

APPENDIX A: MITIGATION MEASURES FOR THE OCOTILLO SOL PROJECT

This appendix includes the required mitigation measures identified in the Final EIS/Proposed CDCA Plan Amendment (FEIS/PA). It also includes three new measures, listed as Biological Measures 19, 20, and 21. In addition, Biological Measure 11 has been substantially altered from the measure detailed in the FEIS/PA. The rationale for this is provided in Section 3.3.6 of the ROD.

AIR QUALITY

Dust control measures required by BLM shall be taken from the Water Quality Construction Best Management Plan (BMP) Manual (San Diego Gas & Electric 2002). The Applicant shall conduct construction dust control within the Project area, construction laydown areas, and the access road by using water applied by trucks or other palliative means deemed acceptable by BLM. Wind erosion control techniques (such as windbreaks, water, chemical dust suppressants, or vegetation) shall be used where soils are disturbed (Renewable Energy Action Team 2010).

As required by the Imperial County Air Pollution Control District (ICAPCD), the Applicant shall develop a dust control plan for both the construction and operational periods (the dust control plan will be developed prior to start of construction). Any additional dust control measures required by the ICAPCD as part of such a plan shall be in addition to the measures required by BLM that are incorporated in the FEIS/PA. The specific measures that will be required shall be incorporated into the Environmental and Construction Compliance Monitoring Plan.

The BLM received two comment letters in response to the publication of the Ocotillo Sol FEIS/PA; these were from the ICAPCD and the U.S. Environmental Protection Agency (EPA), Region IX. Since the comments in both letters stated concerns regarding potential air quality impacts generated by the proposed Project, these letters are addressed here.

In addition to reiterating comments made on the Draft EIS/Proposed CDCA Plan Amendment for the Ocotillo Sol Project, the letter from the ICAPCD pointed out that the Project will need to prepare a dust control plan, as discussed earlier in this section. The ICAPCD letter also reminded the BLM that the Project will be required to comply with the Imperial County Air Quality Handbook, Imperial County Rule 310 and ICAPCD Policy 5, and a requirement for permits to operate generators of 50 hp and above. The ICAPCD letter concludes with the statement, “it is imperative that the Applicant contact the Air District prior to any earthmoving activity to discuss potential air quality impacts”. As stated in the FEIS/PA, the BLM shall require the Applicant to comply with all county rules, regulations, and policies eliminating, reducing, or mitigating air pollution impacts from the Ocotillo Sol Project.

The letter from the EPA made three recommendations: (1) Modeling of the “significant impact area” for potential Project air pollutant emissions, plus 50 kilometers out; (2) a more extensive discussion of cumulative air quality impacts, specifying the parameters of the analysis and the reasons for the establishment of those parameters; and (3) if the Project is expected to affect the ability of other foreseeable projects to be permitted, a discussion of this impact and a commitment to ensure that all feasible measures to reduce and mitigate air quality impacts to the greatest extent possible will be implemented.

With regard to EPA’s first two comments, as discussed in Section 4.2.5.1 of the Ocotillo Sol FEIS/PA, the geographic scope of air quality impacts is the Salton Sea Air Basin, with specific attention to a 6-mile radius for regionally based impacts and a 1-mile radius for sensitive receptor impacts. The cumulative impacts to regional ambient air quality concentrations from projects more than approximately 6 miles apart are typically minimal due to dispersion that would occur over that distance. This geographic scale is in agreement that used by the California Energy Commission, which typically applies a 6-mile radius for air quality cumulative analysis of fossil-fuel fired plant emissions. The emissions from this Project would be minimal, ground-based, and have limited exhaust plume buoyancy. During construction, dust and vehicle emissions would disperse rapidly with distance from the Project site.

In response to EPA’s third comment, as discussed in Section 4.2.5.4 of the Ocotillo Sol FEIS/PA, the majority of past, present, and reasonably foreseeable activities, with the exception of activities at the Imperial Valley Substation, would occur at least 2 miles from the Project. Other renewable energy projects, along with other activities within the 6-mile geographic scope for air quality, combined with this Project’s construction activities, would result in short-term cumulative impacts to air quality. There is insufficient information to determine the amount of emissions these combined projects would emit; yet based on mitigation measures required for each project, the combination of projects is not anticipated to exceed the local or regional *de minimis* thresholds, nor is it expected to have a cumulative effect on local or Salton Sea Air Basin air quality. All renewable energy projects within a 6-mile radius of the proposed Ocotillo Sol Project area have or will be required to implement air quality dust control plans or mitigation measures to reduce impacts to air quality resources, further reducing the magnitude of their potential impacts to these resources.

GEOLOGY AND SOILS

The following mitigation measures for geology and soils will be implemented. The potential effects of ground shaking on any Project-associated structures will be mitigated by adhering to the Uniform Building Code or the standards of care established by the Structural Engineers Association of California and the recommendations of any subsequent geotechnical investigations during final Project design.

A detailed storm water pollution prevention plan shall be developed and implemented to minimize erosion during construction in compliance with the National Pollutant Discharge Elimination System General Construction Permit. The storm water pollution prevention plan shall include:

- A detailed description of all BMPs that will be employed;
- An outline of the areas on-site that will be disturbed during the construction Project;
- An outline of all areas that will be stabilized by temporary or long-term erosion control measures; and
- A proposed schedule for the implementation of erosion control measures.

In addition, surface waters (canals and drains) and wells within 1,000 feet of construction activities shall be identified. Construction activities within 100 feet of these resources shall implement the BMPs detailed in Chapter 2, Section 2.2.2.2.7 of the FEIS/PA.

