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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-7C

INTERVENOR CENTER FOR BIOLOGICAL DIVERSITY'S COMMENTS ON THE PRELIMINARY STAFF ASSESSMENT JUNE 2013 CEC-700-2013-003-PSA PALEN SOLAR ELECTRIC GENERATING SYSTEM

July 29, 2013

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In the Matter of:	
APPLICATION FOR CERTIFICATION FOR THE PALEN SOLAR ELECTRIC GENERATING SYSTEM	DOCKET NO. 09-AFC-7C

The Center for Biological Diversity ("Center") submits the following comments and documentary evidence regarding the Preliminary Staff Assessment for the proposed project, CEC-700-2013-003-PSA– Palen Solar Electric Generating System, which was made available to the public and the parties on June 28, 2013. .

Dated: July 29, 2013 Respectfully submitted,

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July 29, 2013

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RE: Application For Certification For The Palen Solar Electric Generating System Docket No. 09-AFC-7C: Comments on the Preliminary Staff Assessment June 2013 CEC-700-2013-003-PSA – Palen Solar Electric Generating System

Dear Ms. Stora,

The Center for Biological Diversity ("Center") is a non-profit environmental organization dedicated to the protection of native species and their habitats through science, policy, and environmental law. The Center has over 500,000 members and supporters throughout California and the western United States, including members that live nearby the vicinity of the proposed project and recreate in the nearby public lands. On July 2, 2010, the Center was granted leave to intervene in the original proceeding for the previous Palen Solar Power Project (PSPP). Subsequently, the Center reconfirmed intervenor status in the amendment process for the new proposed project amendment. The Center submits these comments and the attached documentary evidence regarding the June 2013 Preliminary Staff Assessment ("PSA") on behalf of our board, staff and members.

I. INTRODUCTION

The development of renewable energy is a critical component of efforts to reduce greenhouse gas emissions, avoid the worst consequences of global warming, and to assist California in meeting its mandated emission reductions. For this reason, the Center strongly supports the development of renewable energy production, and the generation of electricity from solar power, in particular. However, like any project, proposed solar power projects should be thoughtfully planned to minimize impacts to the environment. In particular, renewable energy projects should avoid impacts to sensitive species and habitat, and should be sited only after taking into account the full impacts of each project technology. Preferably, projects should be sited in previously disturbed areas and in proximity to the areas of electricity end-use in order to reduce the need for extensive new transmission lines and the efficiency loss associated with extended energy transmission. Only by maintaining the highest environmental standards with regard to local impacts, and effects on species and habitat, can renewable energy production be truly sustainable.

The current site proposed for this project in the Chuckwalla Valley in eastern Riverside County, California is relatively devoid of human disturbance except for some dirt roads. We concur with the Preliminary Staff Assessment which states that the

proposed project "would have significant impacts to biological resources, impacting all of the Sonoran creosote bush scrub, sand dunes, desert washes and other native plant and wildlife communities within the approximately 3,794-acre site as well as along the natural gas line corridor and proposed and approved generation tie-line corridor." PSA at pg. 4.2-1. In addition, the proposed project will significantly impact sand dunes off-site by disrupting natural eolian transport across the landscape, disrupt surface hydrology, cause long-range visual impacts (including within a National Park unit and in several wilderness areas), and have significant on- and off-site impacts to avian species.

For biological resources and four other independent impact analysis topics (air quality/greenhouse gases; cultural resources; traffic and transportation; and geology and paleontology), the PSA is incomplete, making it impossible to assess, much less comment on, all of the proposed project impacts. The absence of these important analyses and deferment to the FSA for the analyses is concerning as it undermines the public review process forcing the public and parties to this matter to expend time and energy reviewing the proposed project piecemeal rather than being able to consider the project as a whole in comments. In the past the CEC has also rushed the environmental analysis of projects in order to meet unrealistic deadlines and in doing so, gave short-shrift to the environmental analysis forcing the public and parties to respond to a constantly changing project description without any clear stable environmental analysis. Rather, the public and other parties are forced to track a moving target that often changes based on side-agreements reached between staff and the applicant which ignore concerns raised by the public and other parties.

In the past, the CEC's poorly executed environmental review process has resulted in projects being approved that then subsequently are subject to stop-work orders. For example, stop work orders were issued on two highly controversial projects when one (Ivanpah Solar Electric Generating System) quickly exceeded its state and federal "take" permits for desert tortoise and was forced to re-consult with the wildlife agencies[1], and another project (Genesis) was forced to stop work on 400 acres of its project site when an ancient human settlement and artifacts were discovered during construction[2]. Despite the CEC's one "lessons learned" workshop, where the Center and many others addressed the problems with rushed permitting during the so-called "fast track" era when project approvals were rushed forward to assist companies in meeting target dates to qualify for DOE loan guarantees and ARRA funding, the CEC has failed to complete or even continue the "lessons learned" process and does not appear to have changed anything in the flawed permitting process. Unfortunately, the current permit amendment process is headed down a similar path, with the publishing of an incomplete PSA at the end of June 2013 and an aggressive schedule to permit the proposed project by the end of 2013. As intervenors in the original permitting process for a project on this same site, we believe the earlier environmental review should also be re-evaluated because it was rushed by the CEC in order to allow the now-bankrupt company (STA) to try to leverage the ARRA funding. Ironically, even though there is no "fast track" excuse for rushing the process at

[1] http://www.pe.com/local-news/topics/topics-environment-headlines/20110420-mojave-desert-tortoise-finds-curtail-solar-site-construction.ece

[2] http://articles.latimes.com/2012/feb/11/local/la-me-solar-foxes-20120211

this time, the applicant has stated that it is now pressing for a decision based on deadlines in its private contracts with a utility company – PPAs. However, PPA deadlines can be changed by the parties to the agreement and should not be allowed dictate the CEC process timeline or undermine adequate environmental review of the proposed project at a whole. In a news article July 23, 2013, the applicant stated that it needs to rush to get approval for this proposed project at the Palen site as soon as possible in order to be on line by June 2016 to meet the requirements of PPAs with PG&E: "The company has been pushing to get the state go-ahead on Palen by this fall, saying it's critical to meet its contract with Pacific Gas & Electric, requiring the plant to go online by June 2016."[3] This statement appears to refer to one of the PPAs in the CPUC Resolution E-4269 (September 29, 2009), as being in a place "to be determined" --PPA 5 (July 2016 on line date), 6 (December 2016 online date), or 7 (July 2017 on line date). Resolution at 2 (PPAs 3 and 4 were approved by the CPUC for a project at Coyote Springs in Nevada and the on line dates for those were even earlier). Notably, in another recent press report, on April 4, 2013, it was reported that the applicant and PG&E stated that two other PPAs were terminated, in the context of the proposed Hidden Hills project (which process was suspended): "This week, PG&E and BrightSource mutually agreed to terminate the power purchase agreements in connection with the Hidden Hills project due to challenges associated with the project schedule and uncertainty around the timing of transmission upgrades."[4] If two of the PPAs for projects in a place "to be determined", which ostensibly could have been used for the Hidden Hills project, were suspended then apparently only one PPA remains between the applicant and PG&E for a project in a place "to be determined" that could potentially be related to the proposed project at the Palen site—why the applicant and PG&E would have chosen only the earliest PPA to leave in place is unclear and is a choice made by those parties—it should not dictate the CEC's timeline for environmental review of the proposed project. While we are aware that a single other PPA was approved by the CPUC for a similar proposed project at the Rio Mesa site (Resolution E- 4522, October 29, 2012), that application was withdrawn and the PPA would need to be amended to change the site if that is the applicant's intent. To date, the Center has been unable to locate any notice to the CPUC regarding the suspended PPAs or any proposal to revise the PPA approved at the Rio Mesa site to transfer it to the proposed Palen site. Indeed, the applicant does not appear to be in a rush to correct the CPUC database or to revise the PPAs to reflect the actual proposed projects—it only appears to be in a rush to complete the CEC process. On this basis, as well as the fact that the PPAs can be revised by the parties as noted above, it is inappropriate for the CEC to rush the process for the proposed project approval based on the alleged need to meet deadlines in PPAs. The CEC must take to heart their past mistakes and implement a thorough environmental review of this controversial project and provide the public and parties with a complete environmental analysis of the project as a whole for review and comment.

