CENTER *for* BIOLOGICAL DIVERSITY

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Bureau of Land Management
Needles Field Office
Attention: George R. Meckfessel
Planning and Environmental Coordinator
1303 South U.S. Highway 95
Needles, CA 92363
ca690@ca.blm.gov

Re: Comments on Draft Environmental Impact Statement and Draft California Desert Conservation Area Plan Amendment for the Ivanpah Solar Electric Generating System (07-AFC-5)

Dear Mr. Meckfessel:

On behalf of the Center for Biological Diversity's 240,000 staff, members and on-line activists in California and throughout the western states, we submit these comments on the Draft Environmental Impact Statement And Draft California Desert Conservation Area Plan Amendment (the DEIS) - Ivanpah Solar Electric Generating System (hereinafter "proposed project" or "ISEGS").

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 emission reductions set by AB 32 and Executive Orders S-03-05 and S-21-09. The Center for Biological Diversity (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 in proximity to the areas of electricity end-use in order to reduce the need for extensive new transmission corridors 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.

Unfortunately, the DEIS for the proposed plan amendment and right-of-way application fails to provide adequate identification and analysis of the significant impacts to the desert tortoise, rare plants, other biological resources, cumulative and growth inducing impacts of the

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project, and lacks consideration of a reasonable range of alternatives. In addition, BLM has failed to fully examine in impact of the proposed plan amendment (and other similar proposed plan amendments) that would result in industrial sites sprawling across the California Desert within habitat that should be protected to achieve the goals of the bioregional plan as a whole.

Nonetheless, even the inadequate information provided in the DEIS shows that the proposed plan amendment and right-of-way application should be denied because the proposed project will result in significant impacts to a healthy breeding population of desert tortoise in an area essential to the recovery of the species. Alternative siting, which the BLM failed to adequately address in the DEIS, would significantly reduce the impacts to this listed and still declining species, its occupied habitat, and other special status species including rare plants and desert bighorn sheep. The Center urges the BLM to revise the DEIS to adequately address these and other issues detailed below and re-circulate the DEIS for public comment.

As proposed the proposed project will cover approximately 4,073 acres (approximately 6.4 square miles) of Mojave desert scrub that is prime habitat for the federally and state threatened desert tortoise and a suite of other rare plant and animal species. In the sections that follow, the Center provides detailed comments on the ways in which the DEIS fails to adequately identify and analyze many of the impacts that could result from the proposed project, including but not limited to: impacts to biological resources, growth inducing impacts alternatives and cumulative impacts. In addition, if undertaken as proposed, this industrial project is inconsistent with local planning and zoning laws, the Endangered Species Act ("ESA"), the Federal Land Policy Management Act ("FLPMA"), the California Desert Conservation Act ("CDCA"), and other laws, ordinances, regulations and standards.

These comments incorporate by reference scoping comments submitted by the Center to BLM for this proposed project and all exhibits provided. In many ways, it appears that the BLM failed to properly consider the extensive comments provided during the scoping for the DEIS by the Center, other conservation groups, and other members of the public for example regarding the need for a robust alternatives analysis.[1]

In addition, the Center hereby incorporates by reference all of the materials before the California Energy Commission regarding the approval of this project. BLM is a party to the CEC process, which is being conducted in concert with the BLM approval process, and BLM has access to all of the documents (which are also readily accessible on the internet), therefore, BLM should incorporate all of the documents and materials from that process into the administrative record for the BLM decision as well.[2]

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[1] Although BLM failed to properly consider scoping comments in preparing the DEIS, we encourage the BLM to review those scoping comments as well as these comment regarding the DEIS in preparing a supplemental or revised DEIS which is clearly necessary in this instance.

[2] In addition to providing copies of the references for these comments on a disk to BLM, out of an abundance of caution, the Center is also providing copies of exhibits 900-937 submitted to the CEC to the BLM on a second disk (there is substantial overlap).

I. The BLM's Analysis of the Proposed Plan Amendment and Proposed Project Fail to Comply with FLPMA.

As part of FLPMA, Congress designated 25 million acres of southern California as the California Desert Conservation Area ("CDCA"). 43 U.S.C. § 1781(c). Congress declared in FLPMA that the CDCA is a rich and unique environment teeming with "historical, scenic, archaeological, environmental, biological, cultural, scientific, educational, recreational, and economic resources." 43 U.S.C. § 1781(a)(2). Congress found that this desert and its resources are "extremely fragile, easily scarred, and slowly healed." Id. For the CDCA and other public lands, Congress mandated that the BLM "shall, by regulation or otherwise, take any action necessary to prevent unnecessary or undue degradation of the lands." 43 U.S.C § 1732(b).

The sum total of the plan amendment to the CDCA plan is one sentence: "Permission granted to construct solar energy facility (proposed Ivanpah Solar Electric Generating System)." FSA/DEIS at 2-9. Given the impact of the proposed project on other multiple uses of these public lands at the proposed site as well as other aspects of the bioregional planning, it appears that BLM may also need to amend other parts of the plan as well and in addition should have looked at additional and/or different amendments as part of the alternatives analysis. For example, given the surveys which again confirm and provide new information on the biological richness of the area and the relatively robust tortoise population, the BLM should consider an alternative plan amendment that would designate this area as DWMA. A similar proposal was included in the NEMO plan alternatives that would have designated 29,110 acres in the Northern Ivanpah Valley as one of 4 ACECs to protect viable desert tortoise populations. *See* NEMO FEIS at 2-19 (Alternative 2 -- Desert Tortoise Recovery).

