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Delivered via electronic mail (cmcfarli@energy.state.ca.us and tom_hurshman@blm.gov)

Che McFarlin, Project Manager
California Energy Commission

Tom Hurshman, Project Manager
Bureau of Land Management

Re: Comments on the California Energy Commission Preliminary Staff Assessment for the Ivanpah Solar Electric Generating System

Dear Mr. McFarlin and Mr. Hurshman,

Please accept and fully consider these comments on the California Energy Commission's Preliminary Staff Assessment (PSA) on the Ivanpah Solar Electric Generating System (ISEGS) project on behalf of The Wilderness Society and the Natural Resources Defense Council.

The mission of The Wilderness Society is to protect wilderness and inspire Americans to care for our wild places. We have worked for more than 70 years to maintain the integrity of America's wilderness and public lands and and ensure that land management practices are sustainable and based on sound science to ensure that the ecological integrity of the land is maintained. With over 300,000 members and supporters nation-wide, TWS represents a diverse range of citizens.

NRDC is a non-profit environmental organization with over 650,000 members nationwide. NRDC uses law, science and the support of its members and activists to protect the planet's wildlife and wild places and to ensure a safe and healthy environment for all living things. NRDC has worked to protect wildlands and natural values on public lands for many years.

It is clear that the nation's growing addiction to fossil fuels, coupled with the unprecedented threats brought about by global warming, imperil the integrity of our wildlands as never before. To sustain both our wildlands and our human communities, The Wilderness Society and NRDC believe the nation must transition away from fossil fuels as quickly as possible. To do this, we must eliminate energy waste, moderate demand through energy efficiency, conservation, and demand-side management practices, and rapidly develop and deploy clean, renewable energy technologies, including at the utility-scale.

Our public lands harbor substantial wind, solar, and geothermal resources. Developing some of these resources will be important to creating a sustainable energy economy and combating climate change, and The Wilderness Society and NRDC support such responsible development of renewable energy. Renewable resource development is not

appropriate everywhere on the public lands, however, and development that does occur on the public lands should take place in a responsible manner.

Continue to Improve the Process

In general, as your agencies, the Bureau of Land Management (BLM) and the California Energy Commission (CEC), process applications for solar development on public lands, we urge you to continue to improve the process. Among the areas where additional guidance is needed are: incorporating additional Best Management Practices (BMPs), refining the Right of Way (ROW) application process to properly address the differences between solar development and other uses of ROWs, and incorporating recommendations from ongoing transmission planning. In general, BLM and CEC (the agencies) should prioritize and help guide renewable energy development toward land that has already been developed for industrial, agricultural, or other intensive human uses which are close to existing transmission over ecologically-intact public lands

Our organizations support and are actively engaged in a number of processes aimed at identifying environmentally appropriate areas for solar energy development in California and the West, including the California Renewable Energy Transmission Initiative, the Western Governors' Association's Western Renewable Energy Zone process, and the BLM's plan to develop a Programmatic Environmental Impact Statement on Solar Energy. We urge you to incorporate the work of these processes as you move forward with permitting solar energy projects in the desert.

We understand that the BLM has decided to process qualified renewable energy project applications during the period while these processes are underway. Nonetheless, we believe it is urgent that both the BLM and the CEC work together with stakeholders to develop as quickly as possible a comprehensive approach to evaluating future projects that will ensure that the most appropriate sites for development are utilized while more sensitive sites are protected and preserved. We urge that you begin developing this approach as promptly as possible and would be pleased to help in any way we could.

Project Specific Comments

Our comments below on the Ivanpah SEGS are organized under two topics: 1) the relative suitability of the proposed site for a large-scale commercial solar energy development, and 2) the specific issues pertaining to the ISEGS project.

I. Relative Suitability of Project Proposal Site

Based on the information gathered to date, the ISEGS project site appears to have both characteristics conducive to utility scale solar development as well as resources and qualities which will be negatively impacted by such development and require careful consideration.

Characteristics conducive to utility-scale solar development

The site does not contain designated sensitive and protected areas such as Areas of Critical Environmental Concern, nor has been it been proposed by citizens for designation as wilderness. In addition, the area has relatively limited use for other activities such as recreation.

The site does have high value solar resources and is close to major infrastructure and other developments, as well as existing transmission which could be upgraded to support the project.

All of the attributes contribute to the possibility that development of a commercial scale solar facility on this site could result in an overall benefit to the public lands and the American people who own them.