WATER RESOURCES

Although no direct or indirect impacts to water resources are anticipated as a result of construction, operation and maintenance, and decommissioning of the proposed Ocotillo Sol Project under Alternatives 2 or 3, several standard mitigation measures shall be employed to ensure impacts to water resources are avoided. The measures shall include the following:

Development and implementation of a storm water pollution prevention plan as required by the State General Construction Activity Storm Water Permit. The storm water pollution prevention plan shall include:

- A detailed description of all BMPs that will be employed;
- An outline of the areas on-site that will be disturbed during Project construction;
- An outline of all areas that will be stabilized by temporary or long-term erosion control measures; and
- A proposed schedule for the implementation of erosion control measures.

Surface waters (canals and drains) and wells within 1,000 feet of construction activities shall be identified. Construction activities shall not be carried out within 100 feet of these resources without using BMPs.

The use or storage of hazardous material near a canal, drain, or well will be prohibited. Additionally, special precautions will be implemented to prevent spills of hazardous materials, discharges of foreign materials, and sedimentation discharges near a canal, drain, or well.

In addition, precautions on the use of pesticides and herbicides set forth in the Weed Management Plan will avoid potential impacts to water resources from their use.

BIOLOGICAL RESOURCES

VEGETATION RESOURCES

Biological Measure 1: In accordance with the *Flat-tailed Horned Lizard (FTHL) Rangewide Management Strategy* (RMS), mitigation will be required for long-term and temporary impacts to FTHL habitat. FTHL is known to occur in the creosote bush–white burr sage scrub vegetation within the Ocotillo Sol Project area. In accordance with the FTHL RMS, compensation for long-term impacts to this habitat within the Yuha Management Area shall be at a 6:1 ratio. This ratio is explained in detail in the FEIS/PA. Compensation will equal 600 acres for impacts to the 100 acres of long-term impacts and 2 acres of temporary impacts to creosote bush–white burr sage scrub vegetation. This compensation shall be in the form of acquisition of specific land parcels and/or depositing funds into the Renewable Energy Action Team Account established with the National Fish and Wildlife Foundation, or similar entity, for mitigation land search, acquisition, and management. Acquired land shall be managed as public land in accordance with federal law and the most current BLM land use plan.

Biological Measure 2: Re-vegetation of temporary impacts is required to restore the habitat functions and values to their pre-construction state. Re-vegetation and restoration efforts shall follow the Ocotillo Sol Decommissioning and Reclamation Plan

Biological Measure 3: To reduce the potential for the introduction and spread of noxious, invasive, and non-native weed species, a Weed Management Plan has been prepared and will be finalized prior to issuance of the Notice to Proceed.

Biological Measure 4: Prior to Project initiation, a Worker Environmental Awareness Program shall be developed and implemented, and will be available in both English and Spanish. Wallet-sized cards summarizing this information will be provided to all construction, operation, and maintenance personnel. The education program shall include the following aspects of biology and status of Sonoran Desert species potentially in the Project area, including FTHL:

- Biology and status of each species;
- Protection measures designed to reduce potential impacts to the species;
- Function of flagging designating authorized work areas;
- Reporting procedures to be used if a FTHL is encountered in the field; and
- Driving precautions to take while commuting to and accessing the Project site to reduce mortality of FTHL on roads.

After construction is complete, and in order to prevent future unauthorized impacts to vegetation communities, the Worker Environmental Awareness Program shall detail the authorized access roads and work areas, including speed limits for all access roads and internal work areas, and highlight biologically sensitive areas to be avoided during operations and management activities.

NOXIOUS, INVASIVE, AND NON-NATIVE WEEDS

To minimize the introduction and spread of noxious, invasive, and non-native weed species, a Weed Management Plan (Biological Measure 3 above) and a Habitat Restoration Plan and a Decommissioning and Reclamation Plan (Biological Measure 2 above) shall all be implemented. The management plan for temporary disturbance construction sites shall have the following objectives:

Weed identification and risk assessment: identifying the presence, location, and abundance of weed species in the Project areas, both existing conditions and conditions over time.

Weed suppression: reducing or maintaining current infestation densities. The weeds present are widely distributed, higher density weeds for which eradication is not feasible. No weed control is being administered on adjacent properties and therefore there is a strong possibility that the Project area will be continuously re-infested.

Weed containment: preventing infestation expansion or spread beyond the boundaries of proposed Project.

The Weed Management Plan, Habitat Restoration Plan (for temporary disturbance), and Decommissioning and Reclamation Plan (for disturbance lasting the life of the project) shall include a discussion of specific weeds identified on-site that will be targeted for eradication or control as well as a variety of measures that will be undertaken to prevent the introduction and spread of new weed species as a result of the Project.

General measures to prevent the spread of weeds include the following:

- Limiting disturbance areas during construction to the minimum required to perform work and limiting ingress and egress to defined routes.
- Heavy equipment will be commercially washed prior to entering the Project site and, consequently, shall arrive at the site weed free.
- A log will be kept for all vehicle, equipment, and tool off-site washing.
- Use of certified weed-free mulch, straw wattles, hay bales and seed mixes, as well as all gravel and fill material, as commercially available.
- Reestablishing native vegetation as quickly as practicable on disturbed sites as the most effective long-term strategy to avoid weed invasions.
- Monitoring and rapid implementation of control measures to ensure early detection and eradication for new weed invasions.

Weed control methods that may be used include both physical and chemical control. Physical control methods include manual hand pulling of weeds, or the use of hand and power tools to uproot, girdle, or cut plants. Herbicide applications are a widely used, effective control method for removing infestations of invasive weed species. Inadvertent application of herbicide to adjacent native plants must be avoided, which can often be challenging when weeds are interspersed with native cover. Before applying herbicide, contractors shall be required to obtain

any required permits from state and local authorities. Only a State of California and federally certified contractor shall be permitted to perform herbicide applications. All herbicides shall be applied in accordance with applicable laws, regulations, and permit stipulations. Only herbicides and adjuvants approved by the State of California and federal agency for use on public lands shall be used within or adjacent to the Project site. The *Programmatic EIS Vegetation Treatments Using Herbicides on BLM Lands in 17 Western States* lists 10 herbicides acceptable for use on BLM lands (2007). Guidelines for the use of chemical control of vegetation on BLM lands are presented in the Chemical Pest Control Manual (BLM n.d.). These guidelines require submittal of a pesticide use proposal and pesticide application records for the use of herbicides on BLM lands.

