition is ~~$31,755,574.02~~ $23,937,325. The amount of security or NFWF deposit shall be adjusted up or down to reflect any revised cost estimates recommended by REAT.

The actual costs to comply with this condition will vary depending on the final footprint of the Project, the costs of acquiring compensation habitat, the costs of initially improving the habitat, and the actual costs of long-term management as determined by a Property Analysis Report or similar analysis (below). The 3,851 ~~4,613~~ acre habitat requirement, and associated funding requirements based on that acreage, shall be adjusted up or down if there are changes in the final footprint of the project or the associated costs of evaluation, acquisition, management, and other factors listed in **Biological Resources Addendum Tables 5** and **7.** Regardless of actual cost, the project owner shall be responsible for funding all requirements of this condition.

COMPENSATORY MITIGATION LAND SECURITY

1. Compensation Mitigation Security: The project owner shall provide security sufficient for funding acquisition, improvement, and long-term management of desert tortoise compensation land. Financial assurance can be provided to the CPM in the form of an irrevocable letter of credit, a pledged savings account or another form of security ("Security"). Prior to submitting the Security to the CPM, the Project owner

shall obtain the CPM's approval, in consultation with CDFG, BLM and the USFWS, of the form of the Security.

The security amount shall be based on the estimates provided in **Biological Resources Addendum Tables 5** and **7.** This amount shall be updated and verified prior to payment and shall be adjusted to reflect actual costs or more current estimates as agreed upon by the REAT agencies.

The Project owner shall provide verification that financial assurances have been established to the CPM with copies of the document(s) to BLM, CDFG and the USFWS, to guarantee that an adequate level of funding is available to implement any of the mitigation measures required by this condition that are not completed prior to the start of ground-disturbing activities described in Section A of this condition.

In the event that the project owner defaults on the Security, the CPM may use money from the Security solely for implementation of the requirements of this condition. The CPM's use of the security to implement measures in this condition may not fully satisfy the Project owner's obligations under this condition. Any amount of the Security that is not used to carry out mitigation shall be returned to the Project owner upon successful completion of the associated requirements in this condition.

Security for the requirements of this condition shall be provided in the amount of $23,444,595 ~~$31,079,934~~ (or $23,973,325 ~~$31,755,57.02~~ if the project owner elects to use the REAT Account with NFWF pursuant to paragraph 4 of this condition, below). The Security is calculated in part from the items that follow but adjusted as specified below (consult **Biological Resources Addendum Tables 5** and **7** for the complete breakdown of estimated costs). However, regardless of the amount of the security or actual cost of implementation, the project owner shall be responsible for implementing all aspects of this condition.

STREAMBED IMPACT MINIMIZATION AND COMPENSATION MEASURES

BIO-26 The project owner shall implement the following measures to avoid, minimize and mitigate for direct and indirect impacts to jurisdictional waters of the State and to satisfy requirements of California Fish and Game Code sections 1600 and 1607. Throughout this condition, "jurisdictional" refers to streambeds or acreages of streambed meeting CDFG criteria as waters of the State.

Section A: Acquire Off-Site State Waters.

The project owner shall acquire, in fee or in easement, a parcel or parcels of land that includes no fewer than 114.7 ~~152.3~~ acres of State jurisdictional waters. Prior to construction the applicant shall map the vegetation with emphasis on desert wash, including microphyll woodland, communities within the drainages subject to project disturbance and provide a map to the CPM, CDFG and BLM. The parcel or parcels comprising the 114.7 ~~152.3~~ acres of ephemeral washes shall include the same types of vegetation as mapped in the project footprint.

PROJECT CONSTRUCTION AND COMPENSATION PHASING PLAN

BIO-31 As an alternative to providing mitigation or security for the entire project prior to the start of the first ground-disturbing activities, the Project Owner may elect to provide compensatory mitigation for the total Project Disturbance Area in two phases and may elect to provide security in three phases as specified in this condition.

Only the phases identified as Phase 1~~a, Phase 1b,~~ and Phase 2, as described in this condition, in text and maps provided ~~on September 10, 2010~~in the Petition for Amendment by the Project Owner ~~(tn: 58411, Applicant's submittal of Updated Reduced Project Boundary Scenarios 5.5 or Figures 17 and 18 [Scenario 5.5])~~ may be used for the phasing of mitigation and security requirements. To the extent those sources are found to contain conflicting information about Project phasing, the description in this condition shall control. ~~In particular, the Project Owner has divided the project's Phase 1 activities into two separate sub-phases, identified as Phase 1 a and Phase 1 b, since the Supplemental Staff Assessment was prepared.~~ This condition presumes that the phases identified in this condition are identical to the phases that the Bureau of Land Management (BLM) will authorize work on through issuance of "notices to proceed"; if phases used by BLM are not identical to the phases as described in this condition and the materials identified above, the Project Owner shall obtain separate written authorization from the CPM prior to beginning work on each of the ~~three~~two phases.

