ATTACHMENT DR 40d-3

SPRING 2013 PRE-CONSTRUCTION AVIAN SURVEY RESULTS

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California Energy Commission
Dockets Unit
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Subject: **PSEGS PRELIMINARY SPRING 2013 PRE-CONSTRUCTION AVIAN FIELD SURVEY RESULTS**
PALEN SOLAR ELECTRIC GENERATING SYSTEM
DOCKET NO. (09-AFC-7C)

Enclosed for filing with the California Energy Commission is the electronic version of **PSEGS PRELIMINARY SPRING 2013 PRE-CONSTRUCTION AVIAN FIELD SURVEY RESULTS**, for the Palen Solar Electric Generating System (09-AFC-7C).

Sincerely,

Marie Fleming

Bloom Biological, Inc.
Research | Consulting | Conservation

May 29, 2013

Mr. Charles Turlinski
Director – Project Development
BrightSource Energy, Inc.

[via email]

SUBJECT: Preliminary results from Spring 2013 pre-construction avian field surveys for the Palen Solar Project located in the Chuckwalla Valley, Riverside County, California

Dear Mr. Turlinski:

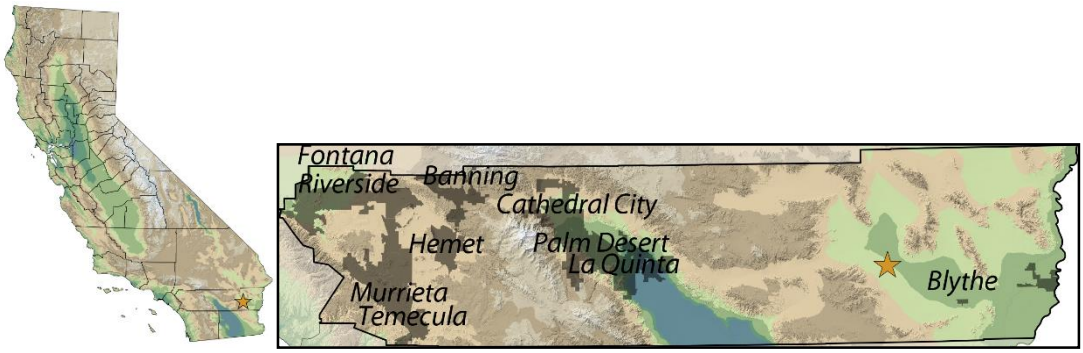
Bloom Biological Inc. (BBI) was retained by Palen Solar Holdings to conduct Spring 2013 pre-construction avian field surveys for the Palen Solar Project located in the Chuckwalla Valley, Riverside County, California. The surveys conducted were based on recommendations for Tier 3 field studies described in the U.S. Fish and Wildlife Service Land-Based Wind Energy Guidelines, as well as recent guidance provided by the Renewable Energy Action Team (REAT) agencies specifically for the Palen Solar Project.

This letter presents the methods used and summarizes the raw, preliminary results of BBI's Spring 2013 avian surveys at the request of Palen Solar Holdings. The results are preliminary because the data have not yet been proofed or subjected to quality assurance procedures. The scope of this letter report does not include analysis of the data collected. Analysis of the data and interpretation of results within the context of the proposed project will not occur until all studies are completed and a final report is produced.

SITE DESCRIPTION

The Project Site is comprised of approximately 3,793 acres (1,535 hectares) located just north of Interstate 10 near the Chuckwalla Valley Road exit. On the Public Land Survey System, the Project Site is located in all or portions of Sections 27, 28, 29, 30, 31, 32, 33 and 34 of Township 5 South, Range 17 East and Sections 2, 3, 4, 5 and 6 of Township 6 South, Range 17 East of the U.S. Geological Survey's 7.5-minute *Sidewinder Well* quadrangle. Elevations on the Project Site range from approximately 440 feet (134 meters) above mean sea level near the northeastern boundary to 680 feet (207 meters) above mean sea level near the southwestern boundary. There are no significant terrain features on the Project Site, and terrain decreases gradually from southwest to the northeast.

Figure 1. Project site location relative to the state (left) and county (right).



METHODS

BBI conducted Bird Use Count (BUC) surveys, Small Bird Count (SBC) surveys and Mist Net (MN) surveys for four weeks between the dates of April 8 and May 5, 2013 on and adjacent to the Project Site. The abbreviated methods and summarized results of these surveys are discussed below.