WILDLIFE RESOURCES

FLAT-TAILED HORNED LIZARD

As noted in Biological Measure 1 above, disturbance to FTHL habitat shall be mitigated at a 6:1 ratio through the compensatory mitigation requirements of the FTHL RMS.

Construction Avoidance, Minimization, and Compensation Measures

In accordance with the FTHL RMS, the measures below are designed to avoid, minimize, and/or compensate for potential direct and indirect effects construction of the Ocotillo Sol Project may have on FTHL. The following measures shall be implemented.

Biological Measure 5: Prior to ground-disturbing activities, an individual shall be approved by the BLM as a Designated Biologist (i.e., field contact representative for biological mitigation). A Designated Biologist shall be employed for the period during which on-going construction and post-construction monitoring and reporting by an approved biologist is required, such as annual reporting on habitat restoration. Each successive Designated Biologist shall be approved by the BLM's Authorized Officer (i.e., BLM field manager, El Centro). The Designated Biologist shall have the authority to ensure compliance with the conservation measures for the FTHL and will be the primary agency contact for the implementation of these measures. The Designated Biologist shall have the authority and responsibility to halt activities that are in violation of the conservation measures. A detailed list of responsibilities for the Designated Biologist is summarized below. To avoid and minimize impacts to biological resources, the Designated Biologist shall:

- Notify BLM's Authorized Officer at least 14 calendar days before initiating ground-disturbing activities.
- Immediately notify BLM's Authorized Officer in writing if the Project proponent does not comply with any conservation measures, including but not limited to any actual or anticipated failure to implement conservation measures within the periods specified.
- During vegetation clearing, grubbing, grading, and construction of the FTHL exclusionary barrier fence, ensure that biological monitoring is conducted daily, in accordance with monitoring and clearing protocols described in Biological Measures 6–11 and 19–20 below.

- Conduct compliance inspections at a minimum of once per week during on-going construction after clearing, grubbing, and grading are completed, and submit a monthly compliance report to BLM's Authorized Officer until construction is complete.

Biological Measure 6: The boundaries of all areas to be disturbed (including staging areas, access roads, and sites for temporary placement of spoils) shall be delineated with stakes and flagging prior to construction activities. Spoils shall be stockpiled in disturbed areas lacking native vegetation or where habitat quality is poor within the Project footprint. To the extent possible, disturbance of shrubs and surface soils due to stockpiling shall be minimized. All disturbances, vehicles, and equipment shall be confined to the flagged areas. Operation and maintenance activities including weed abatement, or any other operation and maintenance activity that may result in ground disturbance, shall be conducted outside of the FTHL active season whenever feasible. The Designated Biologist or a Biological Monitor (see Biological Measure 7) must be present during all weed abatement operations.

Following removal of the exclusionary fencing (see Biological Measure 11), if any operation and maintenance activities must be conducted that may result in ground disturbance at any time of year, one or more Biological Monitors shall be present during activities to ensure that no FTHLs are impacted.

The Designated Biologist and/or Biological Monitors shall evaluate and implement the best measures to reduce mortality of FTHLs and other wildlife along access roads, particularly during the FTHL active season (March 1 through September 30). These measures shall include a speed limit of 15 miles per hour when driving the access road to the facility and any roads within the facility. All vehicles required for operation and maintenance must remain on the designated access/maintenance roads. These speed limit restrictions shall remain during the life of the Project.

Biological Measure 7: Approved Biological Monitors will assist the Designated Biologist in conducting pre-construction surveys and monitoring mobilization, ground disturbance, and grading activities. The Biological Monitors shall have a FTHL monitor certification, experience conducting FTHL field monitoring, have sufficient education and field experience to understand FTHL biology, be able to identify FTHL scat, and be able to identify and follow FTHL tracks. The Designated Biologist shall submit a complete resume and contact information for the proposed Biological Monitors to the BLM for approval. Biological Monitors shall also receive relevant permits from the California Department of Fish and Wildlife (CDFW). To avoid and minimize impacts to biological resources, the Biological Monitors shall assist the Designated Biologist with the following:

- Be present during construction (e.g., grubbing and grading) activities that take place in flat-tailed horned lizard habitat to avoid or minimize take of FTHL. Activities include, but are not limited to, ensuring compliance with all impact avoidance and minimization measures, monitoring for FTHLs and removing lizards from harm's way, and checking established avoidance areas, if applicable, to ensure that signs and stakes are intact and that human activities are restricted.

- At the end of each workday, inspect all potential wildlife pitfalls (trenches, bores, and other excavations) for wildlife and then backfill them. If backfilling is not feasible, all trenches, bores, and other excavations will be contoured at a 3:1 slope at the ends to provide wildlife escape ramps or be completely and securely covered to prevent wildlife access.
- During construction, examine areas of active surface disturbance periodically, at least hourly, when surface temperatures exceed 85 degrees Fahrenheit (°F) for the presence of flat-tailed horned lizard.

Biological Measure 8: FTHLs shall be removed from harm's way during all construction activities, per Biological Measure 9 below. FTHL removal shall be conducted by the Designated Biologist or by two or more Biological Monitors, prior to the FTHL exclusionary fencing being constructed, and when construction activities are being conducted in suitable FTHL habitat. After the FTHL exclusionary fencing has been constructed, the Designated Biologist or Biological Monitors shall monitor and remove FTHLs from harm's way when work is being conducted outside the fencing, including vehicle use of the access roads to the construction site. To the extent feasible, methods to find FTHLs shall be designed to achieve a maximal capture rate and will include but not be limited to using strip transects, tracking, and raking around shrubs. In the immediate vicinity of ground-disturbing activities, the minimum survey effort shall be 30 minutes per 0.40 hectare (30 minutes per 1 acre). Persons that handle FTHLs shall first obtain all necessary permits from the CDFW in addition to approval from the BLM. FTHL removal surveys shall also include a Horned Lizard Observation Data Sheet and a Project Reporting Form, per Appendix 8 of the FTHL RMS. During construction, monthly reports describing FTHL removal activity, per the reporting requirements described in Biological Measure 5 above, shall be submitted to the BLM and CDFW.