[3] http://www.mydesert.com/article/20130722/BUSINESS0302/307220038/Developer-tribes-clash-over-Palen-plan

[4] http://www.sierrawave.net/24087/brightsource-pulls-plug/

The PSA recognizes that it lacks basic biological data that are key to impact analysis of the newly proposed technology. These missing data sets include:[5]

1. Results of bird and bat surveys conducted during 2013;
2. Results of spring 2013 avian point count surveys and spring 2013 raptor surveys;
3. Results of rare plant surveys conducted in spring 2013;
4. Results of cacti, yucca and trees protected by the California Desert Native Plan Act
5. Results of vegetation and special habitat mapping, including calculations of acreages of permanent and temporary disturbance by vegetation type;
6. A complete report of all spring wildlife survey efforts on the linears, including desert tortoise surveys, burrowing owl, other special status wildlife, include a full wildlife inventory as is noted in summary (TN 70897);
7. Amended Lake and Streambed Alteration Notification Application (LSAA);
8. Amended 2081 Permit Application (Incidental Take Permit);
9. Bat survey methods write-up covering the work efforts performed during the week of May 6th, and discussed at Staff's May 6, 2013 workshop;
10. Final complete sand transport study;
11. Results of supplemental burrowing owl surveys conducted to support the linear facilities; and
12. Results of all NECO plan required surveys, including Couch's spadefoot toad surveys per the protocol included in Data Response 1-5.
(PSA at 4.2-224-225)

In addition, the desert tortoise surveys are out of compliance with the recommendations of the U.S. Fish and Wildlife Service[6], being well over a year old on the actual project site. The PSA is unclear about the significance of impacts for many of the species primarily due to the missing data, and the Center has concerns about how the level of significance was determined for many species and resources impacts. The following comments address these issues:

II. COMMENTS ON THE JUNE 2013 PSA

A. The Alternatives Analysis Outlined in the PSA Fails to Comply with CEQA

Pursuant to CEQA, the "policy of the state" is that projects with significant environmental impacts may not be approved "if there are feasible alternatives or feasible

[5] To the extent some of these data sets and other information were filed after the PSA was issued, that simply highlights the fact the PSA was incomplete and rushed. Even if some new documents and information are mentioned in these comments, the Center reserves the right to respond to any and all data and information from staff, the applicant, any other party, or member of the public, filed after the PSA was issued.

[6] http://www.fws.gov/ventura/species_information/protocols_guidelines/docs/dt/DT%20Pre-project%20Survey%20Protocol_2010%20Field%20Season.pdf

mitigation measures available which would substantially lessen the significant environmental effects…" Pub. Res. Code § 21002; Guidelines § 15021(a)(2). A Project should not be approved if environmentally superior alternatives exist "even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly." Pub. Res. Code §§ 21002; Guidelines §§ 15021(a)(2), 15126.6. The Project must be rejected if an alternative available for consideration would accomplish "most [not all] of the basic objectives of the project and could avoid or substantially lessen one or more of the significant effects." Guidelines § 15126.6(c).

Accordingly, the environmental review documents must consider a range of alternatives that would achieve the basic objectives of the project while avoiding or substantially lessening significant environmental effects, and it is essential that the "EIR shall include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed project." CEQA Guidelines § 15126.6. Alternative sites must also be considered where relocating the project would substantially lessen the significant impacts of the project. Guidelines Section 15126.6(f)(2). *See Citizens of Goleta Valley v County of Santa Barbara* (1988) 197 Cal.App.3d 1167; *Save Round Valley Alliance v. County of Inyo* (2007) 157 Cal.App.4th 1437 (whether an alternative site may be feasible even where it requires a change in land use designation; to determine feasibility requires detailed analysis of the alternatives; and even if an alternative is less profitable than the project as proposed it may still be a feasible alternative).

Shockingly, no alternatives analysis is provided in the PSA. Nonetheless, the agency is still charged with considering alternatives to avoid and minimize impacts. The three proposed but unanalyzed alternatives are 1) Solar Photovoltaic Alternative with Single-Axis Tracking Technology, 2) Parabolic Trough Alternative, and 3) Reduced Acreage Alternative. These proposed alternatives are inadequate to lawfully fulfill the CEC's duty under CEQA and do not provide the needed range or address avoidance of all significant impacts. For example, the PSA must also look at alternative sites that could avoid significant impacts to resources for which significant impacts would occur—such as sand dunes habitat, avian species, and connectivity across the landscape. Alternatives should also be considered to avoid or minimize even supposedly "mitigable" impacts to species and communities such as ground-water dependent vegetation (by significantly reducing the need to pump more groundwater), sand dunes and other Mojave fringe-toed lizard habitat (by pulling the project completely out of all sand transport zones and providing a buffer area to protect lizard habitat at the margins of the active dunes), or surface hydrology (by pulling the project footprint out of the major washes on site). . The PSA should fully explore other alternatives that would achieve the goals of increasing overall renewable energy production in the state—the basic objective of the project—but without the significant impacts of the proposed project.

The valid project objectives could be accomplished in many different ways while further reducing the impacts (for example utilizing this technology in a different place or utilizing a different technology at this or other sites which could reduce impacts from the

required gas pipeline which is essential infrastructure for this project), or by increasing distributed renewable energy projects throughout the state.

The basic objective of the original PSPP project was to provide 500-MW of renewable power in California. Amending the permit to potentially allow for a change in technology does not relieve the CEC of the obligation to evaluate other less impactful ways of achieving the objective. This goal can be met in a number of ways by feasible alternatives that would avoid impacts to sand dunes and habitat for the Mojave fringe-toed lizard, avian species including migrating birds and resident golden eagle populations, the desert tortoise and intact habitat and connectivity, rare plants, water resources, and waters of the state. While "high solarity" may be necessary for the type of large-scale solar thermal power tower project that the applicant prefers to build, the significant impacts from this technology compared to other solar technologies cannot be ignored. Moreover, if the added costs and energy losses from transmission are fully assessed, which was not analyzed as part of the PSA although new gen-tie and a gas pipeline are essential infrastructure for this project, it may show that it is more cost effective to locate a solar power generating facility closer to load centers such as the cities such as Los Angeles and San Diego which have significant "solarity" even if it is not the very highest amount In evaluating this factor the agency should assess whether re-use of disturbed sites near existing population centers could both meet the project objectives and avoid many of the significant environmental impacts of the project including impacts to rare species, natural communities and water. Given the economic set-backs in the past year, there are more and more large-scale industrial areas that are under-utilized in many parts of southern and central California. These industrial parks, malls and auto rows long ago replaced native habitat, they are connected to the power grid, and are readily accessible to workers for jobs in California. Converting these areas to solar centers is a feasible alternative that would have many societal benefits (including maintaining robust economic zones and avoiding urban blight) and would avoid nearly all of the environmental impacts of siting this project in ecologically functioning habitat in the Mojave Desert that supports many rare and less common species and communities. Similarly, retrofitting older housing stock and businesses in these cities to provide greater efficiency and conservation of energy particularly in peak times could more than off-set the need for additional large-scale remote projects such as the one proposed here and would avoid all of the significant impacts of the proposed project. Accordingly, the PSA should also explore the use of distributed smaller-scale solar as an alternative as well as efficiency upgrades and conservation.