As discussed further below regarding FLPMA, and in the section on NEPA and segmentation, the BLM should have taken a more comprehensive look at the plan amendment to determine 1) whether industrial scale projects are appropriate for any of the public lands in this area, 2) if so, how much of the public lands are suitable for such industrial uses given the need to balance other management goals including tortoise recovery and recreational uses, and 3) the location of the public lands suitable for such uses, if any. Rather, BLM appears to have looked at this application and others in the area (both in California and Nevada) on BLM managed lands, as well as other proposed projects, in isolation. As a result, this piecemeal approach to project review threatens to undermine the "bioregional" approach in the NEMO Plan amendment and the CDCA Plan as a whole as well as violate the fundamental planning principles of FLPMA.

A. The FSA/DEIS Fails to Adequately Address the Plan Amendment in the Context of the CDCA Plan.

Unfortunately, the DEIS fails to adequately consider the impacts of the proposed project and plan amendment and reasonable alternatives in the context of FLPMA, the CDCA Plan as amended by the NEMO plan amendment. FLPMA requires that in developing and revising land use plans, the BLM consider many factors and "use a systematic interdisciplinary approach to achieve integrated consideration of physical, biological, economic, and other sciences . . . consider the relative scarcity of the values involved and the availability of alternative means

(including recycling) and sites for realization of those values." 43 U.S.C. § 1712(c). As stated clearly in the CDCA Plan:

> The goal of the Plan is to provide for the use of the public lands, and resources of the California Desert Conservation Area, including economic, educational, scientific, and recreational uses, in a manner which enhances wherever possible—and which does not diminish, on balance—the environmental, cultural, and aesthetic values of the Desert and its productivity.

CDCA Plan at 5-6. The CDCA Plan also provides several overarching management principles:

> MANAGEMENT PRINCIPLES
>
> The management principles contained in the law (FLPMA)—*multiple use, sustained yield, and the maintenance of environmental quality*—are not simple guides. Resolution of conflicts in the California Desert Plan requires innovative management approaches for everything from wilderness and wildlife to grazing and mineral development. These approaches include:
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> —Seeking simplicity for management direction and public understanding, avoiding complication and confusing in detail which would make the Plan in comprehensive and unworkable.
>
> —Development of decision-making processes using appropriate guidelines and criteria which provide for public review and understanding. These processes are designed to help in allowing for the use of desert lands and resources while preventing their undue degradation or impairment.
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> *—Responding to national priority needs for resource use and development, both today and in the future, including such paramount priorities as energy development and transmission, without compromising the basic desert resources of soil, air, water, and vegetation, or public values such as wildlife, cultural resources, or magnificent desert scenery. This means, in the face of unknowns, erring on the side of conservation in order not to risk today what we cannot replace tomorrow.*
>
> *—Recognizing that the natural patterns of the California Desert, its geological and biological systems, are the basis for planning*, and that human use patterns, from freeways to fence lines, define its boundaries. Only in this way can the public resources can be understood and protected by the Plan that can be publicly comprehended, accepted, and followed.

CDCA Plan 1980 at 6 (first emphasis in original, second emphasis added).

The CDCA Plan anticipated that there would be multiple plan amendments over the life of the plan and provides specific requirements for analysis of Plan amendments. Those requirements include determining "if alternative locations within the CDCA are available which would meet the applicant's needs without requiring a change in the Plan's classification, or an amendment to any Plan element" and evaluating "the effect of the proposed amendment on BLM

management's desert-wide obligation to achieve and maintain a balance between resource use and resource protection." CDCA Plan at 121. Thus, BLM should have, at minimum, analyzed in the DEIS whether alternative locations were available that would not require a plan amendment, and how the proposed amendment would affect desert-wide resource protection—it failed on both counts.

The CDCA Plan includes the Energy Production and Utility Corridors Element which is focused primarily on utility corridors with brief discussion of powerplant siting. Even in 1980 the CDCA Plan contemplated that alternative energy projects would likely be developed in the future but did not expressly provide planning direction for solar energy production. Nonetheless, the overarching principles expressed in the Decision Criteria are also applicable to the proposed project here including minimizing the number of separate rights-of-way, providing alternatives for consideration during the processing of applications, and "avoid[ing] sensitive resources wherever possible." CDCA Plan at 93.

In response to the listing of the desert tortoise and the need to conserve other listed species within the CDCA, BLM began the process of preparing management plans and plan amendments for six planning areas that together would "provide a landscape approach to managing desert ecosystems." NEMO Plan FEIS at ES-1. This so-called bioregional approach was intended to support species recovery for listed species, special status plants and animals and natural communities. *Id.* at ES-2. Nothing in the FSA/DEIS shows that BLM considered the landscape level issues and management objectives or meaningful alternatives to the proposed plan amendment—including an alternative that would designate this area as a DWMA.

In addition, BLM should have considered the impacts to existing land use plans for these public lands across several scales including, for example: in the Northern Ivanpah Valley; in the Ivanpah Valley as a whole (across stateliness); in the NEMO planning area; and in the CDCA as a whole.