Biological Measure 9: The removal of FTHLs out of harm's way shall include relocation to nearby suitable habitat in low-impact (e.g., away from roads and solar panels) areas of the Yuha Management Area. Relocated FTHLs shall be placed in the shade of a large shrub in undisturbed habitat. If surface temperatures in the sun are less than 75°F or exceed 100°F, the Designated Biologist or Biological Monitors, if authorized, shall hold the FTHL for later release. Initially, captured FTHLs shall be held in a cloth bag, cooler, or other appropriate clean, dry container from which the lizard cannot escape. Lizards shall be held at temperatures between 75°F and 90°F and shall not be exposed to direct sunlight. Release shall occur as soon as possible after capture and during daylight hours. The Designated Biologist or Biological Monitors will be allowed some judgment and discretion when relocating lizards to maximize survival of flat-tailed horned lizards found in the Project area.

To the maximum extent practicable, grading in FTHL habitat shall be conducted during the active season, which is defined as March 1 through September 30, or when ground temperatures are between 75°F and 100°F. If grading cannot be conducted during this time, any FTHLs found shall be removed to low-impact areas (see above) where suitable burrowing habitat exists (e.g., sandy substrates and shrub cover).

Operation and Maintenance Avoidance, Minimization, and Compensation Measures

To reduce the potential impacts to FTHL during operation and maintenance, the following shall be implemented when conducting operation and maintenance:

Biological Measure 10: No later than January 31 of every year that the Ocotillo Sol Project remains in operation, the Designated Biologist shall provide to the BLM's Authorized Officer, CDFW, and the FTHL Interagency Coordinating Committee (ICC) an annual FTHL status form (similar to page 108 of the FTHL RMS), which shall include the following, at a minimum:

- A general description of the status of the Project site.
- A copy of the table in the Project biological monitoring report with notes showing the current implementation status of each conservation measure.

The Applicant shall provide a reporting form for BLM approval that includes the following items: Project name, BLM serial number, grant holder, Project location legal description or Universal Transverse Mercator coordinates, and FTHL observations. The Applicant shall also provide a Microsoft Excel spreadsheet and a shape file with coordinates of observations by type.

Biological Measure 11: Flat-tailed Horned Lizard Exclusionary Fence Construction and Inspection

A FTHL exclusionary barrier fence shall be constructed along the bottom of the Project footprint perimeter security fence (including the temporary laydown area) to inhibit FTHLs from entering the site. Both fencing design and site survey protocols shall be established by the BLM authorized officer, in coordination with the FTHL ICC. Site survey protocols shall also be according to Biological Measures 8, 19, and 20.

Until the exclusionary barrier fence has been constructed and all FTHLs have been relocated by the Biological Monitors, surface disturbance for Project construction shall be timed to minimize mortality to FTHLs (see Biological Measure 9 above). The BLM shall have authority to alter exclusionary barrier fence design prior to installation and thereafter, in accordance with the FTHL RMS and in coordination with the FTHL ICC.

The Designated Biologist and Biological Monitors shall oversee the construction of the barrier fence and be on-site to search for and remove FTHLs following completion of the fence and during subsequent surface-disturbing activities. The level of survey effort needed to locate and relocate FTHLs shall be determined by the BLM in coordination with the FTHL ICC. The BLM will provide a written description of the required level of survey effort needed to locate and relocate FTHLs at least 30 days in advance of the planned construction start date.

The fence shall be inspected as follows:

- Regularly (at least weekly) during construction by the Designated Biologist to ensure that it is intact and effective;
- Following each storm event that produces overland flow onsite;

- Following each high wind advisory sent out by the National Weather Service; and
- As required by the BLM authorized officer.

If any openings appear in fencing following storms or otherwise, the entire Project site shall be surveyed for FTHL occupancy.

The BLM shall review the results of the FTHL fencing inspections and, in cooperation with the Project owner, will determine if changes to fence design or elimination of the fence are warranted. If the BLM, in coordination with the FTHL ICC, determines that the fence is ineffective, the fence can be modified or eliminated with approval of the BLM.

Any FTHLs found on access roads, or other areas inside or outside the exclusionary fencing during construction, shall be relocated per Measures 8 and 9.

Exclusionary barrier fencing shall be removed following completion of Project construction and reclamation of the temporary laydown area. The Designated Biologist and BLM Authorized Officer must approve removal of the barrier fence prior to its removal. Following removal of the barrier fence, the affected area outside of the permanent Project fence shall be re-contoured to match existing topography.

BURROWING OWL

Construction Avoidance, Minimization, and Compensation Measures

The following measures will avoid, minimize, or mitigate potential impacts to burrowing owl during construction activities.

Biological Measure 12: The avoidance and minimization Biological Measures 13 through 17 below shall be implemented prior to construction to avoid impacts to nesting, migrating, or wintering burrowing owls. If construction is to begin during the breeding season, it is recommended that Biological Measures 13 through 17 be implemented prior to February 1 to discourage the nesting of burrowing owls within the area of impact. As construction continues, any area where owls are sighted shall be subject to frequent surveys for burrows before the breeding season begins, so that owls can be relocated before nesting occurs.