B. Additional Analysis is Needed to Assess All Impacts that Require Avoidance and Minimization

Even if the proposed Project is eventually approved in some form to go forward at the Palen site, which the Center believes it should not be based on the significant impacts and the existence of feasible alternatives, all significant impacts must be avoided to the greatest extent feasible and any remaining impacts must be minimized and mitigated. Some impacts that were not fully analyzed in the PSA that will need to be avoided or minimized and mitigated. While we recognize that the proposed Palen site is within the

East Riverside Solar Energy Zone (SEZ) designated in BLM's Solar Programmatic Environmental Impact Statement (PEIS) and that additional projects may likely be sited within the SEZ, the goal is to still minimize impacts to the environment. In the PEIS, impacts to biological resources in the Riverside East SEZ are considered moderate already and siting multiple projects in this project area could lead to complete collapse of the habitat values in this part of the Chuckwalla Valley due to habitat loss and fragmentation. This would be a significant change to an area which now contains a significant amount of contiguous, high value, intact habitat for the desert tortoise, Mojave fringe-toed lizard and other species and exacerbate potential groundwater overdraft.

The need for additional analysis of the impacts from multiple solar projects that have pending applications in this area and in the Mojave ecosystem is discussed further below in the section on cumulative impacts.

C. Desert Tortoise: Surveys and Analysis of Impacts is Inadequate

The desert tortoise is continuing to decline throughout its range (USFWS 2008) despite being under federal and state Endangered Species Acts protection as threatened for two decades. As referenced above, the on-site desert tortoise surveys were not in compliance with the recommendation of U.S. Fish and Wildlife Service[7], which state that desert tortoise surveys are only valid for a single-year. The original PSPP desert tortoise surveys were completed in 2009 - over four years ago. We have brought this issue up repeatedly in Status Conference statements and yet the PSA still relies on these out-of-date desert tortoise surveys as the basis for analyzing impacts from the new project.

As with the original PSPP, the proposed project is wholly within two Wildlife Habitat Management Area (WHMAs) designated by BLM's Northern and Eastern Colorado Plan. The Palen-Ford WHMA was established for the conservation of special status desert species and the other WHMA, the Desert Tortoise Connectivity WHMA was established specifically for desert tortoise connectivity. While the PSA recognizes that the proposed project is wholly within both of these WHMAs regarding connectivity issues only (at pg. 4.2-125), the PSA fails to address the primary issue that the proposed project will impact the habitat for the special status species in both of the WHMAs. Due to this failure to recognize the impact, the PSA subsequently fails to analyze the impacts to the existing habitat within the WHMAs. Recognizing that the proposed project is within the range of the desert tortoise, the PSA proposes to mitigate at an inadequate 1:1 acquisition: impact ratio, however it fails to evaluate impacts in the context of not one, but two previously designated WHMAs. At a minimum, a 5:1 mitigation of acquisition: impact is required to reasonably off-set impacts to habitat and connectivity WHMAs not only for desert tortoise but for other special status species.

[7] http://www.fws.gov/ventura/species_information/protocols_guidelines/docs/dt/DT%20Pre-project%20Survey%20Protocol_2010%20Field%20Season.pdf

The PSA completely ignores the corridors that are required to be established under the BLM's Solar PEIS, which recognizes the uniqueness of the proposed project site in the SEZ. The Solar PEIS requires that:

> "Within the SEZ, two north–south wildlife corridors of sufficient width (a minimum width of 1.3 mi [2 km], but wider if determined to be necessary through future site-specific studies) should be identified by the BLM in coordination with the USFWS and CDFG. These corridors should be identified as non-development areas within the SEZ on the basis of modeling data (Penrod et al. 2012) and subsequent field verification of permeability for wildlife." (SPEIS at 9.4-50).

While the BLM has not yet designated these wildlife corridors, the Penrod et al. 2012 report identifies the proposed project site as a key connectivity area between the Palen Mountains north of the proposed project and the Desert Wildlife Management Area to the south of the proposed project[8]. Clearly the wildlife values of the proposed project site are substantial both for habitat and connectivity, yet the PSA fails to adequately analyze the impacts of the project on connectivity or other habitat values and also fails to propose appropriate avoidance, minimization and mitigation. Mitigation for impacts to the WHMAs should be 5:1 at a minimum because 1) the desert tortoise population continues to decline[9], 2) more desert tortoise and Mojave fringe-toed lizard habitat is being developed, which is a net loss to the species[10], and 3) fragmentation of the habitat within WHMAs and adjacent areas, including this proposed project, continues. Additionally, there is no reason provided that mitigation here should not be similar to that at other project sites, for example, the Final Staff Assessment (FSA) for the Hidden Hills Solar Electric Generating System (HHSEGS) required a 3:1 desert tortoise acquisition ratio for creosote bush scrub (HHSEGS FSA at 4.2-3)[11], and that proposed project site was not within a WHMA or a recognized wildlife connectivity corridor. Therefore, a 5:1 acquisition:impact ratio for the proposed project would be aligned with more recent desert tortoise and creosote brush scrub community mitigation requirements.

While the old 2009 surveys which were not conducted according to the current FWS protocol[12] and found few desert tortoise on site, the Center is concerned that those surveys are out of date. Further, even if relatively few tortoises are found on the proposed site, the Center is concerned that the PSA proposes to use translocation as a strategy for desert tortoise rather than avoidance. The Scientific Advisory Committee (SAC) of the U.S. Fish and Wildlife Service's Desert Tortoise Recovery Office has concluded that:

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[8] http://www.scwildlands.org/reports/ALinkageNetworkForTheCaliforniaDeserts.pdf

[9] http://www.fws.gov/nevada/desert_tortoise/dt_reports.html

[10] Moilenen et al 2009; Norton 2009

[11] http://www.energy.ca.gov/sitingcases/hiddenhills/documents/fsa/03_Biological_Resources_pg_146-595.pdf

[12] http://www.fws.gov/ventura/species_information/protocols_guidelines/docs/dt/DT%20Pre-project%20Survey%20Protocol_2010%20Field%20Season.pdf

> "translocation is fraught with long-term uncertainties, notwithstanding recent research showing short-term successes, and should not be considered lightly as a management option. When considered, translocation should be part of a strategic *population augmentation program*, targeted toward depleted populations in areas containing "good" habitat. [emphasis added]. The SAC recognizes that quantitative measures of habitat quality relative to desert tortoise demographics or population status currently do not exist, and a specific measure of "depleted" (e.g., ratio of dead to live tortoises in surveys of the potential translocation area) was not identified. Augmentations may also be useful to increase less depleted populations if the goal is to obtain a better demographic structure for long-term population persistence. Therefore, any translocations should be accompanied by specific monitoring or research to study the effectiveness or success of the translocation relative to changes in land use, management, or environmental condition."[13]

Translocation should be used as a tool to *augment populations within depleted recovery units*, not as a mitigation strategy to allow for development in desert tortoise habitat. The PSA fails to present information on depleted populations in Colorado Desert Recovery Unit, or address whether moving the desert tortoise off the proposed project site will actually augment the population in another area.

As the CEC is well aware, the project proponent *significantly* underestimated the number of desert tortoise on the Ivanpah Solar Electric Generating System (ISEGS) site, despite expert testimony and filings from intervenors including the Center that provided compelling evidence that the there would be many more desert tortoise on the project site, based on habitat and survey methodology. Unfortunately the intervenors were correct. So many more desert tortoise were found on the project site that the "take' limit for desert tortoise was quickly exceeded and the project was forced to cease construction via a stop-work order while subsequent reconsultation with trustee state and federal wildlife agencies was implemented. Based on this lesson from past inadequate environmental review by the CEC, the proposed project should be held to much higher standards of survey data, including updated surveys as per U.S. Fish and Wildlife Service's recommendations, and analysis or an alternative developed and selected that is out of desert tortoise habitat to preclude impacts to this state and federally threatened species. Selecting a better site for project implementation that avoids, and minimizes the impacts to the environment is required under CEQA.