B. Fails to Adequately Address Impacts to Multiple Use Class L Lands and Loss of Multiple Use in Favor of a Single Use for Industrial Purposes.

As FLPMA declares, public lands are to be managed for multiple uses "in a manner that will protect the quality of the scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values." 43 U.S.C.§ 1701(a)(7) & (8). The CDCA Plan as amended provides for four distinct multiple use classes based on the sensitivity of resources in each area. The proposed project site is in MUC class L lands. FSA/DEIS at 6.5-11. *See also* CDCA Plan Map 1 (planning unit #65); NEMO FEIS at 2-19, Table 2.5 (N. Ivanpah Unit contains 23,281 acres of class L or C and 5,929 acres of class M lands). Under the CDCA Plan, Multiple-use Class L (Limited Use) "protects sensitive, natural, scenic, ecological, and cultural resources values. Public lands designated as Class L are managed to provide for generally *lower-intensity, carefully controlled multiple use of resources, while ensuring that sensitive values are not significantly diminished.*" CDCA Plan at 13 (emphasis added). The proposed project is a high-intensity, single use of resources that will displace all other uses and that will significantly diminish (indeed, completely destroy) of over 4,000 acres of high-quality occupied desert tortoise habitat among other impacts. On this basis as well as others the

proposed project is inappropriate for a Limited Use area such as this one and the terms of the proposed plan amendment are inconsistent with the CDCA Plan.

Although solar development is a potentially allowable use in this area, the BLM must take into account all of the relevant multiple uses of the area that could be displaced before making a decision including, for example, the displacement of desert tortoises, destruction and fragmentation of high quality habitat, destruction of sensitive plant species and plant communities, and impacts to water quality, cultural resources, and native American values.

The FSA/DEIS acknowledges that "The project would transform the Ivanpah Valley area from a mostly natural setting to a more industrial setting." FSA/DEIS at 6.18-6 (in the context of regional recreation). In the FSA/DEIS this issue is looked at solely in the context of recreation and visual resources, however, no where in the document does BLM look at the issue of industrialization in the context of biological resources, the CDCA Plan as a whole, or how transformation of this area will affect the overall landscape-wide bioregional planning approach. As discussed below, there is a significant growth inducing aspect to the transformation of this area to industrial uses as well that is not adequately addressed in the FSA/DEIS.

The adoption of the proposed plan amendment will change the multiple-use character of these lands which currently provides habitat for the threatened desert tortoise, grazing, and off-road vehicle routes in favor of a single use that will completely displace other uses on the proposed site and impact other uses significantly in the valley as a whole. For example, the proposal would require changes in the route network resulting in several routes which would need to be moved—those changes to the route network are not reflected clearly in the FSA/DEIS (nor are the likely direct, indirect and cumulative impacts of changing those route designations adequately identified or analyzed, as discussed in detail below). The FSA/DEIS simply concludes: "There will be no direct impacts because rerouting affected routes of travel would accommodate the limited amount of recreational use in the project location." FSA/DEIS at 6.18-10. However, BLM may need to amend the route designations in the area because these routes are part of a network and "rerouting" them along the fence line of a major industrial installation will undoubtedly change use of the previously existing routes and most likely cause increased use on other nearby routes, new unauthorized routes that will provide connections to the other routes, and/or entirely new unauthorized routes to be created to avoid the industrial site entirely. There is no evidence that recreational off-road vehicle users will be content to drive for miles along a fence adjoining an industrial site rather than striking off cross-country to connect with more scenic routes. Past experience shows that the latter is quite understandably a much more likely outcome and BLM should recognize this in analyzing the impacts of this project.

The maps for the route designation clearly color-code the routes in this area as "DWMA" routes (*See* Map Figure 2-1 NEMO Proposed Plan) which we believe should indicate that use of these routes should be limited as it is in the DWMAs. Oddly, however, the NEMO route designation FEIS fails to include these routes in table A-1 in Appendix A which presumably provided complete information on routes. As a result, it is impossible to discern whether these routes were designated open, closed or limited in the NEMO route designation or whether the proposed plan amendment is actually consistent or inconsistent with the route designations. The Center suggests that a reasonable alternative to the proposed plan amendment would be to

provide a plan amendment that would designate this area as a DWMA and/or also affirm the designation of the routes as limited to the extent that these routes should be treated the same as routes within DWMAs to protect the resident tortoise population.