Resource Concerns

There are number of significant resources on the site that require an in-depth analysis of the impacts of the proposed project and development of a comprehensive impacts minimization and mitigation strategy.

Through the permitting process, BLM, CEC, and Bright Source may be able to develop this project in a way that supports climate change goals while adequately minimizing and mitigating impacts.

The relatively undisturbed nature of the ISEGS project site requires further study to ensure that other values will not be unacceptably impacted, as well as careful consideration of alternative configurations and alternative sites in the forthcoming federal/state environmental review.

In future, as noted above, we urge the agencies review this type of development on a landscape scale. We support a more comprehensive approach to the siting of these projects, the identification of areas appropriate for development, and the prioritization of already disturbed areas.

A. <u>Biological Resources</u>

The PSA states that the California Energy Commission staff (staff) are currently unable to determine whether or not ISEGS would comply with the laws, ordinances, regulations, and standards (LORS) pertaining to Biological Resources. The PSA states that "staff considers the 4,065-acre ISEGS project would be a substantial contributor to the cumulatively significant loss of Ivanpah Valley's biological resources, including the threatened desert tortoise and other special-status species." (PSA p. 1-10). Desert tortoise are under federal and state Endangered Species Acts protection as "threatened" (USFWS 2006) In addition to 4,065 acres of occupied desert tortoise habitat that would be permanently lost, a minimum of 25 desert tortoises would need to be translocated.

Adjacent desert tortoise habitat will become fragmented and degraded by the project and it could lead to the spread of invasive species invasion and increased raven predation.

In addition to other special-status wildlife species and special-status plants, there are 2,000 ephemeral drainages on the site. The ISEGS project would impact 198 acres of waters in California.

The PSA concludes that "applicant's proposed mitigation, acquisition, and enhancement of approximately 4,065 acres would be insufficient to avoid significant direct, indirect, and cumulative impacts to biological resources of the Ivanpah Valley, and fails to meet the California Department of Fish and Game's full mitigation standard for desert tortoise. Staff also believes this proposed mitigation will be inadequate to compensate for cumulatively significant impacts to other special-status plant and animals inhabiting the project site and to offset permanent loss of waters of the state." (PSA p. 5.2-2).

The staff has proposed the development of "a compensatory mitigation approach that includes appropriate levels of suitable habitat acquisition and enhancement, includes measures that would mitigate impacts to special-status plants and wildlife and to waters of the state." (PSA p. 1-10). The PSA includes detailed information needs from the applicant including "specific information on how to compensate for loss of habitat for desert tortoise, for loss of rare plants and other sensitive species, or for impacts to state waters." (PSA p. 1-11). Importantly, the applicant must also provide a compensatory mitigation and enhancement plan and a Desert Tortoise Translocation Plan.

Recommendation: We are concerned by the potential habitat loss and significant impacts to biological resources, specifically to desert tortoise and other rare wildlife and plant species, from the ISEGS project. Based on the area's important natural and biological values and the potential for damage from the construction, use and maintenance of solar facilities, we urge the agencies to utilize the upcoming federal/state environmental review – Environmental Impact Statement/Environmental Impact Report – as the basis for determining whether the impacts from this development can be mitigated sufficiently and whether it is consistent with all applicable LORS. We also strongly support the staff proposal for a compensatory mitigation approach and urge the applicant to provide all information requested in the PSA related to biological resources as soon as possible. As part of this effort, it will be necessary for the agencies to determine the appropriate habitat mitigation ratio to ensure the long-term health and viability of the desert tortoise. Further, we note that, although translocation is a tool to enhance the conservation of the desert tortoise, it should not be substituted for preserving desert tortoise habitat (Field et al 2007).

B. Soil Resources

The PSA states that "soil losses would develop during construction and grading activities and there would be ongoing soil loss after the project is constructed." (PSA p. 1-11). This soil loss and erosion "could be significant and would need to be mitigated." (PSA p.

1-11). The staff recommend that conditions of certification to ensure BMPs are in place to mitigate soil erosion by wind and water.

Recommendation: To protect the soil resources of the ISEGS project area, we support the staff's recommendation for the inclusion of conditions of certifications to ensure BMPs are in place to mitigate soil erosion by wind and water.

C. Water Resources

The project applicant estimates that project water consumption will be no more than 100 acre-feet (32.6 million gallons) per year, primarily used for washing heliostats and to replace boiler feed water blow-down (PSA p. 1-3). Groundwater will be drawn from one of two wells to be constructed at the northwest corner of Ivanpah 1.