If translocation is approved as part of the mitigation or minimization measures for the proposed project, the agency should carefully review the Revised Desert Tortoise Recovery Plan (USFWS 2011) and require incorporation of the U.S. Fish and Wildlife Service's most recent (2011) guidance on desert tortoise translocation[14] instead of relying on the 2010 earlier version. The outdated Draft Palen Solar Power Project Desert

[13] http://www.fws.gov/nevada/desert_tortoise/documents/sac/20090313_SAC_meeting_summary.pdf

[14] http://www.deserttortoise.org/workshops/20111117b.USFWS%20DT%20Transocation%20Guidance%20v2.pdf

Tortoise Relocation/Translocation Plan is inadequate for a number of reasons: 1) the desert tortoise surveys are out of date and not in compliance with U.S. Fish and Wildlife Service recommendations (see above discussion); 2) it does not include guidance from the Revised Desert Tortoise Recovery Plan which was published in 2011 after the draft relocation/translocation plan; 3) it does not include the most recent guidance on desert tortoise relocation/translocation[15]; 4) the PSA does not provide adequate information on the local desert tortoise population, similar to that other projects have provided, including analyzing home range size, distribution, habitat use/selection, disease prevalence (*Mycoplasma agassizii* and *M. testudenium*), and contaminant exposure of tortoises within and around the proposed project site[16] as was done for the proposed Stateline project in California and the proposed Silver State South project in Nevada. Additionally any translocation plan should incorporate new information on current translocation implementation successes (if there are any). Information on desert tortoise home ranges, translocation landscape carrying capacity, and other ecological factors need to be included in a revised or supplemental PSA, so that the public and decision makers can more accurately review and comment on a robust analysis of the likely impacts from the proposed project

We also request that the following recommendations that originate with the Desert Tortoise Recovery Plan are incorporated into any translocation plan:

- Provide monitoring to confirm that desert tortoise "establish home ranges and integrate into any existing social structure". Note is taken that no translocation studies have been implemented long enough to confirm integration, so moving forward with yet another translocation without the data required to confirm actual integration of the translocated tortoises into the existing population renders the translocation effort experimental. The experimental nature of the action then requires at a minimum a long-term commitment to monitoring and potential adaptive management to ensure that these animals and the unique genotypes that they represent continue to survive. The Conditions of Certification need to include long-term monitoring of any translocated desert tortoise.

- Temporary fencing should be included in the relocation areas, due to the well documented fact that desert tortoises will try to return to their home range. Additionally, provisions to deal with the fact that desert tortoises will end up along the new tortoise proof fences of the project site, trying to get back to their home territory, should be included because this behavior leaves them vulnerable to predation.

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[15] Ibid

[16] http://www.blm.gov/pgdata/etc/medialib/blm/ca/pdf/needles/lands_solar.Par.4318.File.dat/Stateline%20Translocation%20Plan.pdf; http://www.blm.gov/pgdata/etc/medialib/blm/nv/field_offices/las_vegas_field_office/energy/silver_state_south/chapter_3.Par.83355.File.dat/DSEIS%20for%20Silver%20State%20Solar%20Project-Chapter%203.pdf

- Determine the translocation site's carrying capacity. In light of global climate change and the predicted warming of the desert, translocation zones should only be located at *higher* elevations, not lower areas of the Palen-McCoy valley.

- At least a two-year study should be undertaken on the host population prior to translocation.

Because of the lack of recent data in the PSA in accordance with USFWS recommendations, the lack of due diligence in collecting data on home range size, distribution, habitat use/selection, disease prevalence (*M. agassizii* and *M. testudenium*), and contaminant exposure of tortoises within and around the proposed project site, and the lack of analysis of the impacts of the proposed siting the project midst the connectivity WHMA established for desert tortoise, the PSA fails to provide the public and decision makers with adequate information in order to evaluate the impacts to desert tortoise and its habitat.

D. Mojave Fringe-toed lizard

The PSA states that direct impacts for the proposed project on the sand transport corridor will be 1,129 acres (at pg. 4.2-128), despite not having the final sand transport study completed. Because of the incomplete data set and absence of analysis of the actual proposed project impacts, comprehensive comments on the PSA are impossible. As an example of the moving target created by the irrational CEC process, a new staff report, "Geomorphic Assessment of Sand Transport for the Modified Project", was filed on June 25, at the same time as workshops were proceeding on many related issues. This new staff report shows that the impacts to sand transport are approximately 1,581 acres including both direct and indirect affects-- significantly greater than the PSA estimate or the estimate for the previously proposed project at this site (Geomorphic Assessment at 14-15). The Center reserves the right to provide additional comments on this report after it is included and analyzed in a fully adequate environmental document. However, even as an initial matter, while the sand transport report appears to provide better analysis of impacts to sand movement and dunes, staff has not even begun to provide sufficient data or analysis to explain how these impacts to sand dunes will impact Mojave fringe-toed lizard individuals and populations both on and off the proposed project site.

Further, the PSA fails to adequately address impacts to Mojave fringe-toed lizards from roads and motorized vehicles used for construction and maintenance (including mirror washing) for the proposed project. On the much smaller Colorado River Substation project which was built in Mojave fringe-toed lizard habitat, excessive ongoing mortality is documented on access roads[17]. Over 90 days of monitoring in the fall of 2012 and spring of 2013 during construction alone, ninety Mojave fringe-toed lizard mortalities were documented, on a relatively short expanse of access road (4.6 miles) and 304 were moved off the road. The results of that monitoring shows 23% mortality for the detected Mojave fringe-toed lizards and represents a significant impact

[17] Helix 2013

to the local population. The mortalities are particularly concerning because avoidance measures in place included a speed limit of 15 mph, required vehicle escorts, and Worker Environmental Awareness Program (WEAP) training—they did not however include fencing to exclude lizards from the road area. While the PSA requires WEAP training, it only requires a speed limit of 25 mph (at pg. 4.2-123), ten miles per hour faster than the Colorado River substation. The PSA does not require vehicle escorts. Furthermore, we could not locate in the PSA the actual number of miles of roads (other than the 1.8 miles of gas pipeline road) associated with the proposed project, although pg. 4.9-9 of the PSA does describe a variety of types of roads that are proposed, it just fails to include the actual miles of roads and does not include the number of miles traveled by motorized vehicles as part of the mirror washing. Based on the fact that the proposed project 1) is in Mojave fringe-toed lizard habitat, 2) appears to propose hundreds of miles of roads associated with the solar fields alone and much of it in Mojave fringe-toed lizard habitat, 3) has only a 25 mph speed limit, and 4) does not propose to require appropriate fencing to exclude lizards from roads during construction or operations, it appears that a significant unexamined impact to the Mojave fringe-toed lizard population locally may occur. The proposed project is a significant change from the original permitted solar-trough Palen project, in several respects, most importantly because it infringes further into the sand transport areas therefore greatly increasing the potential impacts during construction and on-going mortality impact to Mojave fringe-toed lizard. Therefore, the CEC must analyze the impacts to Mojave fringe-toed lizard not only from habitat loss on site, but also from direct mortality from the on and off-site road network associated with the proposed project in light of these recent data, and impacts due to changes in sand transport and habitat off site as well.

E. Desert Kit Fox

While the PSA recognizes that the desert kit fox is a protected animal as a furbearing mammal under California Code of Regulations Title 14 Section 460 (PSA at 4.2-15) and recognizes that desert kit fox occurs on site (PSA at 4.2-66), no surveys were done to quantify the density of desert kit fox that will be displaced and "taken" by the proposed project. As the CEC is well aware, the first ever documentation of a deadly outbreak of canine distemper was confirmed in late 2011 in desert kit fox, when dead kit foxes found on and adjacent to the Genesis industrial solar project during construction and were necropsied by state veterinarians. The Genesis project site is located only 10 miles from the proposed project site (PSA at 4.2-139).

