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STATE OF CALIFORNIA
ENERGY RESOURCES CONSERVATION
AND DEVELOPMENT COMMISSION

In the Matter of: **Application for Certification for the** **PALEN SOLAR ELECTRIC GENERATING SYSTEM**	**Docket No. 09-AFC-07C**

ENERGY COMMISSION STAFF OPENING BRIEF

(REOPENED EVIDENTIARY RECORD)

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(REOPENED EVIDENTIARY RECORD)

I. INTRODUCTION

Palen Solar Holdings, LLC (PSH) has filed a Petition For Amendment of the Palen Solar Power Project (PSPP) which was approved by the Energy Commission on December 15, 2010 (Order No. 10-1215-19, the "Final Decision", 09-AFC-7). The Petition proposed to eliminate the use of solar parabolic trough technology and replace it with BrightSource's LPT solar power tower technology. The proposed amended project is referred to as the Palen Solar Electric Generating System (PSEGS).

The Committee held evidentiary hearings on the proposed amendment in October and November of 2013, and issued the Presiding Member's Proposed Decision (PMPD) on December 13, 2013. The PMPD recommended denial of the amendment without prejudice. PSH subsequently requested a delay in the schedule to address insufficiencies identified in the PMPD. The Committee suspended the proceedings subject to PSH's filing of a motion to reopen the evidentiary record. On March 21, 2014, PSH filed its Motion to Reopen the Evidentiary Record and on May 21, 2014, the Committee granted the motion.

The Committee held another round of evidentiary hearings on July 29 and 30, 2014. The issues covered in the reopened evidentiary hearings included:

- Traffic and Transportation: Glint and Glare Impacts to Pilots
- Cultural Resources: Condition of Certification **CUL-1**
- Project Description, including Natural Gas Consumption and Thermal Energy Storage
- Alternatives
- Overriding Considerations; and
- Biological Resources: Avian Impacts, Insects, Curtailment, and Deterrents

Staff provided testimony on all issues except Alternatives and Overriding Considerations. The information discussed at the evidentiary hearings have not changed Staff's prior determination that the PSEGS project would result in significant environmental impacts that cannot be mitigated for Visual Resources and Cultural Resources and would very likely result in significant and unmitigable impacts to Biological Resources.

This brief will provide a summary of Staff's positions and conclusions on the following issues: Traffic and Transportation, glint and glare impacts to pilots; Cultural Resources, **CUL-1**; Project Description, including Natural Gas Consumption and Thermal Energy Storage; Biological Resources, including avian impacts, insects, curtailment, and deterrents; and Overriding Considerations.

II. TRAFFIC AND TRANSPORTATION: GLINT AND GLARE IMPACTS TO PILOTS

Since the filing of the PMPD for PSEGS, aircraft pilot complaints relating to glare from the ISEGS project have been reported. (Exh. 2017, pp. 47 to 48.) The Committee inquired whether this new information called into question any of the discussion or the efficacy of the mitigation measures in the PMPD. (TN 202362, p. 4.) The parties provided extensive testimony on this issue and held a workshop to discuss engineering issues and revisions to Condition of Certification **TRANS-7**. Staff concludes that the revisions made to **TRANS-7** will require glare impacts to pilots to be reduced to less than significant. (TN 202877; 7/29/14 RT pp. 112 to 113.)

III. CULTURAL RESOURCES: CONDITION OF CERTIFICATION CUL-1

In its PMPD, the Committee found that the PSEGS facility would introduce stark visual intrusions on the Chuckwalla Valley portion of the PRGTL that would profoundly and irreparably degrade the ability of the landscape to convey its historical significance. The Committee further found that the construction and operation of the PSEGS project's infrastructure will result in a significant and unmitigable impact on the Chuckwalla Valley portion of the PRGTL, and that compensatory mitigation, through *revisions* to Condition of Certification **CUL-1**, would serve to ameliorate the loss of the Chuckwalla Valley portion of the PRGTL's ability to convey its associative values, but would not reduce the PSEGS project's effects to a less than significant level. (PMPD pp. 6.3-60 to 61.)

