

CALIFORNIA ENERGY COMMISSION

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DATE: December 21, 2012
TO: Interested Parties
FROM: Joseph Douglas, Compliance Project Manager

California Energy Commission

DOCKETED
07-AFC-5C

TN # 68960

DEC 21 2012

**SUBJECT: Ivanpah Solar Electric Generating System (07-AFC-5C)
Staff Analysis of Proposed Modifications to Condition of Certification
BIO-20; Streambed Impact Minimization and Conservation Measures**

On November 26, 2012, Solar Partners I, LLC; Solar Partners II, LLC; and Solar Partners VIII, LLC, filed a petition with the California Energy Commission to amend the California Energy Commission Decision for the Ivanpah Solar Electric Generating System (ISEGS). The petition was docketed and posted to the Energy Commission website on November 27, 2012. Energy Commission staff has prepared an analysis of this proposed change, and a copy is enclosed for your information and review.

ISEGS is a 398-megawatt project that was certified by the Energy Commission on September 22, 2010, and is currently under construction. The facility is located in the Mojave Desert, near the Nevada border, in San Bernardino County.

Energy Commission staff reviewed the petition and assessed the impacts of this proposal on environmental quality, and proposes revisions to existing Condition of Certification **BIO-20**. It is staff's opinion that, with the implementation of the revised conditions, the project will remain in compliance with applicable laws, ordinances, regulations, and standards and that the proposed modifications will not result in a significant adverse direct or cumulative impact to the environment (Title 20, California Code of Regulations, Section 1769).

The amendment petition and staff's analysis have been posted on the Energy Commission's webpage at <http://www.energy.ca.gov/sitingcases/Ivanpah/compliance/index.html>. The Energy Commission's Order (if approved) will also be posted on the webpage. Energy Commission staff intends to recommend approval of the petition at the February 13, 2013 Business Meeting of the Energy Commission.

Agencies and members of the public who wish to provide written comments on the Amendment are asked to submit comments to the Energy Commission Dockets Unit no later than January 22, 2013. Please include the docket number (07-AFC-5C) in the subject line or first paragraph of your comments. Those submitting comments electronically should provide them in either Microsoft Word format or as a Portable Document Format (PDF) to [docket@energy.ca.gov]. Please include your name or

organization's name in the file name. Those preparing non-electronic written comments should mail or hand deliver them to:

California Energy Commission
Dockets Unit, MS-4
Docket No. 07-AFC-5C
1516 Ninth Street
Sacramento, CA 95814-5512

For further information on how to participate in this proceeding, please contact the Energy Commission Public Adviser's Office, at (916) 654-4489, or toll free in California at (800) 822-6228, or by e-mail at publicadviser@energy.ca.gov. News media inquiries should be directed to the Energy Commission Media Office at (916) 654-4989, or by e-mail at mediaoffice@energy.ca.gov.

If you have any comments or questions on the technical analysis, please contact Joseph Douglas, Compliance Project Manager, at (916) 653-4677, or by fax to (916) 654-3882, or via e-mail at: joseph.douglas@energy.ca.gov.

Enclosure
Mail List 7255

IVANPAH SOLAR ELECTRIC GENERATING SYSTEM (07-AFC-5C)

Petition to Amend Final Commission Decision

Introduction and Summary

Prepared by: Joseph Douglas

INTRODUCTION AND SUMMARY

On November 26, 2012, Solar Partners I, LLC; Solar Partners II, LLC; and Solar Partners VIII, LLC, filed a petition with the California Energy Commission to amend the California Energy Commission Decision requesting to modify Condition of Certification **BIO-20** for the Ivanpah Solar Electric Generating System (ISEGS). The 398-megawatt project was certified by the Energy Commission on September 22, 2010. It is currently under construction and is 75 percent complete. The facility is located in the Mojave Desert, near the Nevada border, in San Bernardino County.

SUMMARY OF PETITION

The modifications proposed in the petition would amend Condition of Certification **BIO-20** (which requires measures to avoid, minimize and mitigate for impacts to ephemeral drainages) to allow the owner to pay advanced mitigation fees to the California Department of Fish and Game (CDFG) for the acquisition and/or restoration of habitat under CDFG's Advanced Mitigation Land Acquisition Grants (AMLAG) program.