Biological Measure 13: No less than 14 days prior to initiating ground-disturbance activities, an initial take avoidance survey shall be conducted using the recommended methods described in the Detection Surveys section of Appendix D of the 2012 CDFW Staff Report on Burrowing Owl Mitigation. This survey shall be conducted to determine the presence or absence of the species within the construction area, because burrowing owls may not use the same burrow every year, and numbers and locations of burrowing owl burrows at the time of construction may differ from the data collected during previous focused surveys. The construction areas will need to be clearly demarcated in the field by engineers prior to the commencement of the pre-construction clearance survey. Implementation of further avoidance and minimization measures will be triggered by owl presence on the site where Project activities will occur.

Once the initial take avoidance survey is conducted, burrowing owls may recolonize a site after only a few days. Time lapses between Project activities trigger subsequent take avoidance surveys including, but not limited to, a final survey conducted within 24 hours prior to ground disturbance.

Biological Measure 14: If burrowing owls are detected adjacent to the Project footprint and can be protected in place, buffer zones, visual screens, or other measures may be used to protect the owls in place while Project activities are occurring to minimize disturbance impacts. The guidelines for implementing buffers, as detailed on pages 9 and 10 of the 2012 CDFW Staff Report on Burrowing Owl Mitigation, should be adjusted to address site-specific conditions. BLM and the Applicant shall consult with the CDFW and other burrowing owl experts for assistance in developing site-specific buffer zones or visual screens. One example of a visual screen used by a qualified biologist to shelter an owl in place is a stack of hay bales. If buffers or visual screens are employed, a monitoring program by a qualified biologist will be implemented to ensure that the burrowing owls are not detrimentally affected by the alternative approaches.

Biological Measure 15: If active burrows are observed within the Project footprint during the pre-construction take avoidance survey(s), the following mitigation measures shall be implemented. Passive relocation methods are to be used to move the owls out of the impact zone. Passive relocation shall only be done in the non-breeding season in accordance with the 2012 CDFW Staff Report on Burrowing Owl Mitigation. A burrowing owl exclusion plan should be developed in accordance with Appendix E of the 2012 CDFW Staff Report on Burrowing Owl Mitigation in consultation with CDFW and approved by CDFW and BLM. This includes covering or excavating all burrows and installing one-way doors into occupied burrows. This will allow any animals inside to leave the burrow, but will exclude any animals from re-entering the burrow. One-way doors will be left in place for 48 hours if scoping indicates occupancy. Burrows will be scoped prior to excavation. Excavation will be done using hand tools and refilled to prevent reoccupation. After a burrow is collapsed, contractor will immediately disk down the area to prevent reoccupation. The destruction of active burrows on-site requires construction of new burrows at a mitigation ratio of 2:1 approximately 50 to 75 meters from the impacted area and must be constructed as part of the above-described relocation efforts. The construction of new burrows will take place within open areas that allow foraging. All passive relocation efforts will be documented; photographs, global positioning system coordinates of created burrows, and a description of relocation efforts will be included in the final report and submitted to CDFW and BLM no later than 60 days after the relocation effort is complete.

Biological Measure 16: Prior to issuance of the Notice to Proceed, a burrowing owl mitigation and monitoring plan shall be developed and approved by CDFW and USFWS. This plan will include a description of artificial burrow construction, including potential placement on BLM lands. The placement shall be approved by BLM in conformance with federal law and the current BLM land use plan and shall not impact cultural resources.

Biological Measure 17: In accordance with the 2012 CDFW Staff Report on Burrowing Owl Mitigation, the entire Project site is considered occupied, as burrowing owls have been recorded using the site during multiple years and in various seasons. To mitigate for temporary impacts to burrowing owl habitat, the Applicant shall restore areas of temporary disturbance on the Project site. To address long-term impacts, the Applicant shall develop and submit a burrowing owl

mitigation plan to CDFW and BLM for review and approval. Using this plan and in discussion with the Applicant, specific mitigation for long-term impacts will be determined by CDFW and BLM.

To fulfill the mitigation developed in discussion with CDFW, the Applicant plans to use the National Fish and Wildlife Foundation's Impact-Direct Environmental Accounts Program for both burrowing owl and flat-tailed horned lizard. The burrowing owl mitigation area may overlap the flat-tailed horned lizard mitigation area if the mitigation land provides suitable habitat for both species. Any BLM public land used or acquired as mitigation or compensation for impacts to burrowing owl and/or FTHL may only be used or acquired with the approval of the BLM and in accordance with federal law and the current BLM land use plan. Any mitigation or compensation requirement on BLM administered public land may be authorized by the BLM in accordance with federal law and the current BLM land use plan.

Operation and Maintenance Avoidance and Minimization Measures

To reduce the potential impacts to burrowing owl during operation and maintenance, general mitigation measures discussed above such as speed limits and a Worker Environmental Awareness Program shall be implemented.

RAPTORS

Construction Avoidance, Minimization, and Compensation Measures

Raptors and active raptor nests are protected under California Fish and Game Code 3503.5, 3503, 3513, and the Bald and Golden Eagle Protection Act. In order to prevent direct and indirect noise impacts to nesting raptors such as red-tailed hawk, the following measures shall be implemented.

Biological Measure 18: If construction occurs between February 1 and July 15, a qualified biologist shall conduct a pre-construction clearance survey for nesting raptors in suitable nesting habitat (e.g., transmission towers) that occurs within 500 feet of the Ocotillo Sol Project area. If any inactive nests are identified on the adjacent San Diego Gas & Electric transmission towers within 500 feet of the Project site, the nests shall be removed by a qualified biologist, or by construction personnel with a qualified biologist immediately present to over-see the removal. If any active raptor nest is located, a qualified biologist shall monitor the nest to ensure Project activities do not disturb nesting activities. Additional buffer areas may be recommended by the Designated Biologist, and Project activities moved away or shielded to prevent impacts to nesting raptors. Buffer reductions may also be allowed.

Mitigation for impacts to potential raptor foraging habitat shall be conducted in concert with the purchase/acquisition of mitigation for flat-tailed horned lizard habitat as detailed above. Additional mitigation for impacts to raptors is not anticipated to be necessary.