Kit foxes have great fidelity to their natal burrows and, as documented on the Genesis and Ivanpah Solar Electric Generating System (ISEGS) project sites and elsewhere, are not easily evicted from their burrows and home ranges through "passive relocation" or "hazing". If the proposed project amendment moves forward to permitting, which the Center opposes, the CEC should require that "take" permits be acquired for desert kit fox, as the California Department of Fish and Game did on Genesis, to allow for accurate tracking and monitoring of desert kit foxes to determine the efficacy of "passive relocation". Adequate future tracking of any "passively relocated" kit foxes will enable monitoring of the ultimate outcome of the passive

relocation/hazing activities, and should allow for identification of distemper outbreaks earlier on, where the disease may be more easily controlled.

As the CEC is also well aware, despite the efforts of state and federal biologists, who tried to prevent the distemper outbreak from spreading, their efforts have not been successful, and so far the kit fox distemper epidemic has spread at least over eleven miles south of the Genesis project site. Hope has dimmed that the epidemic can now be contained. Additional disruption of native populations of desert kit foxes from hazing them off this proposed project site will result in additional displaced animals wandering the desert and potentially being vectors for spreading the disease farther through the population. In addition, the impacts to this species would be cumulative to the impacts from the Genesis, Desert Sunlight and Desert Harvest projects in the same valley, and the McCoy project in the next adjacent valley. All of these impacts should have been considered together in the PSA but were not.

The state wildlife veterinarian for the California Department of Fish and Game isn't certain the distemper outbreak is connected to the construction activities, but has concluded that habitat disturbance causes stress, and when animals succumb to stress they become more susceptible to disease[18].

The PSA fails to quantify how many kit fox territories overlap the proposed project site, analyze the impacts from the proposed project or provide any avoidance, minimization or mitigation measures regarding this increasingly rare and declining species. Instead it defers this process to the development of a future American Badger and Desert Kit Fox Mitigation and Monitoring Plan The most recent Bureau of Land Management Final Environmental Impact Statement for the McCoy solar project includes a much more comprehensive evaluation of desert kit fox occupancy on the project site and requires significantly greater avoidance, minimization and mitigation measures[19] than the PSA. Measures include but are not limited to:

- Baseline desert kit fox census *and population health survey*, by characterizing the demography (e.g., size, structure, and distribution) of the kit fox population on the site and receiving areas, and a testing component in which researchers trap and test a representative subsample of the population for canine distemper, and generally describe animal health on the site and receiving areas. These data should be included in the PSA and used as a basis for impact evaluation, including developing avoidance and minimization measures;

- Kit fox management plan that incorporates baseline desert kit fox census and *health survey findings* into a cohesive management strategy that minimizes disease risk to kit fox populations; provides a program for tagging, radio-tracking and monitoring of a subset of displaced kit foxes during the construction phase to

[18] http://articles.latimes.com/2012/apr/18/local/la-me-0418-foxes-distemper-20120418

[19] http://www.blm.gov/pgdata/etc/medialib/blm/ca/pdf/palmsprings/Solar.Par.89379.File.dat/Vol1_McCoy%20PA-FEIS.pdf

understand how displacement affects regional kit fox populations; specifically identifies preconstruction survey methods for kit foxes (and large carnivores e.g., badgers) in the Project area; describes preconstruction and construction-phase relocation methods from the site, including the possibility for passive and active relocation from the site (and outlines identified CDFW permit and MOU requirements for active relocation); coordinates survey findings prior to and during construction to meet the information needs of wildlife health officials in monitoring the health of kit fox populations; and includes contingency measures that would be performed if canine distemper were documented in the Project area or in potential relocation areas, and measures to address potential kit fox re-occupancy of the site;

- Implementation of the desert kit fox management plan that includes preconstruction surveys, avoidance of active den complexes and implementation of measures to monitor, minimize and contain any canine distemper outbreaks.

The CEC should adopt similar more stringent strategies for evaluating desert kit fox occupancy and health, including first avoiding impacting den complexes by proper project siting and impact minimization.

F. Bighorn Sheep: Analysis of Impacts is Incomplete

Important native (i.e. not re-introduced) populations of desert bighorn sheep occur in mountain ranges[20] adjacent to the proposed project site in the Palen mountains. Bighorn are a large and wide-ranging species that require connectivity across large landscapes in order to assure persistence. Existing anthropogenic barriers have already eliminated gene flow between certain populations[21]. Elimination of sheep connectivity by the proposed project could lead to further isolation and inbreeding issues. Additional information on bighorn sheep movement corridors and the impact of development on them needs to be included in a revised staff assessment. Avoidance of the connectivity areas needs to be assured, or minimization and effective mitigation if the proposed project is not located to avoid all impacts these important linkages.

To date, no studies have been done on the effects that miles of mirrors, glare, and the bright glow at the top of the towers may have on bighorn sheep movement, use of low elevation seasonal forage, or historical lambing areas. Data indicate that human caused disturbance negatively affects species fitness and population dynamics via the energetic and lost opportunity costs of risk avoidance[22]. More information about the potential impact from the installation and operation of mirrors and towers on desert bighorn needs to be included.

Desert bighorn rely on springs and seeps, especially during the hot dry summer months for their survival in the Palen Mountains adjacent to the proposed project site and

[20] Epps et al. 2004
[21] Epps et al. 2005
[22] Frid and Dill 2002

while moving across the valley floor. While the goal of the groundwater mitigation and monitoring requirements is to minimize impacts to the groundwater, there is no guarantee that impacts from groundwater pumping for this project and others in the same area will not directly, indirectly or cumulatively impact the springs and seeps that the desert bighorn rely upon. Springs and seeps in the adjacent mountains area and the impact of groundwater pumping on them are not discussed in the PSA. The proposed monitoring plan will only identify water drawdown after it has occurred, and this could be deadly for bighorn and other desert species that depend on the springs and seeps for survival. For that reason, the CEC should consider alternatives that avoid the use of groundwater altogether including PV projects and/or the use of only recycled water from urban uses nearby.

G. Rare Plants: Data and Analysis Incomplete

As noted in the PSA, data is lacking on the spring 2013 surveys for rare plants and the summer/fall rare plant surveys are not yet implemented. The incomplete data shows that the site supports at least three rare plant species (PSA at 4.2-227) based on the reported survey results. While the lack of survey data and analysis makes it impossible to determine the impacts to the species, clearly the proposed project site is poorly sited because of the number of rare plant species that occur on the site. Avoidance is the most preferred method to eliminate impacts to rare plants. Even with the surveys that have been performed, in sum total only two years of surveys for rare plants has occurred on this project site. Based on the vagaries of desert rainfall, and the fact that 2012/3 has been an exceptionally dry year, it is not surprising that only three rare plant species and a fourth new-to-science species have been found on the proposed project site. Large project sites on relatively undisturbed desert habitat such as the proposed project site normally require multiple years of surveys including years with greater-than-normal rainfall in order to identify most rare plant species that occur on the sites. Clearly this has not happened on the proposed project site because of the rushed schedule.

If avoidance is not possible, then securing additional sites for conservation in perpetuity will be necessary. Mechanisms must be put in place to secure all areas acquired for mitigation from future impacts such as conservation easements in perpetuity (see discussion below about durability of mitigation). While Bio-19 identifies varying mitigation ratios for impacts to rare plants based on their rarity, it is unclear if indeed this mitigation measure is actually feasible – that there are lands to acquire that support the rare plants including those new to science. The CEC needs to fully analyze this issue in a comprehensive environmental review document.