~~For purposes of this condition:~~

~~"Project Disturbance Area" or "ground disturbance area" means all areas that will be temporarily or permanently disturbed during construction or operation of the Project, including all linear facilities.~~

~~"Project footprint" means the Project Disturbance Area and undeveloped areas inside the Project's boundaries that will no longer provide functional habitat value, including but not limited to desert tortoise habitat, Mojave fringe-toed lizard habitat, burrowing owl habitat, rare plant habitat, and areas within ephemeral washes and drainages.~~

~~"Project construction" or "construction" means any ground-disturbing activity, including but not limited to construction work, site mobilization, fence construction, or any tortoise translocation activities.~~

~~"Security" means the security that is required under other biological conditions of certification to ensure required mitigation measures will be implemented, or payments by the Project Owner into the National Fish and Wildlife Service mitigation account in accordance with the option provided in other conditions of certification.~~

Overview of Project Phases

~~Phase 1a is strictly limited to construction of the main access road, the waterline, the Main Services Area, the substation area, the installation of 60 SunCatcher pedestals, the temporary at-grade crossing over the Burlington Northern Santa Fe (BNSF) railroad tracks, the permanent bridge spanning the railroad tracks, and any surveys, translocations, or other activities required within the Phase 1a area that are required by Commission Conditions of Certification. The ground disturbance area during Phase 1a shall be no greater than 250 acres and shall be limited to the geographic areas indicated on the maps identified above.~~

~~Phase 1 b is strictly limited to construction of solar fields and related facilities located throughout the remainder of the area identified as Phase 1 in the Supplemental Staff Assessment and in applicant's Scenario 5.5 6 (tn: 58411, Applicant's submittal of Updated Reduced Project Boundary Scenarios 5.5 Information), and any surveys, translocations, or other activities required within the Phase 1 b area that are required by Commission Conditions of Certification. The ground disturbance area during Phase 1b shall be limited to the areas indicated on the maps identified above.~~

The majority of Phase 1 of the project is located south of the Burlington Northern Santa Fe (BNSF) Railway tracks and will include construction of the perimeter and desert tortoise fencing for Phase 1 and the main access road from the site access at the BLM Open Route extension of Hector Road. It also includes construction of the main services complex, the substation, the water well (north of the tracks) and waterline to the main services complex, and the solar field consisting of Photovoltaic modules mounted on

single axis tracking or fixed tilt systems to produce up to 275 MW (AC). The water well and the waterline are located in the Project area north of the railroad tracks and will be constructed during Phase 1.

Phase 2 ~~is strictly limited to the remainder of the project site as identified as Scenario 5.5 in applicant's maps (tn: 58411, Applicant's submittal of Updated Reduced Project Boundary Scenarios 5.5).~~of the project includes construction of the perimeter and desert tortoise fencing for the Project area north of the railroad tracks, the bridge over the BNSF tracks and the continuation of the main access road. It also includes construction of the solar field which will be comprised of up to 388.5 MW (AC) of single axis tracking and/or fixed tilt PV modules.

General Requirements

At no time may the Project Owner ~~cause~~ perform ground-disturbance to any location outside of the area that has been approved for construction according to the phasing plan identified in this Condition of Certification without the approval of the CPM.

Prior to initiating construction in any phase of the Project, the Project Owner shall comply with all pre-construction requirements in this and other Conditions of Certification and shall notify the CPM that it has obtained a Notice to Proceed for the phase or subphase from the BLM.

Construction activities, including work on linear and non-linear features, shall not occur outside desert tortoise exclusion areas that have been fenced and cleared in accordance with USFWS protocols and as described in Condition of Certification **BIO-15** (Desert Tortoise Clearance and Exclusion Fencing).

The Project Owner shall provide security to ensure implementation of the mitigation requirements in Conditions of Certification **BIO-12** (Special-Status Plant Impact and Avoidance and Minimization), **BIO-13** (Mojave Fringe-Toed Lizard Mitigation), **BIO-16** (Desert Tortoise Translocation Plan), **BIO-17** (Desert Tortoise Compensatory Mitigation), **BIO-21** (Burrowing Owl Impact Avoidance and Minimization Measures), and **BIO-26** (Streambed Impact Minimization and Compensation Measures) for each of the three phases prior to any Project construction associated with that phase. Phasing of security only applies to security required by the Conditions listed above. If the Project Owner elects to phase payments of security, the amount of the security (including payments to NFWF [see definition of security above]) will be adjusted by the CPM in consultation with CDFG, BLM and USFWS prior to each phase to reflect the CPM's best estimate at that time of the estimated costs of land acquisition, long-term management and maintenance costs, and other costs that are

included in the security computation. Those costs may be greater than the costs identified in the Conditions of Certification.