OTHER SPECIAL STATUS MAMMALS AND REPTILES

Construction Avoidance, Minimization, and Compensation Measures

For small mammals and reptiles, the construction impact avoidance, minimization, and compensation measures detailed for flat-tailed horned lizard above provide adequate protection and compensation for these species and their habitats, given the similarity of their habitat requirements and behaviors.

For mammals such as kit fox and badger, a pre-construction survey for their den sites shall be conducted by the Designated Biologist and/or Biological Monitors within 30 days of initiating any vegetation clearing, grading, or grubbing of the site. If an occupied den is found within or immediately adjacent to the limits of grading, the Designated Biologist shall coordinate with CDFW and the BLM to safely exclude and relocate the animals. If young are present in the den, CDFW and the BLM may require that the den site be avoided until it is determined that relocating the adults and young will not result in harm or mortality of the animals.

Operation and Maintenance Avoidance, Minimization, and Compensation Measures

The operation and maintenance impact avoidance, minimization, and compensation measures detailed for flat-tailed horned lizard above provide adequate protection and compensation for these species and their habitats, given the similarity of their habitat requirements and behaviors.

NEW BIOLOGICAL MEASURES

Biological Measure 19: Flat-tailed Horned Lizard Relocation Monitoring

A monitoring program shall be established to determine the successfulness of the FTHL relocation described in Biological Measures 6, 9, and 11. The program shall be implemented by the Designated Biologist and/or Biological Monitors. The details of this relocation monitoring program shall be detailed in a Flat-tailed Horned Lizard Relocation Monitoring Plan (relocation monitoring plan) to be prepared by the Applicant and reviewed and approved by the BLM, in coordination with the FTHL ICC. The plan shall be submitted to the BLM at least 30 days prior to initiation of construction activities. The BLM will then provide the Applicant with written comments within 21 calendar days of receipt. The relocation monitoring plan shall, at a minimum, include the following:

- Attachment of temperature-sensitive radio transmitters to each relocated FTHL. The method and equipment used for transmitter attachment shall be detailed in the relocation monitoring plan. Data to include in the relocation record for each lizard shall include, at a minimum: date and time of capture; air temperature at time of capture and relocation; surface temperature at time of capture and relocation, length of time elapsed between capture, transmitter attachment, and release; locations from and to which the animal is relocated; length, weight, sex, and general age (hatchling, juvenile, or adult); any apparent illness or injury; and identification number associated with the attached transmitter. Photographs of each lizard shall be taken before and after attachment of the radio transmitter, and shall be included in the record.

- Marking and recapture of a sample population of FTHLs at one or more locations to which lizards moved from the Project footprint are to be relocated. A statistically viable number of FTHLs at one or more locations designated to receive lizards to be relocated from the Project site shall be captured and marked, with the same data recorded as with relocated lizards, then recaptured and re-recorded at intervals set out in the relocation monitoring plan. The capture and release locations of this group of lizards shall be the same.
- Marking and recapture of a control population of FTHLs. A statistically viable number of FTHLs at a predetermined control location offsite shall be captured and marked, if possible, with the same data recorded as with relocated lizards, then recaptured and re-recorded at intervals set out in the relocation monitoring plan. The capture and release locations of this group of lizards shall be the same.
- All of the offsite locations for capture and/or release of FTHLs discussed above shall be determined in the relocation monitoring plan, and approved by the BLM in coordination with the FTHL ICC. All of the above sample groups of lizards shall be monitored for a period of up to three years following initial capture of the relocated sample group. The method of monitoring shall be included in the relocation monitoring plan and agreed upon by both the Applicant and the BLM, in coordination with the FTHL ICC. Reports shall be submitted to the BLM for review. These reports shall be submitted on a monthly basis prior to removal of the FTHL exclusionary barrier fence, and a quarterly basis thereafter. Methods of monitoring and reporting shall be similar to those employed in Goode and Parker (2013).

Biological Measure 20: Flat-tailed Horned Lizard Exclusionary Barrier Fence Monitoring

A monitoring program shall be established to determine the successfulness of the FTHL exclusionary barrier fence described in Biological Measure 11. The program shall be implemented by the Designated Biologist and/or Biological Monitors. The details of the program shall be detailed in an FTHL Fence Effectiveness Monitoring Plan to be reviewed and approved by the BLM, in coordination with the FTHL ICC, prior to initiation of fence construction activities. The BLM will provide the Applicant with written comments on the draft Plan within 21 calendar days of receipt. The FTHL Fence Effectiveness Monitoring Plan shall be implemented until the barrier fence is removed following completion of Project construction and laydown area reclamation, and upon approval by the Designated Biologist, as described in Biological Measure 11. Similar to Biological Measure 19, reports shall be submitted to the BLM on a monthly basis prior to removal of the barrier fence. The purpose of this study is two-fold: first, to determine whether the fence increases mortality risk to FTHL residing outside the Project area due to increased predation; and second, to ensure that the fence is effective at preventing FTHL from entering the Project area.

Biological Measure 21: Wildlife Mortality Reporting Program

A plan for a *Wildlife Mortality Reporting Program* shall be developed by the Applicant and submitted to the BLM and USFWS for review, and shall be approved by both agencies prior to the issuance of an initial Notice to Proceed for Project construction. This program shall be implemented by the Applicant, and shall be used to monitor for and report any dead or injured wildlife observed during construction, operation, maintenance, or deconstruction activities within the temporary and permanent footprints of the Project. An appropriate reporting format for dead

or injured wildlife observed in these areas shall be developed in coordination with the BLM and the USFWS for incorporation into the plan. The plan shall also include instructions on how to dispose of dead animals. Reporting of any dead or injured avian species found within the Project area shall follow the existing USFWS Bird Fatality/Injury Reporting Program (<https://birdreport.fws.gov/>). Monitoring shall occur for at least the first three years of operation of the Project, and shall be conducted at a frequency established in the *Wildlife Mortality Reporting Program*.