As another example of the BLM's failure to adequately address multiple use principles, the proposed site is within an existing grazing allotment lease and the FSA/DEIS states that "Approval of the project would require a modification of the grazing lease, by reducing the total active AUMs as calculated from past range adjudication methods." FSA/DEIS at 6.16-4. First, the FSA/DEIS appears to be using the wrong baseline AUMs for this allotment. The NEMO plan clearly states that the Clark Mountain allotment includes 97,560 acres of public lands and 1,303 AUMs (NEMO Plan at 3-29, Table 3.5), in contrast the FSA/DEIS states that "There are currently 1,428 AUMs leased on the entire Clark Mountain Allotment." FSA/DEIS at 6.16-1.[3] Second, BLM estimates that the proposed project would require modification of the grazing lease to eliminate 70 AUM on the lands that would be removed from multiple use for the proposed project and proposes only this "temporary" reduction in grazing for the life of the project (which is expected to be 50 years), but does not propose to retire grazing from this area, and rather assumes that cattle will return "[f]ollowing the achievement of the objectives for rehabilitation" FSA/DEIS at 6.16-5. This statement completely ignores the need to provide NEPA analysis for the renewal of grazing allotments and simply assumes that even after 50 years the best use of the reclaimed site will be for grazing. More importantly, a 50-year reduction in grazing cannot truly be considered "temporary." Because the CDCA Plan as amended by the NEMO does not provide a mechanism for grazing retirement, in order for BLM to reduce the allotment size for 50 years, it should undertake a plan amendment. When BLM does so, it must consider a range of alternatives including a no action alternative (denying the ROW application and leaving the allotment in place), retirement of part of the allotment, and/or retirement of all of this allotment.

In addition, the fact that the DEIS fails to adequately identify or analyze many of the significant impacts to the tortoise population in the area from direct impacts (loss of habitat, fragmentation, take due to translocation, etc.) indirect impacts, and cumulative impacts is discussed in detail below. In addition, there is no meaningful analysis of how the actual use of the grazing allotment might change with a large 4,000 acre fenced industrial project site set into the middle of it and the potential for increased grazing in other areas due to this displacement. Nor there any discussion of the impacts of ongoing grazing on translocation sites or, more to the point, the need to reduce grazing in those areas of the allotment after tortoises are removed from the project site under the proposed translocation plan.[4] The DEIS for the proposed plan amendment should at minimum have included an alternative that would limit grazing in the translocation areas as well as reducing grazing on the project site itself.

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[3] There is no way to tell from the document whether this discrepancy is simply a mistake or if there is could be some rational basis such as, for example, if the higher number the AUMs includes AUMs on the non-BLM lands within the allotment. This and other basic problems with the DEIS mean that the document fails to provide its most essential function as a document of public disclosure.

[4] This is just one of the many oversights and failing associated with the analysis of the proposed translocation which is discussed in depth below.

D. Fails to Adequately Address Other Ongoing Planning Efforts

The FSA/DEIS fails to adequately address the proposed project in the context of other connected projects (including multiple solar projects, two substations and additional transmission lines) that if approved will create a *de facto* "solar zone" in this area undermining the ongoing PEIS planning process for solar development in six western states undertaken by BLM and DOE. As the BLM is well aware, the Ivanpah Valley area was *not* proposed as a solar development study area in that PEIS for either California or Nevada. Direct, indirect and cumulative impacts of the proposed project will convert the Northern Ivanpah Valley in California as well as Nevada into a *de facto* solar-industrial zone.

The cumulative impacts to species across the zone and even further across the state line into the eastern Ivanpah Valley are not adequately addressed in the planning context. Nor is the conversion of a largely natural area – the Ivanpah Valley and dry lake area as a whole—into a largely industrialized area with more than 6 large scale solar plants, the accompanying substations and power lines, glare and heat islands that will be created across the "zone" adequately addressed as in the environmental review. In fact, it is clear that piecemeal project approvals in this area will undermine the solar programmatic planning by federal agencies for the western states. This critical issue regarding planning on public lands is not adequately addressed in the FSA/DEIS which only mentions the PEIS process. FSA/DEIS at 4-11 to 4-12. The BLM does not analyze how the PEIS could be affected by piecemeal approval of this and other projects except to note in the alternatives section that: "the appropriateness of siting solar energy plants on various land use designations may be revisited in the PEIS." FSA/DEIS at 4-12. Such analysis *after the fact* is not consistent with the planning requirements of FLPMA or, indeed, any rational land use planning principles.

E. BLM Failed to Inventory the Resources of these Public Lands Before Making a Decision to Allow Destruction of those Resources

FLPMA states that "[t]he Secretary shall prepare and maintain on a continuing basis an inventory of all public lands and their resource and other values," and this "[t]his inventory shall be kept current so as to reflect changes in conditions and to identify new and emerging resource and other values." 43 U.S.C. § 1711(a). FLPMA also requires that this inventory form the basis of the land use planning process. 43 U.S.C. § 1701(a)(2). *See Center for Biological Diversity v. Bureau of Land Management*, 422 F.Supp.2d 1115, 1166-67 (N.D. Cal. 2006) (discussing need for BLM to take into account known resources in making management decisions); *ONDA v. Rasmussen,* 451 F.Supp. 2d 1202, 1212-13 (D. Or. 2006) (finding that BLM did not take a hard look under NEPA by relying on outdated inventories and such reliance was inconsistent with BLM's statutory obligations to engage in a continuing inventory under FLPMA). It is clear that BLM should not approve a management plan amendment based on outdated and inadequate inventories of affected resources on public lands.

As detailed below in the NEPA sections, here BLM has failed to compile an adequate inventory of the resources of the public lands that could be affected by the proposed project (including, e.g., late-summer/early-fall flowering plants, bighorn movement and use, other biological resources, and cultural resources) which is necessary in order to adequately assess the

impacts to resources of these public lands in light of the proposed plan amendment and BLM has also failed to adequately analyze impacts on known resources.