While transplantation of rare plants has been documented to be mostly unsuccessful[23], if relocation is to be part of the mitigation effort, then a clear and concise relocation plan should be developed and included as supporting documentation in the Final Staff Assessment for public review. In many earlier CEC processes, these critical plans are proposed to be developed in the future, with no public input or review. We

[23] Feidler 1991

believe these and other mitigation and monitoring plans should be included as part of the environmental review documents and that their absence is a violation of CEQA. If plants are to be moved, requirements for interim monitoring during establishment (including triggers for adaptive management to meet the needs of plant survival) need to be put in place. Long-term monitoring for survivorship and successful reproduction and establishment also needs to be included as part of the mitigation requirements if relocation is a chosen strategy.

To assure conservation of the rare plants in addition to avoidance measures and minimization and mitigation discussed above, seed collection and duration into a seed bank should be required, to preclude potential genetic loss of the species if avoidance, minimization and mitigation measures should fail.

H. Avian Species

The power tower technology, which is one of the primary changes in the repermitting proposal for the Palen site, is documented to impact avian species and insects[24]. Many of the "attractants" found at the Solar One facility including agriculture and water features are also present close to the proposed project site, including active agriculture directly to the west of the proposed project. In addition, data sets from the Ivanpah project which is not completely finished with construction or yet in full operation but still in its testing phase, recorded five mortalities in May 2013 alone[25] and five more mortalities in June 2013[26], as well as avian injuries. While the PSA recognizes that avian mortality will occur from the proposed project (at pg. 4.2-143 and 227), it fails to quantify even a range of mortality based on the mortality and injury data documented on the Solar One site and the ongoing mortality documented on the Ivanpah project (which uses the same technology as the proposed project but with towers that are 450' tall vs. the proposed 750' tall towers here), the Genesis[27] and Desert Sunlight[28] sites (which are located near the proposed project site). The PSA also fails to provide sufficient data and information regarding migrating birds in this area or resident birds and therefore also fails to provide sufficient analysis of likely impacts. Because avian mortality could be a significant impact, we recommend that additional studies on the avian species that use or pass over the site be implemented immediately and that no new or revised permit for the proposed project be issued until at least a full year of additional data on avian mortalities during operations at the Ivanpah solar project site is collected and reported.

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[24] McCrary et al. 1986, Wagner et al 1983

[25] http://www.energy.ca.gov/sitingcases/ivanpah/compliance/submittals/MCR_2013/MCR_32_May_2013.pdf

[26] http://www.energy.ca.gov/sitingcases/ivanpah/compliance/submittals/MCR_2013/MCR_33_June_2013.pdf

[27] http://www.energy.ca.gov/sitingcases/genesis_solar/compliance/submittals/

[28] http://www.firstsolar.com/en/Projects/Desert-Sunlight-Solar-Farm

1. Yuma Clapper Rail

The PSA mentions the mortality of the federally endangered and state threatened and fully protected Yuma clapper rail (*Rallus longirostris yumanensis*) (at pg. 4.2-146) but fails to discuss potential impacts of the proposed project to this highly imperiled species. One Yuma clapper rail mortality was tragically documented in May 2013 at the nearby Desert Sunlight Solar Project[29] in addition to the 50 other bird mortalities documented in the PSA at that same site (at pg.4.2-146). Even the potential to take one Yuma clapper rail is significant and if the project is to go forward at all take permitting must be provided under CESA as well as consultation completed under the federal ESA. Further, because the project may take this species which is fully protected under California law and no NCCP has been approved that would include this impact, the proposed project's impacts are likely per se unlawful and unmitigable.

2. Western Burrowing Owl

The information in the PSA regarding the status of the burrowing owl on the project site is confusing. The PSA does not clearly identify how many burrowing owl territories are located in the proposed project area. As with the kit fox, desert tortoise and other species, a plan is to be produced for mitigation and monitoring of burrowing owls, but that plan is not provided in the PSA. Not all of the data on burrowing owl is available (PSA at pg. 4.2-10) specifically on the "linears". In addition, the most recent surveys done for the PSPP were done in 2009 and are outdated now. Those earlier surveys also are not in compliance with the most 2012 CDFW guidance[30], so new burrowing owl surveys should be initiated so that the eventual environmental analysis is based on recent survey data.

The remaining stronghold for burrowing owls in California – the Imperial Valley – has documented decline of 27% in the past[31], resulting in an even more dire state for burrowing owls in California. Because burrowing owls are in decline throughout California, and now their "stronghold" is documented to be declining severely, the burrowing owls on this proposed project site (and on other renewable energy projects) become even more important to species conservation efforts. While the PSA identifies 78 acres of habitat acquisition specifically for burrowing owls, this amount of compensation land is now out of sync with more recent CEC determinations on burrowing owl habitat compensation[32].

The current California Fish and Game Code 3503.3 prohibits active relocation of burrowing owls, but it does not prohibit monitoring of passively relocated owls to determine the ultimate fate of the burrowing owls. No scientific evidence exists

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[29] http://www.kcet.org/news/rewire/solar/photovoltaic-pv/endangered-bird-dead-at-desert-solar-facility.html

[30] http://www.dfg.ca.gov/wildlife/nongame/docs/BUOWStaffReport.pdf

[31] Manning 2009

[32] http://www.energy.ca.gov/sitingcases/hiddenhills/documents/fsa/03_Biological_Resources_pg_146-595.pdf

regarding the success of passively relocating burrowing owls for their long-term survival. While the Avian Enhancement And Conservation Plan components don't explicitly require passively relocating burrowing owls, it is conceivable that one of the plans (Ex. Bird and Bat Conservation Plan) will include relocation. Long-term monitoring for the life of the project at a minimum, should be included and implemented for relocated burrowing owls.

Mean burrowing owl foraging territories are 242 hectares in size, although mean foraging territories for owl in heavily cultivated areas is often far lower at only 35 hectares[33]. The mitigation acquisition must be based on the recent number of pairs multiplied by the mean burrowing owl foraging territory overall unless specific data is collected on the burrowing owls on site and their actual foraging territories. Even this type of calculation may underestimate the actual amount of land needed to sustain a pair of burrowing owls in this arid part of their range. Lastly, because the carrying capacity is tied to habitat quality, language needs to be included that mitigation lands that are acquired for burrowing owl impacts be native habitat on undisturbed lands that are protected from future development, not cultivated lands, which are subject to the whims of land use changes, because the long-term persistence of burrowing owls lie in their ability to utilize natural landscapes, not human-created ones.

The CEC also should implement CDFW's guidance requirement that "Habitat should not be altered or destroyed, and burrowing owls should not be excluded from burrows, until mitigation lands have been legally secured, are managed for the benefit of burrowing owls according to Department-approved management, monitoring and reporting plans, and the endowment or other long-term funding mechanism is in place or security is provided until these measures are completed".[34](at pg.12)

3. *Golden Eagles*

The PSA recognizes that the proposed project "would reduce the availability of eagle foraging habitat" (at 4.2-135) but fails to identify that the whole 3,794 acre site would be unavailable to eagles, which most certainly would impact reproductive capacity, both locally and cumulatively.

Scientific literature on this subject is clear - the presence of humans detected by a raptor in its nesting or hunting habitat can be a significant habitat-altering disturbance even if the human is far from an active nest[35]. Regardless of distance, a straight-line view of disturbance affects raptors, and an effective approach to mitigate impacts of disturbance for golden eagles involves calculation of viewsheds using a three-dimensional GIS tool and development of buffers based on the modeling[36]. Golden eagles have also been documented to avoid industrialized areas that are developed in their

[33] http://www.fws.gov/mountain-prairie/species/birds/wbo/Western%20Burrowing%20Owlrev73003a.pdf
[34] http://www.dfg.ca.gov/wildlife/nongame/docs/BUOWStaffReport.pdf
[35] Richardson and Miller 1997
[36] Camp et al. 1997; Richardson and Miller 1997

territory.[37] The PSA's determination that land acquisition would mitigate for the impact of 3,794 acres of foraging habitat is unsubstantiated. Indeed the project proposes a net loss of foraging habitat that simple land acquisition can not replace.[38]

Furthermore, information on the impacts to avian species from the power tower technology is well documented[39]. While the PSA analyzes some of the potential impacts to golden eagles from the solar flux and towers the lack of data on the current use territories in the proposed project area, makes a comprehensive impact analysis impossible. Even the potential to take one golden eagle through loss of forage and/or by burning or singing in the solar flux field is significant and if the project is to go forward at all take permitting must be provided under the federal BGEPA. Further, because the project may take golden eagle which is a fully protected species under California law, and no NCCP has been approved that would include this impact, the proposed project's impacts are likely per se unlawful and unmitigable.