CULTURAL RESOURCES

In the event resources are discovered during construction the following measures shall be implemented prior to the start of any ground-disturbing activities.

Cultural Measure 1: Environmentally Sensitive Areas in the form of temporary and long-term fencing around the construction area shall achieve protection for any cultural resources located outside the Project boundaries, as follows:

Cultural Measure 1a: Archaeological sites that can be protected from direct impacts but that are within 150 feet, including buffer areas, of proposed construction activities shall be identified and labeled as Environmentally Sensitive Areas.

Cultural Measure 1b: Environmentally Sensitive Areas shall be designated by marking the boundaries of sites with appropriate buffer zones (generally a buffer of 10–20 feet beyond the outer limits of the site extent, as demonstrated by surface and/or subsurface indications) using temporary fencing or other easily recognizable boundary defining materials. These areas shall be shown on the engineering plans for the Project as off-limits to construction activities.

Cultural Measure 1c: Once established, Environmentally Sensitive Areas shall define areas where construction can occur while preventing construction activities and damage to archaeological resources within the designated Environmentally Sensitive Area.

Cultural Measure 1d: Environmentally Sensitive Areas shall be identified and established by a qualified archaeologist prior to initiation of ground-disturbing activities and shall be maintained for the duration of the work effort in the Environmentally Sensitive Area vicinity.

Cultural Measure 1e: Environmentally Sensitive Areas shall be maintained for the duration of the work effort in the Environmentally Sensitive Area vicinity.

Cultural Measure 2: The Applicant shall prepare an archaeological monitoring and discovery plan that shall include procedures for archaeological monitoring, post-review discovery, and unanticipated effects to cultural resources. The archaeological monitoring and discovery plan shall be reviewed and approved by the BLM and consulting parties prior to the issuance of a Notice to Proceed. A hard copy of the plan shall be kept on-site and accessible to all archaeological and tribal monitors at all times.

Cultural Measure 2a: In the event that unknown historic or archaeological resources are encountered during construction or operational repairs, the Applicant shall be required to temporarily divert construction work. Archaeological Monitors shall be authorized to temporarily divert construction work within 150 feet of the area of discovery. The protocol for diverting work shall be included in the *Archaeological Resources Monitoring and Discovery Plan* prepared for the Project. The *Archaeological Resources Monitoring and Discovery Plan* shall be finalized and approved by the BLM prior to any ground-disturbing activities.

Cultural Measure 3: A BLM-issued form “Discovery of Potential Human Remains” shall be used as the sole reporting protocol in the event human remains, or indeterminate human remains, are discovered. In the event human remains, indeterminate human remains, sacred objects, or items of Native American cultural patrimony are discovered, work shall be stopped immediately in the vicinity of the find, and the instructions listed on the “Discovery of Potential Human Remains” shall be followed. A hard copy of the form shall accompany all field crews and be accessible to Project personnel all times. The protocol required under the “Discovery of Potential Human Remains” shall be incorporated into trainings required for all workers on the Project. All finds shall be treated in accordance with the requirements of the Native American Graves Protection and Repatriation Act (PL 101-601). All Native American Graves Protection and Repatriation Act consultation shall be carried out by the BLM.

Cultural Measure 4: A Principal Investigator and/or Field Director who is listed on a BLM California Cultural Use Permit and BLM El Centro Field Office Fieldwork Authorization shall be on-site during construction to observe ground-disturbing activities, including grading, trenching or other excavation for any Project facilities and components such as roads and laydown areas, and in other areas the BLM and the qualified archaeologist(s) determine to be appropriate for monitoring. Archaeological Field Monitors listed on a BLM El Centro Field Office Fieldwork Authorization that do not meet the qualifications for Principal Investigator or Field Director may work as monitors on the Project under an on-site Principal Investigator and/or Field Director. A hard copy of the Cultural Use Permit shall be kept on-site and accessible to all archaeological staff and tribal monitors at all times. A hard copy of the Fieldwork Authorization shall accompany all archaeological staff in the field at all times. The roles and responsibilities for Principal Investigators, Field Directors, and other archaeological staff shall be provided in the *Archaeological Monitoring and Discovery Plan*.

Cultural Measure 5: The Applicant shall provide designated representatives of Native American tribes the opportunity to monitor and be on-site during construction to observe grading, trenching, or ground-disturbing activities for the Project on BLM land determined to be appropriate for monitoring by the BLM and the Principal Investigator.

Cultural Measure 5a: The Applicant shall develop and implement a Tribal Participation Plan that shall include detailed roles and requirements of Tribal Monitors, training requirements for Tribal Monitors, contract agreement between the Applicant and Tribal Monitors, and reporting or other requirements for tribal monitors. The tribal participation plan shall be reviewed and approved by the BLM and consulting parties prior to the issuance of a Notice to Proceed. A hard copy of the Tribal Participation Plan shall be kept on-site and accessible to all archaeological and tribal monitors at all times. The Tribal Participation Plan shall be finalized prior to any ground-disturbing activities.

Cultural Measure 6: The Applicant shall develop and implement a *Long-Term Archaeological Management Plan* for the post-construction monitoring and condition assessment of cultural resources within the Project area of potential effects (APE). A draft long-term management plan must be provided to the BLM for review within 90 days of the Project's Notice to Proceed. The BLM will work with the Applicant to finalize the plan no later than 60 days prior to completion of Project construction. The *Long-Term Archaeological Management Plan* will serve as a "living document" that may be revised and amended as unforeseen circumstances arise during the operation and maintenance or other stages of the Project.

PALEONTOLOGICAL RESOURCES

A Project-specific paleontological resources impact mitigation program, including excavation monitoring and fossil salvage by qualified paleontologists, is recommended if, after the Project design is finalized, any excavations will extend below Holocene (circa 12,000 years ago to present) sediments. Paleontological monitoring shall be conducted during excavation to mitigate potential adverse impacts to significant nonrenewable paleontological resources if there are no further geotechnical reports for the Ocotillo Sol Project area. Additional geotechnical information on subsurface geology may provide sufficient information to reduce the need for monitoring during excavation.