The PSA states that because the applicant has not identified a source of potable water, potable water would be supplied from an unknown source, and staff cannot evaluate the potential environmental impacts associated with using this water. However, the PSA states that "given the estimated number of employees and duration of construction there could be a significant impact if a local water supply is proposed." (PSA p. 1-12).

Staff also identify potential concerns regarding the migration of brackish groundwater. Well use at the nearby Primm Golf Course has been reduced due to the intrusion of brackish water that was not suitable for landscape irrigation. The PSA states that "although the magnitude of drawdown at the existing wells is minimal, there is a potential for migration of brackish groundwater westward towards the existing and proposed wells due to existing and proposed pumping by ISEGS. Staff believes additional modeling is necessary to evaluate potential water quality impacts." (PSA p. 1-12).

Recommendation: Additional information is needed regarding the source of potable water and the impacts from potable water use and groundwater pumping. To ensure the long-term sustainability of the area's water quality and quantity, the agencies should perform an in-depth impacts analysis and develop a comprehensive impacts minimization and mitigation plan.

D. Cultural Resources

Additional information is needed regarding the cultural resources in the ISEGS project area. In particular, the PSA states that while "preliminary results that the applicant provides indicate that there may be no historically significant ethnographic resources in the project area of analysis," "staff cannot definitively conclude the analysis of such resources absent the final results of recent field efforts." (PSA p. 1-11).

Recommendation: The agencies should carefully evaluate the final results of field research to determine whether cultural resources exist in the project area. If cultural resources exist, the agencies should thoroughly analyze the impacts of the ISEGS project

to those resources and develop a comprehensive impacts minimization and mitigation plan.

E. Visual Resources

ISEGS projects

As discussed below, it is clear that there will be significant visual impacts from the construction of the ISEGS project. However, the construction of a six square mile industrial development anywhere on public lands will entail significant visual impacts, and the benefits which the ISEGS renewable energy project will provide may well outweigh the costs of the visual impacts from this development.

In the case of the ISEGS project, staff believes the impacts to Visual Resources are unmitigatable. The PSA also concludes that "ISEGS project would not meet the visual objectives of the [Visual Resource Management] VRM classes assigned to the site and viewshed by BLM, as seen from several Key Observation Points. As such the project would have a significant unmitigatable impact under CEQA." (PSA p. 1-13). The ISEGS project would also not conform to the goals and policies of the San Bernardino County General Plan Conservation and Open Space Elements. To minimize visual impacts from development, the PSA states that "if the Commission approves the project, staff recommends that all of staff's proposed conditions of certification be adopted in order to minimize impacts to the greatest feasible extent." (PSA p. 5.12-34).

CDCA in general

The ISEGS project, however, is only the first of many projects that have been proposed for the CDCA. The PSA "identifies 76 solar project and 61 wind project applications with a total overall area of over one million acres within the CDCA. This figure [sic] does not include renewable projects within the Nevada and Arizona portions of the Mojave Desert. With this very high number of renewable energy applications currently filed with BLM, the potential for profound widespread cumulative impacts to scenic resources within the CDCA is clear. These impacts could include a substantial decline in the overall number and extent of scenically intact, undisturbed desert landscapes, and a substantially more industrial character in the overall CDCA and Mojave Desert Landscape." (PSA p. 5.12-29).

Recommendation: In the case of the ISEGS project, the agencies should consider whether the benefits which the ISEGS renewable energy project will provide outweigh the costs of the visual and other impacts from this development.

The agencies should also follow the staff recommendation that all of staff's proposed conditions of certification be adopted in order to minimize visual impacts to the greatest feasible extent. We further recommend that the agencies consider inclusion of any appropriate additional conditions of certification which could reduce visual impacts.

In addition, given the number of projects proposed for the California Desert, we urge the agencies to recognize the likely cumulative visual and other impacts from renewable

energy and transmission development in the Desert and to begin right now to develop comprehensive mitigation strategies to address these impacts in connection with future projects. Only by developing such strategies can the need for renewable energy development be balanced with protection of visual and other resources on public lands.

To deal with these and other issues in a systematic manner going forward, we urge that solar development be avoided in areas where the BLM seeks to preserve the existing character of the landscape – e.g., lands in VRM classes I and II, and that it be prioritized on lands that are already impaired. Such sites are often already visually degraded and major changes to the existing character of the land have already occurred.