F. The FSA/DEIS Fails to Provide Adequate Information to Ensure that the BLM will Prevent Unnecessary and Undue Degradation of Public lands

FLPMA requires BLM to "take any action necessary to prevent unnecessary or undue degradation of the lands" and "minimize adverse impacts on the natural, environmental, scientific, cultural, and other resources and values (including fish and wildlife habitat) of the public lands involved." 43 U.S.C. §§ 1732(b), 1732(d)(2)(a). Without adequate information and analysis of the current status of the resources of these public lands, BLM cannot fulfill its duty to prevent unnecessary or undue degradation of the public lands. Thus, the failure to provide an adequate current inventory of resources and environmental review undermines BLM's ability to protect and manage these lands in accordance with the statutory directive.

BLM has failed to properly identify and analyze impacts to the resources including the listed and sensitive species in the project area. As detailed below, the BLM's failure in this regard violates the most basic requirements of NEPA and in addition undermines the BLM's ability to ensure that the proposal does not cause unnecessary and undue degradation of public lands. *See Island Mountain Protectors*, 144 IBLA 168, 202 (1998) (holding that "[t]o the extent BLM failed to meet its obligations under NEPA, it also failed to protect public lands from unnecessary or undue degradation."); *National Wildlife Federation*, 140 IBLA 85, 101 (1997) (holding that "BLM violated FLPMA, because it failed to engage in any reasoned or informed decisionmaking process" or show that it had "balanced competing resource values").

II. The DEIS Fails to Comply with NEPA.

NEPA is the "basic charter for protection of the environment." 40 C.F.R. § 1500.1(a). In NEPA, Congress declared a national policy of "creat[ing] and maintain[ing] conditions under which man and nature can exist in productive harmony." *Or. Natural Desert Ass'n v. Bureau of Land Mgmt.*, 531 F.3d 1114, 1120 (9th Cir. 2008) (quoting 42 U.S.C. § 4331(a)). NEPA is intended to "ensure that [federal agencies] ... will have detailed information concerning significant environmental impacts" and "guarantee[] that the relevant information will be made available to the larger [public] audience." *Blue Mountains Biodiversity Project v. Blackwood,* 161 F.3d 1208, 1212 (9th Cir. 1998).

Under NEPA, before a federal agency takes a "'major [f]ederal action[] significantly affecting the quality' of the environment," the agency must prepare an environmental impact statement (EIS). *Kern v. U.S. Bureau of Land Mgmt.*, 284 F.3d 1062, 1067 (9th Cir. 2002) (quoting 43 U.S.C. § 4332(2)(C)). "An EIS is a thorough analysis of the potential environmental impact that 'provide[s] full and fair discussion of significant environmental impacts and ... inform[s] decisionmakers and the public of the reasonable alternatives which would avoid or minimize adverse impacts or enhance the quality of the human environment.'" *Klamath-Siskiyou Wildlands Ctr. v. Bureau of Land Mgmt.*, 387 F.3d 989, 993 (9th Cir. 2004) (citing 40 C.F.R. § 1502.1). An EIS is NEPA's "chief tool" and is "designed as an 'action-forcing device to [e]nsure that the policies and goals defined in the Act are infused into the ongoing programs

and actions of the Federal Government.'" *Or. Natural Desert Ass'n,* 531 F.3d at 1121 (quoting 40 C.F.R. § 1502.1).

An EIS must identify and analyze the direct, indirect, and cumulative effects of the proposed action. This requires more than "general statements about possible effects and some risk" or simply conclusory statements regarding the impacts of a project. *Klamath Siskiyou Wildlands Center v. BLM,* 387 F.3d 989, 995 (9th Cir. 2004) (citation omitted); *Oregon Natural Resources Council v. BLM,* 470 F.3d 818, 822-23 (9th Cir. 2006). Conclusory statements alone "do not equip a decisionmaker to make an informed decision about alternative courses of action or a court to review the Secretary's reasoning." *NRDC v. Hodel,* 865 F.2d 288, 298 (D.C. Cir. 1988).

NEPA also requires BLM to ensure the scientific integrity and accuracy of the information used in its decision-making. 40 CFR § 1502.24. The regulations specify that the agency "must insure that environmental information is available to public officials and citizens before decisions are made and before actions are taken. The information must be of high quality. Accurate scientific analysis, expert agency comments, and public scrutiny are essential." 40 C.F.R. § 1500.1(b). Where complete data is unavailable, the EIS also must contain an analysis of the worst-case scenario resulting from the proposed project. *Friends of Endangered Species v. Jantzen,* 760 F.3d 976, 988 (9th Cir. 1985) (NEPA requires a worst case analysis when information relevant to impacts is essential and not known and the costs of obtaining the information are exorbitant or the means of obtaining it are not known) *citing Save our Ecosystems v. Clark,* 747 F.2d 1240, 1243 (9th Cir. 1984); 40 C.F.R. § 1502.22.

As detailed below, the DEIS fails to comply with NEPA in several key areas. Overall, that the FSA/DEIS provides incomplete information and appears to have been prepared in a rush rather than to be the result of adequate analysis and research regarding impacts to the environment. Moreover, the DEIS fails to meet the requirements for sufficient information in many ways and fails to include any explanation for the missing information or analysis of why it could not be obtained.