Even when security has been provided, the Project Owner shall complete the acquisition, protection and transfer of all compensation lands required in the Conditions of Certification listed above, as well as all funding requirements associated with those lands, within the time periods identified in those Conditions of Certification, except that the time period for providing compensation lands and funding associated with ~~both Phases~~Phase 1~~a and 1b~~ shall be measured from the start of construction of Phase ~~1a alone,~~1, and the period for providing lands and funding required for Phase 2 activities shall be measured from the start of construction of Phase 2.

Additional requirements within the Project's Conditions of Certification that are not expressly phased in this Condition shall be phased as necessary to carry out the purpose of this condition, or to ensure that no project construction occurs in an area for which the Project Owner has not provided security and obtained permission to begin construction. Examples may include such activities as construction and location of desert tortoise exclusion fencing or timing of pre-construction clearance surveys for other species. The Project Owner shall first obtain approval from the CPM, acting in consultation with BLM, CDFG and USFWS, for the phasing of any requirements or deadlines that are not expressly phased in Conditions of Certification.

Detailed Phasing Requirements

Phased impacts and compensation requirements are described in tables below, by phase.

Phase 1~~a~~

Phase 1~~a~~ would result in the loss or isolation of ~~250~~2,054 acres of desert tortoise habitat from the placement of fencing, road construction, and the development of project facilities. ~~The construction and fencing of the temporary and Main Access Road would also result in the temporary isolation of approximately 650 acres of desert tortoise habitat.~~ In addition, proposed Phase 1~~a~~ Project construction would affect Mojave Fringe-Toed Lizard habitat and would affect state-jurisdictional streambeds and, possibly, burrowing owl or rare plant locations that are identified during pre-construction and late-season botanical surveys. The ~~applicant~~ project owner shall provide an enumeration of streambed, burrowing owl, and rare plant habitat impacts and shall provide security for required compensation those impacts as described in Conditions of Certification **BIO-12** (Special-Status Plant Impact and Avoidance and Minimization), **BIO-13** (Mojave Fringe-Toed Lizard Mitigation), **BIO-16** (Desert Tortoise Translocation Plan), **BIO-17**

(Desert Tortoise Compensatory Mitigation), **BIO-21** (Burrowing Owl Impact Avoidance and Minimization Measures), and **BIO-26** (Streambed Impact Minimization and Compensation Measures) prior to initiating Project construction associated with Phase ~~1a,~~1. as set forth in the verification section of this Condition.

All project access throughout Phase 1~~a~~ construction shall be via temporary or permanent access as mapped by the ~~applicant. Isolation of desert tortoise habitat between the proposed temporary and permanent construction access routes shall be limited to winter months when tortoises are largely inactive~~ project owner. Desert tortoise exclusion fencing shall be installed along the existing temporary construction access routes to allow access and construction of the well and waterline north of the railway prior to other ground disturbance at the project site, and fencing shall be maintained as described in Condition of Certification **BIO-15** (Desert Tortoise Clearance and Exclusion Fencing) until completion of the proposed Main Access Road. Desert tortoise exclusion fencing shall be installed along the proposed Main Access Road alignment prior to beginning construction of that road. ~~If project-related access along the temporary construction access route continues beyond March 15, 2011, the Project Owner shall provide additional security to the CPM for all acreage within the area isolated between the two fenced access routes (estimated by staff as approximately 650 acres) by March 15, 2011 and shall implement desert tortoise clearance surveys and translocation of any tortoises within the isolated area consistent with the requirements of Condition of Certification **BIO-15** (Desert Tortoise Clearance and Exclusion Fencing) . If the Main Access Road is complete by March 15, 2011 and no further project access via the temporary route is necessary, desert tortoise fencing along the temporary access road shall be removed on or before March 15, 2011~~

BIO-31 Table ~~1a.~~1.
Phase 1~~a~~ Impacts and Compensation Acreage ~~(Scenario 5.5)~~

~~Resource~~	~~Phase 1a Impact (acres) and Mitigation Ratios~~	~~Compensation (acres)~~
~~Direct impact: Desert tortoise habitat~~	~~56 ac. S of BNSF at 1:1 194 ac. N of BNSF at 3:1~~	~~56 582~~
~~State Jurisdictional streambed [1]~~	~~[to be provided by Project Owner] at 1:1~~	