With regards to proposed mitigation measure Bio-16a, we support avoiding and minimizing mortality of avian species from powerlines, however, if powerlines are causing mortality of species, especially golden eagles and other raptors, the transmission line operator is responsible for avoidance and minimization measures, not a new development project. Therefore this mitigation measure is inappropriate.

Based on the severity of the incomplete impacts identified in the PSA alone, the CEC must consider other alternatives that avoid the impacts to the fully protected golden eagle including off-site alternatives, distributed solar alternatives, and the no-action alternative-- a denying the permit amendment.

4. Special Status Bats

The post-PSA submittal on bat habitat on the proposed project site indicates that four species of bats were located on site during just four nights of monitoring and an additional six species are likely to use the habitat during at least a portion of the year. Additional surveys would further aid in identifying the species present.

The CEC's future consolidated environmental review needs to include a thorough analysis of the avoidance and minimization opportunities to protect bats and a rigorous impact and mitigation analysis.

5. Migratory Birds

Both Desert Sunlight and Genesis have reported migratory bird entanglements with the netting of on-site ponds, often resulting in mortality. The PSA fails to analyze this impact and these data sets should be brought into the analysis of project impacts.

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[37] Walker et al. 2005

[38] Moilanen et al. 2008; Norton 2008

[39] McCrary et al. 1986

I. Groundwater Dependent Vegetation

Based on current proposed monitoring scheme, impacts to this rare plant community and vital wildlife resource will be significant from the proposed project. Between the time the original PSPP project was permitted and now, a changed circumstance has occurred that significantly impacts this same groundwater resource – the Eagle Mountain Pumped Storage Project received approvals from the State Water Quality Control Board (SWQCB)[40]. In the article attached regarding the approval, private landowners directly adjacent to the under construction Desert Sunlight Photovoltaic Project noted that their well has already dropped one-foot from construction related activities, and the SWQCB estimated that wells in the area would drop an additional 9-60 feet from the Eagle Mountain project. The additional withdrawals from the proposed project would further deplete the aquifer, and the proposed measures do not resolve this significant impact. Moreover, the language in the proposed mitigation measures are too weak because they would require nearly impossible to obtain proof that specific water drawdown was unequivocally caused by the proposed project. Because of all of the groundwater pumping that will likely take place in the Chuckwalla Valley, it will be virtually impossible to tell which project is causing the overdraft. As a result, none of the measures proposed to safeguard the groundwater dependent vegetation would be triggered and this significant impact could go unmitigated. Instead, the most likely scenario is that the groundwater dependent vegetation will die off, blame will be pointed from one project to the other, and this crucial wildlife resource will be gone without appropriate mitigation. This is an unacceptable scenario.

The PSA states that the proposed project will use 201 AFY of water. This is a reduction from the PSPP, which was never built and which was permitted before the other new uses of groundwater in the area were evaluated, but 201 AFY is also more than twice as much as was permitted for the Ivanpah project, which was permitted by the CEC to use 100 AFY of water (ISEGS Commission's Final Decision at pg. 4)[41]

The CEC must go back and fully evaluate ways to avoid impacts to groundwater from this proposed project—such as off-site alternatives, PV alternatives, or utilizing recycled water. The cumulative impacts to the groundwater-dependent vegetation also needs to be updated based on the SWQCB's decision and recirculated in a supplemental SA.

J. Mitigation, Nesting and Acquisition Ownership

Given the incomplete analysis of impacts and the lack of an alternatives analysis, it is far too soon in the process for the CEC to determine what mitigation is needed. Nonetheless, the Center provides these general comments on mitigation that may be needed. Mitigation acquisitions must mitigate for the impacts of the project. While the

[40] http://www.pe.com/local-news/local-news-headlines/20130720-eagle-mountain-hydroelectric-project-gets-state-approval.ece

[41] http://www.energy.ca.gov/2010publications/CEC-800-2010-004/CEC-800-2010-004-CMF.PDF

project proponent is currently taking advantage of the mitigation opportunities established under SBX8 34 for the impacts to desert tortoise from the Ivanpah project, we note that the proposed mitigation under SBX8 34 does not actually provide meaningful mitigation for the impacts at that project site because the lands acquired by CDFW are outside of the northeastern recovery unit for the desert tortoise, which is where the impacts from the Ivanpah project occurred. The proposed project occurs in the Colorado Desert Recovery unit, and therefore any and all mitigation for desert tortoise impacts and impacts to habitat connectivity must occur within this desert tortoise recovery unit and as close to the site as possible. Similarly, impacts to the Mojave fringe-toed lizard and sand dunes habitats that are not avoided must be mitigated in this area to support local and regional populations of this imperiled species.

Any "nesting" of mitigation acquisitions must assure that all impacted species are actually mitigated by the acquisition property. Therefore species presence at densities found on the proposed project site or greater must be documented through monitoring of the potential mitigation site prior to acquisition in order to adequately fulfill the mitigation requirement.

Mitigation acquisitions must be managed by a land management entity that can assure conservation of those lands in perpetuity. For example, the Bureau of Land Management can not assure conservation of lands donated to it, based on its multiple use mandate. Therefore, the SSA should clearly lay out a mitigation strategy to assure land ownership/management that will result in conservation of all mitigation acquisitions in perpetuity.

K. Missing Plans

Numerous plans are relied upon in the PSA to provide adequate avoidance, minimization and mitigation of biological resources. However, these plans are not available for public review, which makes it impossible for the public and decision makers to actually evaluate if these plans do what the PSA intends them to do. Examples of missing plans include:

- Updated and closer to final Desert Tortoise Translocation Plan,
- Updated Raven Management Plan,
- Closure, Conceptual Restoration Plan
- Updated American Badger and Kit Fox Management Plan
- Burrowing Owl Mitigation and Monitoring Plan,
- Weed Management Plan,
- Avian Enhancement and Conservation Plan which includes:
    - Avian and Bat Protection Plan
    - Bird and Bat Conservation Strategy
    - Eagle Protection Plan
- Drainage, Erosion, and Sedimentation Control Plan
- Special-Status Plant Mitigation Plan
- Habitat Enhancement/Restoration Plan

- Management Plan that reflects site-specific enhancement measures for the Mojave fringe-toed lizard habitat on the acquired compensation lands
- Management Plan that reflects site-specific enhancement measures for the drainages on the acquired compensation lands.
- Decommissioning and Reclamation Plan
- Groundwater-Dependent Vegetation Monitoring Plan

These fourteen plans should be made available to the public in as part of a comprehensive environmental review document for review and comment before the proposed project is considered for approval by the CEC.

L. Soils and Water Resources

The PSA indicates that up to 201 AFY of water will be used yearly by the proposed project site during normal operations (PSA at 4.9-13), with construction water use as high as 400 AFY (PSA at 4.9-11). As stated above, the annual water use is over twice as much as the Ivanpah project. Similarly, the Hidden Hills project which was nearly identical to the proposed project here estimated water need was only 140 AFY for non-construction operation and 288 AFY during construction (HHSEGS FSA at 4.14-10). It is unclear why there are such substantial discrepancies particularly between the Hidden Hills and Palen site proposed facilities. Although no water will leave the site, additional information on the effects of groundwater pumping on nearby seeps and springs in the adjacent Wilderness and Joshua Tree National Park is lacking.