As just one example, the citation to "San Bernardino County 2007" at 4.12-72 regarding identification of archeological sites is a reference to the following "San Bernardino County, 2007 [Citation from Aspen's canned cumulative analysis]" FSA/DEIS at 4.12-94 (highlighting in original). Indeed, the FSA/DEIS appears to rely heavily on "canned" analysis and conclusory statements and many critical issues have not been fully identified and analyzed in the FSA/DEIS. Moreover not all of the references are readily available and in several instances the FSA/DEIS relies on personal communications without any documentation for critical assumptions such as the success of desert tortoise translocation, ignoring other data and scientific evidence. For example, the FSA states "Mortality for translocated desert tortoise has been estimated at approximately 15 percent (Sullivan 2008)." FSA/DEIS 6.2-49. The reference given is "Sullivan, C. 2008. Personal communication between Susan Sanders and Charles Sullivan, Bureau of Land Management. Wildlife Biologist, Needles Office. Meeting on November 5, 2008." No other references are discussed or provided for this critical issue. In contrast, as the Center pointed out to the Staff in our comments dated July 8, 2009, the actual mortality data from the recent translocations at Fort Irwin was over 22% in just the first year. It does not appear that the BLM

had sufficient time or made sufficient effort to obtain current information or to accurately address the issue of mortality to the desert tortoise from translocation as well as many other issues. Similarly, the FSA/DEIS cites "Jaeger 2009" for several key conclusions regarding impacts to bighorn sheep (FSA/DEIS at 6.2-46, 6.2-89), however the is no listing in the references for this citation nor is there any other information provided as to the basis of these conclusions which are stated generally to be based on "a review of the literature." The FSA/DEIS does not describe whether any surveys were conducted for bighorn or sign, the methodology and results of such surveys if any, and if no surveys were conducted the reason for that omission. Moreover, for other statements and conclusions in the FSA/DEIS no references or source material is provided at all. *See, e.g.,* FSA/DEIS at 6.9-36 (conclusions with no references or analysis regarding impacts on seeps and springs in Clark Mountains), 6.9-45 (same).

These examples show a lack of attention to detail in preparing the DEIS and in consideration of the proposed project as well. When BLM revises the DEIS, as it must, the Center hopes and expects that BLM will remedy the errors noted as well as provide a more considered analysis of the impacts of the proposed project.

A. Purpose And Need and Project Description are Too Narrowly Construed and Unlawfully Segment the Analysis

1. Purpose and Need:

Agencies cannot narrow the purpose and need statement to fit only the proposed project and then shape their findings to approve that project without a "hard look" at the environmental consequences. To do so would allow an agency to circumvent environmental laws by simply "going-through-the-motions." It is well established that NEPA review cannot be "used to rationalize or justify decisions already made." 40 C.F.R. § 1502.5; *Metcalf v. Daley*, 214 F.3d 1135, 1141-42 (9th Cir. 2000) ("the comprehensive 'hard look' mandated by Congress and required by the statute must be timely, and it must be taken objectively and in good faith, not as an exercise in form over substance, and not as a subterfuge designed to rationalize a decision already made.") As Ninth Circuit noted an "agency cannot define its objectives in unreasonably narrow terms." *City of Carmel-by-the-Sea v. U.S. Dept. of Transportation*, 123 F.3d 1142, 1155 (9th Cir. 1997); *Muckleshot Indian Tribe v. U.S. Forest Service*, 177 F. 3d 900, 812 (9th Cir. 1999). The statement of purpose and alternatives are closely linked since "the stated goal of a project necessarily dictates the range of 'reasonable' alternatives." *City of Carmel*, 123 F.3d at 1155. The Ninth Circuit recently reaffirmed this point in *National Parks Conservation Assn v. BLM*, 586 F.3d 735, 746-48 (9th Cir. 2009) (holding that "[a]s a result of [an] unreasonably narrow purpose and need statement, the BLM necessarily considered an unreasonably narrow range of alternatives" in violation of NEPA).

The purpose behind the requirement that the purpose and need statement not be unreasonably narrow, and NEPA in general is, in large part, to "guarantee[ ] that the relevant information will be made available to the larger audience that may also play a role in both the decision-making process and the implementation of that decision." *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989). The agency cannot camouflage its analysis or avoid robust public input, because "the very purpose of a draft and the ensuing comment period is to

elicit suggestions and criticisms to enhance the proposed project." *City of Carmel-by-the-Sea*, 123 F.3d at 1156. The agency cannot circumvent relevant public input by narrowing the purpose and need so that no alternatives can be meaningfully explored or by failing to review a reasonable range of alternatives.

The BLM purpose and need states the "purpose of the proposed action is to approve, approve with modifications, or disapprove ROW applications" (referring to the three separate applications which make up the proposed project) and also states that the "need for the action has its basis in Federal orders and laws that require government agencies to evaluate energy generation projects and facilitate the development of renewable energy sources." FSA/DEIS at 2-7. The FSA/DEIS notes that an amendment to the CDCA Plan is needed in order to approve the project but does not clearly identify the plan amendment as a part of the project being evaluated. Rather, the DEIS states: "The BLM has determined that the proposed solar project and associated ROW would require an amendment to the CDCA Plan (Plan). The BLM will also consider the amendment of the CDCA Plan *to allow for the project.*" FSA/DEIS at 2-7 (emphasis added). As a result, BLM's purpose and need is very narrowly construed to the proposed project itself and an amendment to the Plan *for the project only*. The purpose and need provided in the DEIS is impermissibly narrow under NEPA for several reasons, most importantly because it foreclosed meaningful alternatives review in the DEIS. *See* FWS/DEIS at 4-1 and discussion below regarding alternatives. Because the purpose and need and the alternatives analysis are at the "heart" of NEPA review and affect nearly all other aspects of the EIS, on this basis and others, BLM must revise and re-circulate the DEIS.