STAFF ANALYSIS

Biology staff reviewed the petition and proposes to modify **BIO-20, Streambed Impact Minimization and Conservation Measures**. They determined that the use of the parcels from CDFG's Advance Mitigation Program to mitigate the ISEGS project would provide more than 500 acres of desert wash habitat that has been determined jurisdictional waters of the state pursuant to CDFG code section 1600. This is nearly three times the acreage of state jurisdictional waters needed to mitigate the ISEGS project, and that the habitat values of the properties selected for ISEGS would fully mitigate the project and be consistent with those required by the Final Decision.

Energy Commission technical staff reviewed the petition to amend for potential environmental effects and consistency with applicable laws, ordinances, regulations, and standards. Staff has determined that the technical or environmental areas of air quality, cultural resources, hazardous materials management, facility design, land use, noise and vibration, paleontological resources, public health, soil and water resources, traffic and transportation, transmission line safety and nuisance, transmission system engineering, visual resources, and waste management are either not affected by the proposed changes or the changes have no significant environmental impact in these areas, and no revisions or new conditions of certification are needed to ensure the project remains in compliance with all applicable LORS. Staff determined Biological

Condition of Certification BIO-20 should be modified to allow ISEGS to participate in the CDFG's AMLAG program. Table 1 summarizes staff's review.

TABLE 1 – TECHNICAL AREAS REVIEWED

TECHNICAL AREAS REVIEWED	STAFF RESPONSE			New, Revised, or Removed Conditions of Certification Recommended
	Technical Area Not Affected	No Significant Environmental Impact*	Process As Amendment	
Air Quality	X			
Biological Resources			X	X
Cultural Resources	X			
Hazardous Materials Management	X			
Facility Design	X			
Land Use	X			
Noise and Vibration	X			
Paleontological Resources	X			
Public Health	X			
Soil and Water Resources	X			
Traffic and Transportation	X			
Transmission Line Safety & Nuisance	X			
Transmission System Engineering	X			
Visual Resources	X			
Waste Management	X			
Worker Safety & Fire Protection	X			

*There is no possibility that the modifications may have a significant effect on the environment and the modification will not result in a change or deletion of a condition adopted by the commission in the final decision or make changes that would cause the project not to comply with any applicable laws, ordinances, regulations, or standards (LORS) (20 Cal. Code Regs., § 1769 (a)(2)).

IVANPAH SOLAR ELECTRIC GENERATING SYSTEM (07-AFC-5C)
Request to Amend Condition of Certification BIO-20
Biological Resource Staff Analysis
Prepared by: Carol Watson
December 21, 2012

INTRODUCTION

The Petition to Amend the Energy Commission Decision (Decision) (Solar Partners 2012a) for the Ivanpah Solar Electric Generating System (ISEGS or project) requests modification of Condition of Certification **BIO-20, Streambed Impact Minimization and Conservation Measures**. This analysis addresses the proposed modifications to **BIO-20** and potential impacts to the waters of the state, a sensitive biological resource.

LAWS, ORDINANCES, REGULATIONS AND STANDARDS (LORS) COMPLIANCE

The project's proposed modifications are subject to all the laws, ordinances, regulations, and standards (LORS) described in the Final Decision for the ISEGS project. While no new state, federal, or local laws, ordinances, regulations, and standards (LORS) concerning biological resources have been adopted since the Decision was rendered, advancements in implementation of Fish and Game Code sections 2069 and 2099, signed into law during the project proceedings, affect this project. The proposed modifications would not cause the project to be out of compliance with applicable LORS.

ANALYSIS

Staff has reviewed the ISEGS Preliminary Staff Assessment (Energy Commission 2008), the ISEGS Final Staff Assessment and Draft Environmental Impact Statement and Draft California Desert Conservation Area Plan Amendment (Energy Commission 2009), the Final Staff Assessment Addendum (Energy Commission 2010a), the Streambed Alteration Agreement Application (CH2M Hill 2009), Supplemental Data Response Set 2G (CH2M Hill 2009a), and the ISEGS Commission Decision (Energy Commission 2010b) to determine if the petition request has any potential environmental effects and to determine consistency with applicable LORS. Based on this review, staff has determined that the proposed modifications to Condition of Certification **BIO-20** do not have the potential to adversely impact desert washes determined jurisdictional waters of the state, or affect consistency with applicable LORS, as discussed in detail below.