Revisions to **CUL-1** have been the focus of this phase of the proceedings related to Cultural Resources. PSH, Staff and CRIT have not come to an agreement on the appropriate revisions to **CUL-1**. Staff has heard the Committee's concerns with Staff's explanation of its **CUL-1** approach as separating the interests of "place" and "people." (7/29/14 RT pp. 192 to 195, 205, 214 to 215.) And Staff has agreed that these interests are not mutually exclusive. (7/29/14 RT pp. 182 to 193, 195 to 200.) However, Staff stands by its approach for four important reasons:

1. Staff's approach *does* provide a significant voice to Native American tribes in the development of mitigation proposals in **CUL-1A**;

2. It is reasonable to provide an extra amount of funding for programs specifically directed to mitigating PSEGS impacts to tribes' abilities to perpetuate their cultures as proposed in **CUL-1B**;

3. CEQA requires that feasible mitigation measures are effective and monitored; and

4. *All* interested tribes should have an opportunity to consult and provide input as to how **CUL-1**, in whatever form it takes, is implemented.

1. The Committee stated that it would like the tribes to have a significant voice in developing the mitigation proposal for cultural resources impacts. Staff's proposed **CUL-**

1A *does* provide for that significant voice in developing the mitigation proposal through Native American involvement in the design, monitoring, and execution of the fieldwork for the Paleoenvironmental Study and the Petroglyph Study; the design and execution of the revised Prehistoric Trails Network Cultural Landscape (PTNCL) Field Manual; and the content of any public outreach materials from the Native American communities who ascribe heritage values to the valley. (Exh. 2017, pp. 36 to 39.)

2. Staff believes it is reasonable to provide an extra amount of funding for programs specifically directed to mitigating for the PSEGS impacts to tribes' abilities to perpetuate their cultures as proposed in **CUL-1B**. (Exh. 2017, pp. 33 to 34 and 39.)

3. Staff's proposal for a Native American Advisory Group, which is markedly different than the current Genesis Tribal Working Group, is the only method proposed to ensure that the Native American tribes have a significant voice in the mitigation approaches taken *and* to ensure that the Energy Commission monitors the effectiveness of the mitigation it is requiring. (Exh. 2017, pp. 31-32.) No other party has provided an alternative method to achieve these same goals and requirements.

4. While Staff acknowledges that CRIT is the only tribal intervenor in this case, the involvement of the other tribes affiliated with the Chuckwalla Valley in the design and implementation of specified mitigation measures or the selection of programs designed for the direct benefit of any or all affected tribes should not be eliminated. (7/29/2014 RT pp. 220, 227, and 233.) It is Staff's practice to consult with all tribes affiliated with an area that will be impacted by a proposed project. (Executive Order B-10-11 (September 2011) and the Natural Resource Agency's Tribal Consultation Policy (November 2012).) The Native American Advisory Group will provide a forum for all affected tribes to meet, deliberate, and provide recommendations. (Exh. 2017, p. 40.)

In conclusion, Staff is not wedded to a particular structure of **CUL-1**, but does believe that Staff's general approach is the best proposal to achieve the stated goals of the Committee as well as comply with CEQA and other legal requirements.

IV. PROJECT DESCRIPTION

1. Revised Phasing Plan

PSH originally proposed to build both towers of the PSEGS project simultaneously, but citing the improbability of meeting the Commercial Operation Date (COD) for PPA Number 6, PSH has provided a revised phasing plan. (Exh. 1166, p. 1.) The revised phasing plan includes the construction of the westernmost solar field and power block, the common area (including just one of the evaporation ponds) and the construction laydown area, the project switchyard, the access road, the natural gas pipeline, and the generation tie-line as Phase I, and the easternmost solar field and power block and addition of the second evaporation pond within the common area as Phase II. (Exhs. 1166 and 1167.)

In addition, PSH proposes that construction of Phase II be conditioned upon Commission approval of a future amendment that would present modifications to the currently designed Phase II to incorporate thermal energy storage (TES). PSH has provided a proposed Condition of Certification **PD-1** to memorialize that commitment. (Exh. 1166, p. 3.)

The revised phasing plan would require changes to Bio Condition of Certification **BIO-29** and changes to **Soil&Water-3**. Staff agrees with PSH's proposed changes in **BIO-29** and Staff has provided a revised **BIO-29 Table 3** (Exh. 2034.) that conforms to the revised phasing plan should it be accepted. Staff also agrees to PSH's proposed changes to **Soil&Water-3**, but notes that one small correction needs to be made. PSH provides two verifications in this condition. The first appearance of the word "verification" should be removed. (7/30/14 RT pp. 33 to 34.)

In all other technical areas, Staff finds that the impacts associated with the revised phasing plan would either be beneficial or have no impact. No other changes to conditions of certification would be needed for the revised phasing plan. (7/30/14 RT pp. 34.)