Mojave fringe-toed lizard [1]	0	000

Total per-acre basis for Phase 1a Security (through		**638[2] acres**
Potential impact: Isolation of desert tortoise habitat (after 15 March 2011)	650 acres at 1:1 [staff estimate; to be verified by Project Owner]	650 acres
Total per-acre basis for Phase 1a Security (after 15 March 2011, pending status of temporary access route)		**1,288 [2] acres**

1. Compensation may be nested within desert tortoise compensation land.

2. Acreages to be adjusted upon completion of each construction phase and upon confirmation by CPM in consultation with CDFG, USFWS, and BLM of acres impacted.

Phase 1b

Phase 1 b consists of solar generators in the central portion of the project area, north of the BNSF railroad. Phase 1 b would directly impact 1,626 acres of desert tortoise habitat. Compensation mitigation ratios for these project components shall be as described in Condition of Certification **BIO-17**(Desert Tortoise Compensatory Mitigation). Construction of stormwater detention basins and debris basins that may be constructed during Phase 1b, pending hydrology analyses and BNSF review pursuant to Condition of Certification **SOIL AND WATER-8** will also result in direct impacts to State jurisdictional streambeds located downstream in portions of Phase 2. For that reason, all jurisdictional waters that occur below any future detention basins may also be included in the calculation of Phase 1 b security and in the calculation of Phase 1 mitigation requirements. In addition, proposed Phase 1 b Project construction could affect burrowing owl or rare plant locations that may be identified during pre-construction and late-season botanical surveys required in the Conditions of Certification described below. The applicant shall provide the CPM with an enumeration of burrowing owl and rare plant habitat impacts and shall provide security for required compensation of those impacts as described in Conditions of

~~Certification **BIO-12** (Special-Status Plant Impact and Avoidance and Minimization), **BIO-17**(Desert Tortoise Compensatory Mitigation), **BIO-21** (Burrowing Owl Impact Avoidance and Minimization Measures), and **BIO-26** (Streambed Impact Minimization and Compensation Measures). Security shall be provided prior to the start of any Phase 1 b construction, as set forth in the verification section of this Condition, or prior to September 1, 2011, whichever occurs first.~~

~~BIO-31 Table 1b.~~
~~Phase 1b Impacts and Compensation Acreage (Scenario 5.5)~~

Resource	Phase 1~~b~~ Impact (acres) and Mitigation	Compensation (acres)
Direct impact: Desert tortoise habitat ~~(excluding disturbed or isolated acreage reported above in Phase 1a)~~	~~1,626~~2,042 ac. S of BNSF at 1:1 4 ac. N of BNSF at 3:1	~~4,878 acres~~2,054
State Jurisdictional streambed [1]	[to be provided by Project Owner] at 1:1	
Mojave fringe-toed lizard [1]	[to be provided by Project Owner] at 1:1 [to be provided by Project Owner] at 3:1	
Additional (burrowing owl, special status plants) [1]	[to be provided by Project Owner]	
Total per-acre basis for Phase 1~~b~~ Security		**~~4,878~~[2]2,054 acres**

Compensation may be nested within desert tortoise compensation land.

Acreages to be adjusted upon completion of each construction phase and upon confirmation by CPM in consultation with CDFG, USFWS, and BLM of acres impacted.

Phase 2

Phase 2 construction would directly impact 1,805 acres of occupied desert tortoise habitat north ~~and south~~ of the BNSF railroad tracks. ~~Phase 2 would impact 2,085 acres of occupied desert tortoise habitat south of the BNSG railroad tracks~~to be mitigated at a ~~1~~3:1 ratio. ~~In addition, Scenario 5.5 would impact 369 acres of high-density occupied desert tortoise habitat to be mitigated at the 5:1 ratio.~~ Compensation mitigation ratios for these project components shall be as described in Condition of Certification **BIO-17** (Desert Tortoise Compensatory Mitigation). In addition, proposed Phase 2 Project construction would affect Mojave fringe-toed lizard habitat and could affect burrowing owl or rare plant locations that may be documented during late-season field surveys. The applicant shall provide the CPM an enumeration of burrowing owl, and rare plant habitat impacts and shall provide security for required compensation of those impacts as described in Conditions of Certification **BIO-12** (Special-Status Plant Impact and Avoidance and Minimization), **BIO-13** (Mojave Fringe-Toed Lizard Mitigation), **BIO-16** (Desert Tortoise Translocation Plan), **BIO-17** (Desert Tortoise Compensatory Mitigation), **BIO-21** (Burrowing Owl Impact Avoidance and Minimization Measures), and **BIO-**26 (Streambed Impact Minimization and Compensation Measures) Security for each phase shall be provided to the CPM, prior to beginning of any project-related ground disturbing activities, as set forth in the verification section of this Condition.