Affected Habitat

The project is located in the Ivanpah-Pahrump Valley watershed #16060015, which includes approximately 278,486 acres in the Ivanpah and Pahrump valleys of California and Nevada. The majority of the watershed is within Nevada; see Figure 1, Ivanpah-Pahrump Valley Watershed.

A watershed "address" consists of a name and a number. The 8-digit number is a Hydrologic Unit Code or HUC. The Hydrologic Unit system is a standardized watershed classification system developed by USGS in the mid 1970s. Hydrologic units are watershed boundaries organized in a nested hierarchy by size. They range in size from

regions to the smaller cataloging units (HUCs), which are roughly equivalent to a local watershed.

Surficial drainage from the surrounding mountains and alluvial fans collects in closed basins in the Ivanpah Valley. Streams, washes, and playas are dry most of the year, with surface water only present in response to storm events. The project site is located on a broad bajada that extends from the base of the Clark Mountains to the western shoreline of Ivanpah Dry Lake, with numerous ephemeral washes occurring throughout the broad, coalescing, alluvial fans that convey storm water runoff from the mountains towards Ivanpah Dry Lake.

Washes on the project site range in size from small (1 to 4 feet wide), weakly expressed erosional features to broad channels over 85 feet wide. A total of 1,973 ephemeral washes were mapped in the project area (CH2M Hill 2008 and CH2M Hill 2009). These washes encompass 198.72 acres (CH2M Hill 2008). Approximately 1,400 of the ephemeral washes are small and are common and widespread throughout the entire project area. The larger washes are most abundant in the northern section of ISEGS 3 as well as the east and west sides of ISEGS 2. Some of the larger drainage features contain well-developed Mojave wash scrub. The larger washes tend to dissipate into smaller, more braided channels as they progress downslope. The majority of the drainages terminate prior to reaching Ivanpah Dry Lake with defined erosion features diminishing and becoming broad surface flow only. Mojave wash scrub within ISEGS 3 varies in density and diversity of shrubs. The dominant shrubs are drought-deciduous and are typically 3 to 10 feet in height. The best-developed stands include many large individuals of catclaw acacia (*Acacia greggii*), some scattered large desert-willow (*Chilopsis linearis*), and a variety of wash-associated smaller shrubs, including: cheesebush (*Hymenoclea salsola*), desert almond (*Prunus fasciculata*), black-banded rabbitbrush (*Chrysothamnus paniculatus*), bladder sage (*Salazaria mexicana*), Cooper's boxthorn (*Lycium cooperi*), and Anderson's boxthorn (*Lycium andersonii*).

The active flow channels of the smaller washes are generally devoid of vegetation and typically have a sandy-gravel substrate, although some washes also contain cobble and scattered larger rocks. Most of the larger channels typically contain scattered vegetation including creosote bush and cheesebush especially in braided channels that contain slightly elevated areas intermixed with the active flow channels. Mojave wash scrub is limited to the larger washes (typically over 15 feet) with sandy gravel substrate and well-defined banks. Vegetation associated with these features includes catclaw (*Acacia* sp), cheesebush, California buckwheat (*Eriogonum fasciculatum*), desert willow, black-banded rabbitbrush (*Chrysothamnus paniculatus*), bladder-sage (*Salazaria mexicana*), desert almond (*Prunus fasciculata*), Virgin River encelia (*Encelia virginensis*), sand-wash groundsel (*Senecio flaccidus* var. *monoensis*), wire lettuce (*Stephanomeria pauciflora*), and blue sage (*Salvia dorrii*).

To compensate for impacts to these washes, conditions of certification were developed to require acquisition of mitigation lands. Energy Commission staff enumerated three selection criteria for desert wash compensatory habitat:

“1) include at least 175 acres of state jurisdictional waters; 2) be characterized by similar soil permeability, hydrological, and biological functions as the impacted drainages; and 3) be located within the same watershed as the impacted wash.”