The DOE purpose and need statement provides:

> The EPAct of 2005 established a Federal loan guarantee program for eligible energy projects that employ innovative technologies. Title XVII of the EPAct of 2005 authorizes the Secretary of Energy to make loan guarantees for a variety of types of projects, including those that "avoid, reduce, or sequester air pollutants or anthropogenic emissions of greenhouse gases, and employ new or significantly improved technologies as compared to commercial technologies in service in the United States at the time the guarantee is issued".
>
> The two purposes of the loan guarantee program are to encourage commercial use in the United States of new or significantly improved energy-related technologies and to achieve substantial environmental benefits. The purpose and need for action by DOE is to comply with its mandate under EPAct by selecting eligible projects that meet the goals of the Act.

FSA/DEIS at 2-8. As the applicant admits the proposed project is experimental at the scale proposed: the applicant's objective is to "to demonstrate the technical and economic viability of Bright Source's Technology in a commercial-scale project." FSA/DEIS at 2-5. Thus, the proposed project appears to meet the DOE criteria because it is admittedly "new" — indeed, experimental — technology at the proposed scale, and the applicant hopes that it will be an improvement over other commercial technologies. However, by that same token, the FSA/DEIS fails to address the experimental nature of the project including the likelihood of success (or

failure) and the consequences of failure (including technological failures[5] and financial failures) and the full extent of the likely resulting impacts to public lands.

In discussing the cumulative scenario, the DOE loan guarantee program is also described as one of the incentive programs for funding renewable energy projects:

> Example[s] of incentives for developers to propose renewable energy projects on private and public lands in California, Nevada and Arizona, include the following:
>
> • U.S. Treasury Department's Payments for Specified Energy Property in Lieu of Tax Credits under §1603 of the American Recovery and Reinvestment Act of 2009 (Public Law 1115) - Offers a grant (in lieu of investment tax credit) to receive funding for 30% of their total capital cost at such time as a project achieves commercial operation (currently applies to projects that begin construction by December 31, 2010 and begin commercial operation before January 1, 2017).
>
> • U.S. Department of Energy (DOE) Loan Guarantee Program pursuant to §1703 of Title XVII of the Energy Policy Act of 2005 - Offers a loan guarantee that is also a low interest loan to finance up to 80% of the capital cost at an interest rate much lower than conventional financing. The lower interest rate can reduce the cost of financing and the gross project cost on the order of several hundred million dollars over the life of the project, depending on the capital cost of the project.

FSA/DEIS at 5-3 to 5-4.

The Center is well aware that deadlines for funding, particularly for the American Recovery and Reinvestment Act ("ARRA") funds, have driven the pace of the environmental review for this project and, while we support such funding mechanisms, deadlines cannot be used as an excuse for rushed and inadequate NEPA review. The BLM and DOE must be concerned with the adequate NEPA review and even if the agencies can properly have an objective of *timely* approval of projects they cannot properly have as purpose and need of the project a *rushed* inadequate environmental impact review.

Moreover, in its discussion of the need for renewable energy production the FSA/DEIS fails to address risks associated with global climate change in context of including both the need for climate change mitigation strategies (e.g., reducing greenhouse gas emissions) and the need for climate change adaptation strategies (e.g., conserving intact wild lands and the corridors that connect them). All climate change adaptation strategies underline the importance of protecting intact wild lands and associated wildlife corridors as a priority adaptation strategy measure.

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[5] As the BLM is aware, a fire at a solar facility in Daggett in 1999 did extensive damage. While that plant included some different features, technological failures, including those leading to fire, remain a concern *See, e.g.,* video at http://www.failure-analysis-consultant.com/assets/solarexplosion.html

As the FSA/DEIS admits, building the proposed project at the proposed location "would have major impacts to the biological resources of the Ivanpah Valley, substantially affecting many sensitive plant and wildlife species and eliminating a broad expanse of relatively undisturbed Mojave Desert habitat." (FSA/DEIS p. 1-17), including, "Permanent loss of 4,073+ acres of Mojave creosote scrub and other native plant communities, including approximately 6,400 barrel cacti; permanent loss of cover, foraging, breeding habitat for wildlife; habitat fragmentation and loss of connectivity for terrestrial wildlife; disturbance/dust to nearby vegetation and wildlife; increased predation due to increased raven/predator presence; spread of non-native invasive weeds; and direct, indirect, cumulative impacts to special status plant species." (FSA/DEIS p. 6.2-72)

The habitat fragmentation, loss of connectivity for terrestrial wildlife, and introduction of predators and invasive weed species associated with the proposed project in the proposed location are contrary to an effective climate change adaptation strategy that the agencies also claim to support. Siting the proposed project in the proposed location in Ivanpah Valley could undermine a meaningful climate change adaptation strategy with a poorly executed climate change mitigation strategy. The way to maintain healthy, vibrant ecosystems is not to fragment them and reduce their biodiversity.