BUC surveys were conducted to evaluate the use of the Project footprint and surrounding areas by medium to large resident and migratory birds, including Golden Eagles (A*quila chrysaetos*) and other raptors. Six BUC observation points (O.P.s) were established across an area encompassing the project footprint plus a 0.6 mile (1 kilometer) buffer. Two of the O.P.s are situated within 220 yards (200 meters) of the proposed solar tower sites for the project. Though bird detections were recorded at all distances, quantitative data were recorded for detections occurring within a 0.5-mile (800-meter) radius of BUC observation points. Under this design, the total area surveyed from the six BUC observation points (4.7 mi^2 or 12.1 km^2) comprised 31.5% of the area within the Project Site boundary plus a 0.6 mile (1 km) buffer (14.8 mi^2 or 38.34 km^2). The coverage of the project footprint is not homogeneous, as more O.P.s were allocated on the eastern side of the project footprint where a palm plantation and a number of perennial ponds provide roosting and foraging habitat for migratory raptors and shorebirds.

For BUC surveys, each observation point was manned by a qualified avian biologist for 8 hours per day, 4 days per week. The starting time for surveys was rotated among the days of each week such that approximately ¼ of the 8-hour long surveys began at sunrise, ½ began 4 hours prior to mid-day and ¼ began 8 hours before sunset; thus ensuring that all stations are surveyed at all times of day, but with the focus being on the midday periods when raptors were expected to be most active. In addition, biologists rotated between observation points to ensure that all points were surveyed at various times of day equally by different biologists within a given season.

During BUC surveys, each biologist remained at the station for 8 consecutive hours (weather permitting) and recorded the following information for all focal species, which included all raptors, and other targets larger than an American Crow (*Corvus brachyrhynchos*) that passed within 1.2 miles (2 kilometers) of the observer (Golden Eagles were recorded at all distances): time, observation point ID, species, distance and direction from surveyor, estimated height above ground level (agl), flight direction and number of individuals (if in moving in a group). Additional information regarding flight movements was collected for focal species that passed within 0.5 miles (800 meters) of the observer, including the following (as pertains to behaviors within this distance range only): flight types observed, minimum height (agl), maximum height (agl), total number of minutes spent flying at heights of less than the height of the proposed towers. All non-focal species observations were summarized on a separate form and the

following summary data were collected on an hourly basis: number of individuals that passed within 0.5 miles (800 meters) of the observer, and the number of minutes spent flying at 0-49 and > 50 meters in height.

Using rangefinders and landmarks, all BUC surveyors were trained in estimating distances across the range expected for these surveys. Surveyors were also provided with a rangefinder when conducting surveys, so they could measure the distances to various landmarks around each station and use the landmarks accordingly in distance estimates.

SBC surveys were conducted to evaluate the use of the Project footprint and surrounding areas by resident and migrant passerine and other small and medium-sized birds, though larger birds and raptors were recorded as well. A total of 120 SBC stations was established across an area encompassing the project footprint plus a 0.6 mile (1 kilometer) buffer.

SBC surveys were conducted between 15 minutes prior to sunrise and 6 hours after sunrise, to ensure the maximum probability of detecting target species, as this is the most active time of day for passerine birds, particularly in desert habitats. The order in which stations were surveyed was rotated weekly such that each station was surveyed at different times of the morning. In addition, biologists rotated between observation points to ensure that all points were surveyed roughly equally by different biologists.

The 120 Spring SBC count stations were arranged along 9 survey transects and provided coverage of the major habitat types present within the project footprint and surrounding 0.6 mile (1 kilometer) buffer. All stations were separated by a distance of at least 270-380 yards (250-350 meters) to ensure independence of observations. Station locations were chosen by first creating transect routes that passed through desired habitats such as Desert Dry Wash Woodland, Un-vegetated Ephemeral Dry Wash Upland and Sonoran Creosote Bush Scrub, as well as other less well-represented habitat types present within the survey area. Once transects were established a series of random distances between 270-380 yards (250-350 meters) was generated and stations were placed along the transects at these sequential distances to ensure that survey stations were allocated randomly. Under this design, the total area surveyed from the 120 SBC stations comprises at least 9.8% (1.5 mi^2 or 3.8 km^2) of the area occupied by the project boundary and 0.6 mile (1 km) buffer (14.8 mi^2 or 38.34 km^2). This conservatively assumes a survey radius of 110 yards (100 meters) around each station, though many of the detections occurred at greater distances.

During SBC surveys, qualified avian biologists began noting birds detected by sight and sound immediately after arriving at the station and for 10 minutes thereafter. Biologists also recorded all sightings of black-tailed jackrabbit (*Lepus californicus*) and desert cottontail (*Sylvilagus audubonii*) while walking along transects between point count stations. Though bird of all sizes and at all distances from the observer were recorded, an emphasis was placed on detecting birds within 110 yards (100 meters) of the observer. For each bird detected, biologists recorded the following information: species, sex (if known), age (if known), distance from station, direction from station (W, NW, N, etc.), the minimum and maximum heights reached above ground, total number of minutes (rounded up to the nearest whole minute) observed flying between 0-49, 50-199 and >200 meters in height, and mode of detection (visual, song, call, other). Anecdotal observations indicating breeding activity were also noted, including whether the birds were observed carrying nesting material or food, or attending nests or fledglings. The coordinates and status of all nests were recorded.