PALEONTOLOGICAL RESOURCES IMPACT MITIGATION PROGRAM

A paleontological monitoring protocol shall be outlined in a *Paleontological Monitoring Plan* for the Project. A qualified paleontologist will develop a paleontological resources impact mitigation program prior to construction to mitigate adverse impacts on paleontological resources if excavations will extend below Holocene sediments. The plan shall include the following measures to be followed in the event that fossil materials are encountered during construction:

- The *Paleontological Monitoring Plan* shall include a schedule and plan for monitoring earth-moving activities and a provision that monitoring personnel have the authority to temporarily halt or divert excavation activities to allow removal of fossil specimens and recording of information on the location, orientation, etc. associated with the collected specimen.
- Worker awareness training shall be implemented to ensure that the construction personnel understand the potential for fossil remains being uncovered and/or disturbed by earth-moving activities, where such remains are most likely to be encountered during earth moving, and requirements and procedures to be followed in the event of suspected fossil discoveries. The awareness training may be given along with other sensitivity trainings (e.g., for biological resources) or incorporated into tailgate safety meetings.
- The Applicant shall have a paleontology monitor on-site during construction when there are ground-disturbing activities in areas of identified moderate to high paleontological sensitivity.
- Recovered fossils shall be curated with a museum or other curation facility approved by the BLM.

- The plan shall include emergency stop work and notification procedures in the case of encountering significant paleontological resources.

FIRE AND FUELS

A Weed Management Plan (see Appendix D of the FEIS/PA) shall be implemented to reduce the invasion and spread of noxious, non-native weed species that could increase wildland fire risk. BMPs shall also be implemented during construction, operation and maintenance, and decommissioning to avoid fire risk.

VISUAL RESOURCES

The overall goal of the visual resources management (VRM) system is to minimize visual impacts. The BLM requires mitigation of visual contrast that can reduce visual impacts. This requirement gives consideration to the ability to view the Project from locations other than Key Observation Points and applies to all projects, even those that will meet visual objectives and will have no adverse effects on visual resources.

The Ocotillo Sol Project shall comply with visual resources BMPs in accordance with guidance provided in the Renewable Energy Action Team BMPs and Guidance Manual (2010).

Additional mitigation measures to minimize reflectivity and visual contrast of color shall include surface treatment and color selection, as follows:

- Coloration of the inverter boxes, buildings and other structural support facilities should be gray or other earth tones as approved by BLM.
- The chain link fence, PV panel brackets, and other exposed support structures and other metal surfaces should also be color treated (polyvinyl coated or acid-etched) to reduce galvanized surface reflectivity.

Grading, erosion control, and soil stabilization measures, implemented as part of the Water Quality Construction BMPs (Sempra Energy Utilities 2002), will also reduce potential visual resource impacts, as will mitigation measures outlined under the air section (dust control; Section 4.2.6 of the FEIS/PA).

Areas of temporary impacts are required to be revegetated to restore the habitat functions and values to their pre-construction state (Section 4.6.4 (see Appendix D of the Final EIS/Proposed CDCA Plan Amendment). A detailed Habitat Restoration Plan shall be prepared and implemented to ensure the restoration of the temporarily impacted areas is successful. The Habitat Restoration Plan must be approved in writing prior to the initiation of any vegetation-disturbing activities. Restoration shall include recontouring the land, replacing the topsoil (if it was collected), planting seed and/or container stock, and maintaining (e.g., weeding, replacement planting, supplemental watering) and monitoring the restored area for a period of 5 years (or less if the restoration meets all success criteria). Components of the Habitat Restoration Plan shall

incorporate any BLM revegetation/restoration guidance measures. Vegetation treatment and weed management shall be ongoing throughout the life of the Project. Reports on the progress of habitat restoration shall be submitted to the BLM on an annual basis. The site shall be maintained weed-free with BLM-approved herbicides. The Ocotillo Sol Weed Management Plan, developed in consultation with the BLM, outlines the vegetation treatment and weed management program for the site.

PUBLIC HEALTH AND SAFETY

Appropriate measures shall be implemented during the construction, operation and maintenance, and decommissioning of the Ocotillo Sol Project to properly handle the PV solar panels, and to provide an appropriate response to the release of any potential contaminants to the environment resulting from damage to the panels.

In the event CdTe modules are used, the Applicant shall have a written procedure to ensure adequate handling of any broken modules, to include the following:

- Receiving: If any modules are found broken or cracked, they are identified and immediately shipped back to the manufacturer.
- Installation: Module boxes are typically brought to the solar mounting structures in the field via a fork lift. Crews open the containers and lift out the modules one at a time and place them on the mounting structure. Cracked modules are placed in a designated box marked “broken module.” This box is removed from the field location to the shipping dock for return to the manufacturer as part of their recycling program.
- If a module is shattered (e.g., being struck by a construction vehicle), the waste management director is called immediately to determine if it has the possibility of emitting CdTe to the environment. If so, it is placed into a special leak-proof metal container along with any CdTe dust that may have spilled onto the ground. These containers are also shipped back to the manufacturer.
- All of the cracked or broken modules are recorded and the quantities documented.
- Operation: This same procedure is followed throughout the life of the plant.

In addition to this procedure, the Applicant shall require a strict waste management program, which will include having well-sealed, leak-proof, and segmented storage bins for broken modules. As an extra safeguard beyond waste management, the Applicant shall require a recycling program to be in place before making any decision to employ CdTe on the Project. Under this program, no CdTe will end up in landfills.

REFERENCE

Goode, M. and M.R. Parker. 2013. Evaluation of Potential Impacts of the Joint Strike Fighter Program on the Flat-Tailed Horned Lizard at MCAS-Yuma, Barry M. Goldwater Range, Annual Report – 2012. University of Arizona, Tucson.