Such sites are also often close to existing infrastructure, which is another important consideration, both in conjunction with degraded sites and as a separate factor. Proximity to existing infrastructure will minimize new road construction or major roadway improvements (such as paving and widening), avoiding another set of impacts on the public lands. Further, proximity to the load that will be served by the project can limit the amount of new transmission needed and reduce related income.

II. ISSUES SPECIFIC TO ISEGS PROJECT PROPOSAL

A. Air Quality

Staff identify several areas of concern regarding impacts of the ISEGS project to air quality during construction and operation, including particulate matter (PM) emissions which are 10 micrometers in diameter, emissions related to potentially diesel powered truck delivery of materials to the site, and ozone precursor emissions.

The PSA states that the construction of the ISEGS project would cause PM 10 emissions which would add to the existing violations of the ambient PM 10, air quality standards, making the PM 10 emission impacts due to construction of the project significant. (PSA p. 1-9). The staff believes that implementation of proposed specific mitigation measures during construction of the facility as identified in the conditions of certification would reduce the short-term impacts of PM 10 a level of less than significant. (PSA p. 1-9).

Staff identify the need for additional information regarding the criteria emissions from the delivery of considerable amounts of materials to the site. The PSA states that "if diesel powered truck delivery of those materials is the chosen method, then there could be considerable emissions associated with truck deliveries within the Mojave Desert Air Basin." (PSA p. 1-9). Staff commits to working with the applicant to quantify those emissions and address any impacts and mitigation measures, if necessary, in the Final Staff Assessment.

Staff believes that the project's ozone precursors and PM 10 emissions during operation are minimal, but would likely be significant. (PSA p. 1-9). The PSA states that "implementation of the staff recommended mitigation measures would reduce the facility emissions of ozone precursors from the proposed 14.86 tons per year (TPY) to 2.04 TPY

(86 percent), and would reduce the facility PM 10 emissions from 19.6 TPY to 4.72 TP (76 percent). Similarly, carbon monoxide (CO), PM2.5, and carbon dioxide (CO_2) emissions would be significantly reduced." (PSA p. 1-9). Staff believes that the implementation of its recommended mitigation measures would reduce the facility potential emission impacts of ozone and PM 10 to a level of less than significant. (PSA p. 1-9).

Recommendation: The agencies should require implementation of the proposed specific mitigation measures during construction and operation of the facility to reduce the short and long-term impacts of ozone precursors, CO and CO_2, and PM 10 to less than significant. The agencies should also require additional analysis of criteria emissions from the delivery of materials and any other activities which may have air quality impacts. If the analysis indicates potential impacts, the agencies should develop a comprehensive impacts minimization and mitigation plan.

B. Public Benefits

The PSA states that "ISEGS offers the benefit of providing a source of renewable energy with minimal use of natural gas when solar conditions are insufficient." (PSA p. 1-13). Renewable energy development can have multiple public benefits, most importantly combating climate change by reducing greenhouse gas (GhG) emissions from energy production. A reduction in GhG emissions from developing renewable energy is based on comparative emissions from fossil fuel-based energy production.

Because a reduction in GhG emissions is a primary public benefit of renewable energy development, it is critical that the agencies quantify this reduction to the extent possible. The agencies' analysis of GhG reductions should be based on a comprehensive look at the project's impacts, including GhG emissions during manufacture, construction, operation, decommissioning, and reclamation of the project site. The analysis should consider both the potential for the project to reduce GhG emissions as well as potential for the project to increase GhG emissions, for example, by disturbing undisturbed land currently useful for carbon sequestration.

The results of this analysis should then be compared to similar analyses for fossil-fuel based energy production, including combined-cycle natural gas fired and coal fired power plants.

Such an analysis will provide the public a clear indication of the costs and benefits of the proposed project and allow stakeholders to make decisions regarding the project based on the best available science and data.

Recommendation: The agencies should comprehensively analyze the ISEGS project's impacts to GhG emissions, including GhG emissions during manufacture, construction, operation, decommissioning, and reclamation of the project site. The analysis should consider both the potential for the project to reduce GhG emissions as well as potential

for the project to increase GhG emissions, for example, by disturbing undisturbed land currently useful for carbon sequestration.

The results of this analysis should then be compared to similar analyses for fossil-fuel based energy production, including combined-cycle natural gas fired and coal fired power plants.

Thank you for your consideration of these comments.

Sincerely,

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