Legal Framework

Simultaneous to the ISEGS project moving through the permitting process at the Energy Commission, legislation was being created to support renewable energy projects in California's desert. This legislation, Senate Bill X8 34, was created to support renewable energy project development and the State of California's energy portfolio goals, while ensuring state regulatory agencies have the resources necessary to process applications to develop new renewable energy facilities. Specifically, passage of the bill enacted Fish and Game Code sections 2069 and 2099, authorizing the California Department of Fish and Game (CDFG) to fully mitigate the impacts of development of renewable energy facilities through acquisition of lands and conservation easements to protect, restore, and enhance the habitat of plants and wildlife within the Desert Renewable Energy Conservation Plan (DRECP) planning area. The CDFG is the trustee agency for desert washes determined to be jurisdictional waters of the state.

The bill was signed into law March, 2010, and the project was permitted six months later in September, 2010 (CEC-800-2010-004 CMF). At that time it was not clear if sufficient time was available for CDFG to implement the Advance Mitigation Program and acquire lands sufficient to mitigate for the ISEGS project, nor was it clear what goals and objectives would be used in selecting land for acquisition. While staff acknowledged this mitigation approach by inclusion in Condition of Certification **BIO-17**, which controls acquisition of lands for desert tortoise habitat, the option to use the Advance Mitigation Program was not specified in **BIO-20**.

CDFG has subsequently developed the Interim Mitigation Strategy (CDFG 2010). The purpose of the Interim Mitigation Strategy is to "develop and articulate a conceptual approach to conservation investments (land acquisition, enhancements, restoration) that guides the implementation of project mitigation of eligible projects. The intent is to pool financial resources from eligible projects needing to mitigate impacts to CESA [California Endangered Species Act] Listed and Candidate Species and target conservation investments to maximize protection of habitat values, connectivity, and ecological processes in the California Desert Region" (CDFG 2010). The CDFG consulted with Energy Commission staff, Bureau of Land Management (BLM), and the U. S. Fish and Wildlife Service (USFWS), collectively referred to as Renewable Energy Action Team (REAT) agencies, regarding the acquisition of lands and conservation easements to protect, restore, and enhance the habitat of plants and wildlife and fully mitigate the impacts of take of endangered, threatened, or candidate species. In the intervening period since the Commission's Final Decision for the project, CDFG has acquired acreage sufficient to mitigate for the ISEGS project's impacts; within areas collectively determined by REAT agency representatives to be of regional conservation value.

After rejecting BrightSource's Castle Mountain Mine mitigation proposal in November 2011, Energy Commission staff encouraged the project owner to work closely with the REAT agencies to identify suitable habitat lands and to consider mitigation options like CDFG's Advance Mitigation Program. With Energy Commission staff's support, the project owner entered into the Advance Mitigation Program in January 31, 2012. In April, 2012, CDFG prepared the "Mitigation Proposal for Solar Partners Ivanpah Solar Energy Generating System", and submitted it to Energy Commission staff for review and comment. The mitigation proposal created by CDFG for the project includes over

100 separate parcels from CDFG's Advance Mitigation Program. These parcels are located within the Western Mojave Desert Tortoise Recovery Unit in San Bernardino County, within the area of Hidden Hills Valley-Cady Mountain, Fremont-Kramer Desert Wildlife Management Area (DWMA), and Superior-Cronese DWMA, and within the Colorado Desert Recovery Unit in Riverside County in the Chuckwalla DWMA. DWMA's are considered prime areas for conservation, as DWMA's are designated by the BLM to protect high quality desert tortoise habitat, and development within a DWMA is limited to no more than one percent (1%) (USFWS 2011).

The Advance Mitigation Program currently has no parcels containing waters of the state within the Pahrump-Ivanpah watershed, which is primarily located outside of California. All mitigation parcels selected to mitigate desert washes are outside the Ivanpah-Pahrump watershed and are closed, unconnected basins.