Additionally, because of the substantial evaporation rate at the project site, the environmental review should provide data on how much pumped ground water will actually be returned to the groundwater basin versus that lost to evaporation. Again, alternatives must be considered that would avoid this significant impact including alternative siting, PV projects on-site, distributed PV, and the use of only recycled water.

Waters of the State

The PSA indicates that the proposed project has an increased impact on the ephemeral streams from the earlier permitted PSPP – an increase from 312 acres to 359 acres (16%) (PSA at 4.4-2), yet the Waters of the State determination is still relying upon the 2009 determination of only 312 acres (at 4.4-28). These two determinations are at odds with each other in the PSA, again showing the rushed and incomplete nature of the document. In this arid part of the state, this impact is significant. Again we urge the CEC to look at avoidance and minimization of the impact through alternative siting or a reduced project footprint that would avoid all waters of the state and particularly the large central wash.

As with the other sensitive resources, securing additional sites for conservation in perpetuity will be necessary, and may not always be fully accomplished in conjunction with sensitive species mitigations. Because the proposed project is relying on groundwater pumping as its water source, it is crucial to replicate the existing surface

hydrology to enable groundwater replenishment, particularly with regards to the slow pace of groundwater recharge in the desert.

Cryptobiotic Soils

Cryptobiotic soils are an essential component in arid ecosystems to prevent desertification and perform a myriad of ecological functions including soil stability, porosity and water retention[42]. They stabilize soils and prevent erosion, decreasing fugitive dust[43]. Cryptobiotic soils are easily disturbed and slow to regenerate[44]. The PSA states that "the soils and biotic soil crusts were compacted during the military training exercises during World War II" (PSA at 4.2-176) but fails to survey for any existing locations and extents of the cryptobiotic soils on the proposed project site and provide an actual analysis of the impacts of the project on these important soil organisms. Disturbance of these types of soil crusts will greatly increase and negatively affect nearby ecological functions and human health issues including increased amount of PM-10 emissions from the proposed project site, alteration in hydrology and water retention among many other aspects. The loss of soil structure may also contribute conditions that cause valley fever which has been a problem at other solar sites in California[45]. A comprehensive environmental review must be provided that includes an estimate of the impact to these essential components of the landscape.

Cryptobiotic soils also uptake CO_2 at significant levels in the Mojave desert[46]. Because the FSA failed to evaluate the density and distribution of cryptobiotic soils on the proposed project site, it is impossible to calculate the amount of CO_2 uptake that is currently occurring on the site and how the amount of CO_2 reduction from the proposed project will offset that currently intact, functioning carbon sink provided by the on-site cryptobiotic soils.

M. Cumulative Impacts are Not Fully Disclosed and Analyzed

Even before undertaking a fully adequate analysis of the cumulative impacts as outlined in the Cumulative Scenario, the PSA admits that impacts from this project will be "cumulatively considerable" for a number of resources including:

- Sonoran Creosote Bush Scrub & Associated Wildlife Habitat (PSA at 4.2-86);
- Waters of the State/Sensitive Plant Communities (PSA at 4.2-86);
- Groundwater dependent plant communities (PSA at 4.2-87).
- Mojave fringe-toed lizard (PSA at 4.2-87).
- Burrowing owl (PSA at 4.2-88).
- Golden eagle (PSA at 4.2-88).
- Special status bats (PSA at 4.2-89).

[42]Belnap 2006
[43]Belnap 2001
[44]Belnap & Eldridge 2001
[45] http://articles.latimes.com/2013/apr/30/local/la-me-solar-fever-20130501
[46]Wohlfardt et al. 2008

- American badgers and desert kit fox (PSA at 4.2-90).

While we appreciate the CEC's candor in admitting these cumulatively considerable impacts, CEQA first requires full disclosure of cumulative impacts (which has not yet been provided), analysis, and a full and fair effort on the part of the agency to avoid such impacts through its alternatives analysis. Only after these initial steps have been taken can the agency then turn to the next requirement-- to ensure any remaining impacts are minimized and mitigated. Until the agency fully identifies the impacts from the proposed project, analyzes the impacts to the environment, and completes an adequate alternatives analysis, the simple conclusions that not all cumulative impacts can be mitigated are premature.

Additionally, at minimum, the cumulative impacts need to identify and analyze many additional impacts in the cumulative context including: the impacts to desert tortoise from translocation and relocation efforts; impacts to Mojave fringe-toed lizard and its sand habitat; impacts to rare plant communities; impacts to movement corridors for various species; and others. For example, for desert tortoise, as the other potential and permitted projects get implemented, it will push more desert tortoises into less and less habitat. Additional development of other renewable energy projects in the Riverside East SEZ will also further isolate the existing population of resident, relocated and translocated desert tortoise in the Colorado Desert recovery unit. These same potential isolation issues due to the cumulative impacts of projects in the Riverside East SEZ also need to be discussed for Mojave fringe-toed lizard, waters of the state, wildlife connectivity and groundwater pumping. All of these cumulative impacts need to be included and analyzed in a comprehensive environmental review document.

N. Conformance with the Desert Renewable Energy Conservation Plan and Solar PEIS

The CEC is signatory to the planning agreement for the Desert Renewable Energy Conservation Plan (DRECP), a proposed conservation plan under the Natural Communities Conservation Plan Act (NCCPA). The NCCP Act § 2810 (b)(8) requires that:

> "interim process during plan development for project review wherein discretionary projects within the plan area subject to Division 13 (commencing with Section 21000) of the Public Resources Code that potentially conflict with the preliminary conservation objectives in the planning agreement are reviewed by the department prior to, or as soon as possible after the project application is deemed complete pursuant to Section 65943 of the Government Code and the department recommends mitigation measures or project alternatives that would help achieve the preliminary conservation objectives. As part of this process, information developed pursuant to paragraph (5) of subdivision (b) of Section 2810 shall be taken into consideration by the department and plan participants".

The current preliminary conservation strategy of the DRECP[47] identifies the proposed project site as moderate biological sensitivity, surrounded by high biological sensitivity area and considers it for conservation purposes, not development purposes. Furthermore, as mentioned above, the Solar PEIS requires that corridors movement corridors be established in this area and this proposed project site appears to significantly block one of the best corridors including the previously designated WHMA for tortoise connectivity. This issue is not addressed in the PSA but must be thoroughly addressed before the agency can fairly determine the full impacts of the proposed project on wildlife and other resources in this area.

To that point, the PSA fails to provide an evaluation of the conformance of the proposed project with the preliminary conservation objectives of the DRECP as required under the NCCPA. Therefore, we request that the clearly needed future comprehensive environmental review include an analysis of the conformance of this proposed project with the DRECP.

III. CONCLUSION

From a scientific perspective, developing utility scale renewable energy project in the California deserts without first undertaking comprehensive planning is a huge gamble for wildlife[48]; and here the proposed project is poorly sited and conceived, and poses huge risks to wildlife by, among other things, cutting off connectivity across the landscape, creating a aerial impact zone for undetermined numbers of birds in the middle of a major north-south valley, and impeding eolian processes critical for maintaining sand dune communities. For this and future proposed projects, mechanisms should be put in place that encourage solar facilities to be proposed and sited on disturbed lands instead of in fully ecologically functioning habitat, such as is found in the Palen Valley, which supports a variety of rare and threatened species.

We hope and expect that the CEC will carefully consider a full range of alternatives and go beyond the admittedly incomplete and preliminary information provided in the PSA. The CEC should revisit these all of the environmental issues in detail, filling in the missing data gaps and analyses and provide a full range of alternatives, including distributed solar generation, as part of a comprehensive environmental review document provided for public review and comment.

Thank you for the opportunity to submit these comments. Please feel free to contact me for additional information at 535-654-5943 or at ianderson@biologicaldiversity.org

[47] http://www.drecp.org/documents/#conservation

[48] Lovich and Ennen 2011

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