2. Natural Gas Consumption

The Committee noted ISEGS' recent request to amend its permit to allow larger quantities of natural gas to be used at the ISEGS facility and asked whether a similar request would be necessary for PSEGS – preferring to address the issue now as opposed to a future amendment process. (TN 202362, p. 4.) At a workshop and in opening testimony, PSH stated that such a request would not be necessary for PSEGS. (Exh. 1152.) In order to more specifically analyze whether additional natural gas would be needed at the PSEGS facility, Staff asked PSH numerous questions in opening testimony. (Exh. 2017, pp. 74 to 75.) PSH responded to those questions in rebuttal testimony. (Exh. 1166, pp. 4 to 7.) Appropriate factors were considered to estimate natural gas needs, including, but not limited to, preliminary project design, site weather data, and start-up and shutdown assumptions, and PSH provided an explanation of relevant comparisons between the ISEGS and PSEGS project design. (7/30/14 RT, pp. 43 to 45; Exh. 1166, pp. 5-7.) After reviewing the additional information, Staff has concluded that, given the number of variables involved, there would be no benefit to considering a change to the quantity of natural gas at this time because it is not possible – short of actually operating the project under the specific site and operating conditions for a short period of time – to be any more certain about actual natural gas needs. (7/30/14 RT p. 45.) Given the information currently available, PSH's estimated gas usage appears plausible.

3. Thermal Energy Storage

At the January 7, 2014 Committee Conference, the Committee stated that a PSEGS project with energy storage would provide significant benefits to the state, and inquired whether it would be feasible for PSH to incorporate storage in the project or to construct

the project in such a way that storage could be economically incorporated after the fact. (TN 201608, pg. 13.)

Staff has generally recognized the benefit of thermal energy storage; it would allow PSEGS to sustain output capacity through reduced or transient solar conditions and ensure maximum output capacity during hours of high demand. (Exh. 2017, p. 71.) Staff has also provided some limited testimony on how a hypothetical thermal energy storage system may work within the existing PSEGS project design. (Exh. 2017, pp. 67 to 72.) However, PSH does not currently have a specific storage proposal for staff to analyze.

Under PSH's proposed **Project Description-1**, Phase II will not be constructed until PSH files, and the Commission approves, a Petition for Amendment that incorporates thermal energy storage into the design of Phase II. (Exh. 1166, p.3.) If and when such a petition is filed, Staff would perform a thorough analysis, including but not limited to a technical feasibility and reliability analysis, on a specific Phase II design. (Exh. 2017, p. 71; see also 7/30/14 RT pp. 39 to 41 and 59 to 62; and Cal. Code. Regs., Title 20, section 1769.)

V. BIOLOGICAL RESOURCES

1. Avian Impacts

At the January 7, 2014 Committee Conference, the Committee requested more information to assess the level of impacts to avian species anticipated at PSEGS. (TN 201608 p. 30) Since that time, a significant amount of new information has been filed related to avian impacts. PSH provided avian mortality tables showing reported mortalities, including the cause of mortality if known, from Genesis (a trough project), Desert Sunlight (a PV project), and ISEGS (a tower project). (Exh. 1133.) More information has come in from the ISEGS project including the Winter Quarterly Avian Report (Exh. 1174), ISEGS TAC Meeting Minutes (Exh. 1175), and a National Fish and Wildlife Forensics Laboratory Report regarding Avian Mortality at Solar Energy Facilities which included information from the ISEGS, Genesis, and Desert Sunlight projects (Exh. 3107.) There has been additional field survey data for the PSEGS project site (Exhs. 2021 and 2022), and there has been additional information provided regarding potential deterrent methods (Exhs. 1130, 1140, 1141, 1186). The parties have analyzed all of this new information and have provided extensive written and oral testimony on what the new information tells us about the potential impacts to avian species at PSEGS. There is no question that many experts have thought about and weighed this new evidence.

Staff has thoroughly analyzed the new information and has responded to how other parties have analyzed that data. (Exhs. 2017, 2018, and 2019.) For example, Staff has provided a response to PSH's risk assessment included in their draft Bird and Bat Conservation Strategy (BBCS). (Exhs 2018 and 1139.) Engineering staff's primary goal in providing its risk assessment was to provide Biological Resources staff with an analysis which could be used to make appropriate revisions to the BBCS; arming staff

with information that will guide the development of appropriate monitoring and mitigation approaches. (7/30/14 RT pp. 275 to 276) Biological Resources staff has used the conclusions of the engineering model to determine necessary revisions to the draft BBCS in written testimony and oral testimony provided at evidentiary hearings, and will continue to do so when the draft BBCS goes through the revision and approval process with the Energy Commission, Bureau of Land Management, and state and federal wildlife agencies. (Exh. 2018, p 15 to 16; 7/30/14 RT 277 to 278.)