CDFG has assessed the lands within their holdings for waters of the state. This was accomplished using the National Hydrography Dataset (NHD), a digital vector dataset mapping features such as lakes, ponds, streams, rivers, canals, dams, and stream gauges. CDFG overlaid the NHD over ISEGS mitigation parcels and quantified state waters using Google Earth and ArcMap. Each parcel was visually assessed for apparent Waters or alluvial fans using 2010 National Agriculture Imagery Program images at 4 foot pixel resolution. The boundary of each channel was digitized at the closest scale at which it could be visualized. No attempt was made to digitize the boundaries of small (< 10 foot) channels or braided channels within alluvial fans. The narrowest channels digitized were slightly over 10 foot, or approximately 3 pixels wide, but those were generally portions of channels within obvious channel networks that were clearly identifiable. Alluvial fans were identified by coloration and vegetation.

The Fremont-Kramer/Superior-Cronese mitigation area is in the Coyote-Cuddleback Lakes watershed, the Hidden Valley mitigation area is in the Mojave River watershed, and the Chuckwalla DWMA is located in the Southern Mojave watershed. Watersheds associated with all mitigation areas are within closed (i.e., not connected) water basins.

Cumulative Impacts

The Energy Commission Decision (2010b) for the project concluded that the ISEGS project, combined with other proposed development, would eliminate a tract of desert tortoise habitat in the Ivanpah Valley. The document further concluded that the "past, present, and future proposed activities contribute to the significant loss of Ivanpah Valley vegetation communities, wildlife habitat, and special-status species. Staff considers the 4,065-acre ISEGS project to be a substantial contributor to the cumulatively significant loss of Ivanpah Valley's native Mojave Desert plant and wildlife communities". The Commission determined that cumulative impacts could be reduced to less than significant levels with compensatory mitigation, outlined in Condition of Certification **BIO-17**, Desert Tortoise Compensatory Mitigation. Condition **BIO-17** directs the project owner to mitigate for habitat loss at a 2:1 ratio.

The REAT agencies consulted with CDFG at the time of selection of parcels for the Interim Mitigation Strategy. Lands were chosen to promote tortoise conservation, provide habitat for a variety of other listed and threatened plants and wildlife, to promote connectivity of habitat, and to reduce fragmentation, among other goals. Staff therefore believes that the project owner's participation in the advance mitigation strategy will

ensure that cumulative impacts are mitigated to below significance. This is because CDFG and the REAT agencies have carefully selected mitigation lands with the goal of regional conservation, and participation in such a coordinated regional conservation strategy will conserve ecosystem function and character in areas with the best chance of remaining undeveloped in the future. The proposed amendment to modify Condition of Certification **BIO-20** will not cause the project to contribute to cumulative biological resources impacts to a greater degree than originally analyzed in the Commission Decision.

CONCLUSIONS AND RECOMMENDATIONS

Staff believes that CDFG's determination of acres of waters of the state on compensatory mitigation parcels is an underrepresentation of actual acres of waters present. This stems from the project owner's approach taken to delineate all washes at least one foot in width on the project site; whereas CDFG delineated washes of ten feet in width on the compensatory parcels.

Parcels selected by CDFG and Energy Commission staff for mitigation of the ISEGS project were determined to have similar permeability, hydrological, and biological functions as the drainages affected by development of the ISEGS project, and therefore would constitute full mitigation. The delineation of waters at the ISEGS site included drainage channels of one foot in width as jurisdictional, whereas the delineation performed by CDFG only accounts for washes 10 foot in width or more. Use of the parcels from CDFG's Advance Mitigation Program would ultimately provide more than 500 acres of state waters.

REAT agencies representatives have agreed that properties identified by CDFG provide protection, restoration, and enhancement of species and habitats proposed to be covered by the DRECP including the desert tortoise and state waters; are located within the DRECP planning area; and the properties' habitat values (existing or upon restoration/enhancement) fully mitigate impacts to desert tortoise and state waters, pursuant to Fish and Game Code section 1600. As described in **BIO-20 #3**, compensatory offsets may be "nested" or overlap, where the criteria for both desert washes and desert tortoise mitigation (per condition **BIO-17**) are both met. Energy Commission staff have determined that the project owner's participation in the CDFG Advance Mitigation program would not impact biological resources.