Using rangefinders and landmarks, all surveyors were trained in estimating distances across the range expected for these surveys. Surveyors were also provided with a rangefinder when conducting surveys, so they could identify the distances to various landmarks around each station and use the landmarks accordingly in distance estimates.

Mist net surveys were conducted at 24 of the 120 SBC point count stations; 12 of the 24 stations were located within the direct (permanent) disturbance area and 12 were located within the indirect disturbance area, at various distances from the direct disturbance area. The 24 SBC stations where mist netting occurred were arranged in 8 clusters of 3 adjacent SBC stations on the same transect. The three stations within a cluster were surveyed on the same day.

Each day, three biologists worked together to survey three adjacent point count stations, operating four standard 2.6 x 12 meter mist nets per station for a total of twelve nets per day. Each week 6 stations (2 clusters of 3 stations) were surveyed for one day each. The four nets were arranged, and oriented, to the north, east, south and west of each observation point. Nets remained open from sunrise until 1100h daily unless precipitation, extreme temperatures, or high winds caused the nets to be closed early.

All birds captured in nets were removed carefully, banded with a unique aluminum Fish and Wildlife Service leg band and released. Information recorded for all captures included: station, date, time, bander's name, band number, molt, level of stored fat, and feather/plumage characteristics and where possible, age and sex.

RESULTS

During a combined 571 hours of surveying at six BUC stations over a four week period a total of 12 focal species was observed at all distances, with 11 species occurring within the 0.6 mile (800 meter) survey radius (survey area). The most commonly observed species were Turkey Vulture (1201 detections) and Common Raven (469 detections), which spent 96% and 91% of the time flying at heights below 200 meters, respectively. Three species of special concern, the Northern Harrier (*Circus cyaneus,* 32 detections), Swainson's Hawk (*Buteo swainsoni;* 114 detections) and Burrowing Owl (*Athene cunicularia,* 10 detections) were observed during surveys. No Golden Eagles were observed at any distance during Spring BUC surveys. A total of 35 non-focal species was observed during Spring BUC surveys. Among non-focal species, the most frequently detected non-focal species were the Horned Lark (*Eremophila alpestris;* 256 detections) and Tree Swallow (*Tachycineta bicolor*; 210 detections), followed by the Mourning Dove (*Zenaida macroura*; 51 detections) and other less frequently observed species. Four special status bird species were among the non-focal species detected, including Vaux's Swift (*Chaetura vaux*), Loggerhead Shrike (*Lanius ludovicianus*), Le Conte's Thrasher (*Toxostoma lecontei*), and Yellow-breasted Chat (*Icteria virens*).

Each of the 120 SBC point count stations was surveyed four times during the four-week period and a total of 78 species was observed at all distances, though 48 of these species were relatively rare with 10 or fewer individuals detected over the course of the Spring SBC survey period. The most frequently observed species was Turkey Vulture (360 detections) followed by Horned Lark (294 detections) and Cliff Swallow (*Petrochelidon pyrrhonota*; 274 detections). Of note, a number of shorebird and waterfowl species were detected during Spring SBC surveys, though not in high numbers. These were mostly detected on or near ponds on the adjacent properties but were occasionally seen flying over other areas of the Project footprint.

Mist Net (MN) surveys were conducted on 8 days, 2 days per week, at 8 banding stations, each consisting of net arrays at clusters of 3 SBC stations. Four of these stations were in Desert Dry Wash Woodland and four were in Sonoran Creosote Bush Scrub. Each day nets remained open from approximately sunrise until 1100h. In total 21 individuals of 11 species were captured and banded. No birds were captured during MN surveys in Sonoran Creosote Bush Scrub habitat. One species, Hermit Warbler (*Setophaga occidentalis*), was captured during MN surveys and was not detected on site during any other type of survey.

If you have any questions or comments regarding this letter please feel free to call us at 949-272-0905.

Sincerely,

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PALEN SOLAR ELECTRIC GENERATING SYSTEM AMENDMENT

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(Revised 05/23/2013)

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DECLARATION OF SERVICE

I, Marie Fleming, declare that on June 5, 2013, I served and filed copies of the attached PSEGS PRELIMINARY SPRING 2013 PRE-CONSTRUCTION AVIAN FIELD SURVEY RESULTS, dated May 29, 2013. This document is accompanied by the most recent Proof of Service, which I copied from the web page for this project at: http://www.energy.ca.gov/sitingcases/palen/compliance/.

The document has been sent to the other persons on the Service List above in the following manner:

(*Check one*)

For service to all other parties and filing with the Docket Unit at the Energy Commission:

_X_ I e-mailed the document to all e-mail addresses on the Service List above and personally delivered it or deposited it in the U.S. mail with first class postage to those parties noted above as "hard copy required"; OR

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I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct, and that I am over the age of 18 years.

Dated: June 5, 2013

Marie Fleming