While all of this information has been helpful to hone in on the general range of anticipated impacts, none of the information changes Staff's basic conclusion that the project may result in significant impacts that may not be mitigated to less than significant. (7/30/14 RT 278.) There will be flux related morbidity and mortality; the amount is unknown, but Staff thinks it will be significant. The level of significance and the ability to effectively mitigate to less than significance will depend on the specific species impacted and in what quantity. (7/30/14 RT 442 to 443.) Mitigation measures and deterrents may be sufficient to reduce the potential impact to avian species to less than significant, but that is uncertain. The multi-pronged mitigation approach – including habitat acquisition, power-line retrofits, monetary payments, monitoring, reporting, adaptive management, and various other Conditions of Certification benefiting avian species – has been developed through extensive consideration of possible feasible mitigation measures and will be effective to reduce impacts. But the specific impacts of the PSEGS project could never be known with certainty until this specific project in this specific location is operational. No amount of data from other projects will provide Staff with any more certainty about the impacts we would see at PSEGS and whether this suite of mitigation will mitigate those impacts to less than significant.

2. Insects

The potential impact to insects is too speculative to find that the impacts will be significant. (Exh. 2018, p. 29.) However, Staff believes that given the incidental information that has been provided from the operations at ISEGS, insect monitoring would be very helpful to further the understanding of insect ecology in the PSEGS area and to better understand the interaction of insects and this technology. (Exh. 2018, pp. 29 to 30.) In rebuttal testimony, staff suggested revisions to Condition of Certification **BIO-16b** to include particular monitoring activities. (Exh. 2018, pp. 20 to 21.) At evidentiary hearings, PSH disagreed with staff's suggested revisions to **BIO-16b**, questioning the authority as well as the feasibility of implementing the monitoring activities, (7/30/14 RT pp. 234to 235. Although the transcript says "agree", the rest of the commentary, and staff recollection, is that PSH "disagreed" with monitoring requirements; see also PSH's counsel's comments at 290.) Staff took these concerns into consideration and acknowledged the unintentionally open-ended nature of the suggested revisions and is no longer recommending those suggestions. (7/30 RT pp. 425.) In reviewing the existing provisions of **BIO-16b**, Staff believes that the currently required prey abundance surveys that will be conducted to identify the locations and changes in the abundance of prey species – which would include insects – will be designed to provide helpful information regarding insect behavior on the project site, and can be used to determine whether insects are being attracted to the tower, mirrored

heliostats, or other project features. (See Exhibit 1128, Condition of Certification **BIO-16b**, BBCS Components, section 3.)

3. Curtailment

Eliminating harmful levels of solar flux would reduce risk to avian species. However, given the operational mechanics of this technology and the inability to detect and identify birds or determine their flight path from a far enough distance, Staff is not confident that temporary curtailment would be an effective mitigation approach. (Exh. 2018, pp 9-10.) Seasonal curtailment, such as requiring the project to curtail operations for a particular duration of time, may be effective, but only after data is gathered to show that the project is having harmful impacts to an at-risk species at a consistent time each year. (Exh. 2017, p. 18.) At this time, without any such data, Staff does not believe this would be a useful mitigation approach and has not recommended including a curtailment provision in any condition of certification. (Exh. 2018, p. 11.)

4. Deterrents

Staff appreciated the opportunity to discuss specific issues related to how the DeTect deterrent technology would work at a site like PSEGS. (7/30/14 RT 397-421.) Staff believes that this type of operational mitigation has the potential to deter birds from the project site and is certainly worth implementing at PSEGS if testing at ISEGS demonstrates effectiveness. (Exh. 2018, p. 3.) In its draft BBCS, PSH has proposed to test two different detection technologies and two different deterrent technologies and report the results to the TAC for possible permanent implementation. (Exh. 1139, p. 65-66.) However, until operational data is gathered to determine the level of effectiveness this type of system could provide, Staff is still not certain that deterrents could reduce impacts to less than significant. (Exh. 2018, p. 3.)

VI. OVERRIDING CONSIDERATIONS

Roger Johnson, Deputy Director of the Siting, Transmission and Environmental Protection Division, provided Staff's Comments Regarding a Possible Energy Commission Finding of Overriding Considerations. The comments concluded that with the revised phasing approach and the adoption of Staff's recommended conditions of certification for biological and cultural resources, Staff no longer has a recommendation on whether the Commission should adopt a statement of overriding considerations. (Exh. 2036.)

Date: August 15, 2014

Respectfully Submitted,

/s/
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