PROPOSED MODIFICATIONS TO CONDITION OF CERTIFICATION

Staff has proposed modifications to Biological Resources Condition of Certification **BIO-20** as shown below. (**Note:** Deleted text is in ~~strikethrough~~, new text is **bold and underlined**)

- BIO-20** The project owner shall implement the following measures to avoid, minimize and mitigate for impacts to ephemeral drainages:
1. Acquire Off-Site Desert Wash: The project owner shall acquire, in fee or in easement, a parcel or parcels of land that includes ephemeral washes with at least 175 acres of state jurisdictional waters. The terms and conditions of this acquisition or easement shall be as described in Condition of Certification BIO-17 with the additional criteria that the desert wash mitigation lands: 1) include at least 175 acres of state jurisdictional

waters; 2) be characterized by similar soil permeability, hydrological and biological functions as the impacted drainages; and 3) be located within the California Desert Renewable Energy Conservation Plan planning area ~~same watershed as the impacted wash~~. The desert wash mitigation lands may be included with the desert tortoise mitigation lands ONLY if the above ~~three~~ criteria are met.

The Project owner may choose to satisfy its mitigation obligations identified in this Decision by participating in an advanced mitigation program such as that established by CDFG, pursuant to Fish and Game Code sections 2069 and 2099.

The verification would not be altered in any way, and so reads as follows:

Verification: No less than 90 days prior to acquisition of the parcel (s) containing 175 acres of waters of the state, the project owner, or a third-party approved by the CPM, in consultation with CDFG, shall submit a formal acquisition proposal to the CPM and CDFG describing the parcel(s) intended for purchase.

Draft agreements to delegate land acquisition to CDFG or an approved third party and agreements to manage compensation lands shall be submitted to Energy Commission staff for review and approval (in consultation with CDFG) prior to land acquisition. Such agreements shall be mutually approved and executed at least 60 days prior to start of any project-related ground disturbance activities. The project owner shall provide written verification to the CPM that the compensation lands have been acquired and recorded in favor of the approved recipient(s). Alternatively, before beginning project ground-disturbing activities, the project owner shall provide Security in accordance with this condition. Within 90 days after the land purchase, as determined by the date on the title, the project owner shall provide the CPM with a management plan for review and approval, in consultation with CDFG, for the compensation lands and associated funds.

No fewer than 30 days prior to the start of work potentially affecting waters of the state, the project owner shall provide written verification (i.e., through incorporation into the BRMIMP) to the CPM that the above best management practices will be implemented and provide a discussion of work in waters of the state in Compliance Reports for the duration of the project.

References

- CDFG 2010. Interim Mitigation Strategy as Required by SB X8 34. September 2010. DRECP 1000-2010-006-F.
- CH2M Hill 2008. Data Responses Set 1G. (tn: 47983). Revised Wetland Delineation. Submitted to California Energy Commission Docket Unit September 10, 2008.
- CH2M Hill 2009. Data Responses Set 1L (tn: 51790). CDFG Streambed Alteration Agreement for the Ivanpah Solar Electric Generating System Project. Submitted to California Energy Commission Docket Unit June 2, 2009.
- CH2M Hill 2009a. Data Responses Set 2G (tn: 51884). Submitted to California Energy Commission Docket Unit June 9, 2009.
- Energy Commission 2010a. Final Staff Assessment Addendum Ivanpah Solar Electric Generating System (07-AFC-5). March, 2010. (CEC-700-2008-013-FSA-AD).
- Energy Commission 2010b. Ivanpah Solar Electric Generating System Commission Decision (07-AFC-05). September, 2010. (CEC-800-2010-004 CMF).
- Energy Commission 2009. Final Staff Assessment and Draft Environmental Impact Statement and Draft California Desert Conservation Area Plan Amendment (07-AFC-05) October 2009.
- Energy Commission 2008. Preliminary Staff Assessment Ivanpah Solar Electric Generating System (07-AFC-5). December 2008.
- Solar Partners 2012. Petition to Amend Commission Decision Ivanpah Solar Electric Generating System.
- USFWS 2011. Revised Recovery Plan for the Mojave Population of the Desert Tortoise (*Gopherus agassizii*). U.S. Fish and Wildlife Service, Pacific Southwest Region, Sacramento, California. 222 pp.

BIOLOGICAL RESOURCES - FIGURE 1

Ivanpah Solar Electric Generating System - Ivanpah-Pahrump Valley Watershed