BIO-31 Table 2.
Phase 2 Impacts and Compensation Acreage.

Resource	Phase 2 Impact (acres) and Mitigation Ratios	Compensation (acres)
Desert tortoise habitat ~~(excluding disturbed or isolated~~at ~~3:1~~	~~2,085~~1,805acres ~~S of BNSF~~ at ~~1~~3:1	~~2,085~~5,415
~~acreage in Phase 1a; see Table~~	~~283 acres N of BNSF at 3:1~~	~~849~~
~~1 a)~~		
~~Desert tortoise habitat at 5:1~~		
~~(Scenario 5.5 only)~~	~~369 acres at 5:1~~	~~1,845~~
State Jurisdictional streambed [1]	0	0
Mojave fringe-toed lizard [1]	~~21.4 acres~~ [to be provided by Project Owner] at 1:1 ~~143.3 acres at 3:1~~	~~21.4~~ ~~429.9~~

Additional (burrowing owl, special status plants)	To be provided by the Project Owner.	
Total ~~Scenario 5.5~~ per-acre basis for Phase 2 Security		**~~5,230~~[2] 5,415[2] acres**

Compensation may be nested within desert tortoise compensation land.

Acreages to be adjusted upon completion of each construction phase and upon confirmation by CPM in consultation with CDFG, USFWS, and BLM of acres impacted.

Verification: No fewer than 30 days prior to the start of desert tortoise clearance surveys for each phase, the Project owner shall submit a description of the proposed construction activities for that phase to CDFG, USFWS and BLM for review and to the CPM for review and approval. The description for each phase shall include the proposed construction schedule, a figure depicting the locations of proposed construction and number of acres of rare plant habitat, burrowing owl habitat, and state-jurisdictional streambeds to be disturbed.

If all mitigation requirements, including habitat acquisition and protection, are not completed for a Project phase at least 30 days prior to the start of ground-disturbing activities for that phase, the Project Owner shall provide verification to the CPM and CDFG that approved security (as described in Conditions of Certification **BIO-12** (Special-Status Plant Impact and Avoidance and Minimization), **BIO-13** (Mojave Fringe-Toed Lizard Mitigation), **BIO-16** (Desert Tortoise Translocation Plan), **BIO-17** (Desert Tortoise Compensatory Mitigation), **BIO-21** (Burrowing Owl Impact Avoidance and Minimization Measures), and **BIO26** (Streambed Impact Minimization and Compensation Measures)) has been established in accordance with these Conditions of Certification no later than 30 days prior to beginning ground-disturbing activities for each Phase. Prior to submitting verification regarding the security to the CPM, the project owner shall obtain the CPM's approval of the security as required by the other Conditions.

~~For Phase 1 b, the Project Owner shall obtain the CPM's approval of security and shall provide verification that approved security has been established by September 1, 2011 or 30 days prior to the start of Phase 1b construction, whichever occurs first. The fixed deadline for Phase 1 b security is necessary because under terms of this Condition, compensation lands and associated funding for both Phase 1a and Phase 1b will be due in the first half of 2012, assuming Phase 1a construction begins as planned in late 2010, and security must be in place well in advance of the mitigation obligations that are being guaranteed.~~

The Project Owner shall provide written verification to the CPM, CDFG, BLM and USFWS of the compensation lands acquisition, protection, and transfer requirements and satisfaction of associated funding requirements as set forth in **BIO-17** and other conditions within the following time frames: (1) For Phase 1~~a and Phase 1b~~ mitigation, verification shall be provided no later than 18 months after the start of construction of Phase ~~1a,~~1, and (2) for Phase 2 mitigation, such verification shall be provided no later than 18 months after the start of construction of Phase 2. Other verification, notification and reporting requirements and other deadlines set forth in BIO-17 and other Conditions that relate to compensation land requirements, to the option of funding mitigation through the NFWF account, or to use of approved third parties to carry out mitigation requirements also apply to Phase 1 ~~(1a and 1b combined)~~ and to Phase 2.

Within 90 days after completion of ~~all~~ project ~~related ground disturbance~~ construction for each project phase ~~or sub phase~~, the project owner shall provide to the CPM, CDFG, BLM and USFWS an analysis, based on aerial photography, with the final accounting of the amount of habitat disturbed during Project construction.