2. *Project Description and Segmentation:*

NEPA's implementing regulations state that agencies should consider similar, reasonably foreseeable actions together in the same environmental review document when the actions "have similarities that provide a basis for evaluating their environmental consequences together, such as common timing or geography," and the "best way to assess adequately [their] combined impacts [...] or reasonable alternatives" is to consider them together. 40 C.F.R. § 1508.25(a)(C). It is important for federal agencies to consider connected actions together in a single NEPA process as opposed to segmenting review. *Daly v. Volpe*, 514 F.2d 1106, 1110 (9th Cir. 1975) (where actions are interconnected in terms of fulfilling a joint purpose it may be necessary to conduct a single NEPA review).

Here, the BLM should not proceed any further in the NEPA process for the proposed project without an analysis the direct and indirect impacts of the proposed project in conjunction with the proposed Eldorado-Ivanpah transmission line upgrade and substations that are *necessary for this proposed project* as well as the other proposed projects that will also connect to the same transmission line upgrade and substations. At minimum, the BLM should consider all of the impacts of the proposed project, along with the transmission upgrade and substations, and the two Silver State projects that are also on the so called "fast track" as direct impacts of a connected project. Even if these significant impacts are described as indirect effects or "secondary" or "induced" effects attributable to the proposed project and the necessary transmission line upgrade, the need for adequate coordinated environmental review is no less. *See City of Davis v. Coleman*, 521 F.2d 661 (9th Cir. 1975) (requiring agency to prepare an EIS on effects of proposed freeway interchange on a major interstate highway in an agricultural area and to include a full analysis of both the environmental effects of the exchange itself and of the development potential that it would create). By failing to coordinate this NEPA process with the

approval process for all of the connected actions BLM may undermine full and fair public review of the impacts of the project in violation of NEPA. BLM must disclose and consider all of the related projects' significant impacts together. To do otherwise would be unlawful. Cumulative analysis is not sufficient where projects are connected actions.

In particular, the BLM should consider together the additive impacts to biological resources, including the desert tortoise and its habitat, from the proposed solar projects and the proposed transmission line and substations to ensure that the true extent of impacts are fully disclosed and analyzed. BLM should not treat this critical analysis as a cumulative impacts question alone. Because the currently proposed projects are linked and interdependent they should be evaluated together under NEPA. For example, each of these projects will have significant direct impacts on desert tortoise populations in the Northeastern Mojave Recovery Unit. BLM must look at those impacts in a comprehensive way that would allow it to formulate meaningful alternatives that could avoid many of the impacts of these linked projects and where impacts remain that cannot be avoided through alternatives, provide for comprehensive minimization and mitigation measures that will ensure that impacts to this recovery unit are appropriately mitigated. Ultimately, BLM must ensure that the approval of these linked projects does not impair the recovery of the desert tortoise populations in the Northeastern Mojave Recovery Unit.

The Project Description may also (perhaps inadvertently) mislead the public by its characterization of the project as a 400 MW "nameplate" or "nominal". While the DEIS admits that the project capacity is most likely to be 28%. FSA/DEIS at 6.1-65 (Greenhouse Gas Table 3, note c). This means that the actual output of energy from the project would likely be closer to 112 MW. Moreover, the Project Description and the DEIS as a whole fail to account for other power losses including line losses during hot days which can be significant. Because an accurate project description is vital to a fair comparison of alternatives, the DEIS should have more clearly discussed the capacity factor and other potential energy losses so that the actual output of this proposed project could be compared to similar projects.

B. The DEIS Does Not Adequately Describe Environmental Baseline

BLM is required to "describe the environment of the areas to be affected or created by the alternatives under consideration." 40 CFR § 1502.15. The establishment of the baseline conditions of the affected environment is a practical requirement of the NEPA process. In *Half Moon Bay Fisherman's Marketing Ass'n v. Carlucci*, 857 F.2d 505, 510 (9th Cir. 1988), the Ninth Circuit states that "without establishing . . . baseline conditions . . . there is simply no way to determine what effect [an action] will have on the environment, and consequently, no way to comply with NEPA." Similarly, without a clear understanding of the current status of these public lands BLM cannot make a rational decision regarding proposed project. *See Center for Biological Diversity v. U.S. Bureau of Land Management, et al.*, 422 F. Supp. 2d 1115, 1166-68 (N.D. Cal. 2006) (holding that it was arbitrary and capricious for BLM to approve a project based on outdated and inaccurate information regarding biological resources found on public lands).

The DEIS fails to provide adequate baseline information and description of the

environmental setting in many areas including the status of the desert tortoise and other sensitive and rare plant and animal communities and even the most basic information regarding the climate of this area.

The desert tortoise is protected under the federal Endangered Species Act (55 Fed. Reg. 12178 (1990)) and the California Endangered Species Act (August 3, 1989), is the California State reptile, and is sorely in need of additional protections to stem population declines due to ongoing threats. These issues should have been fully explored in the baseline discussion. Although the DEIS admits that the "area provides high quality habitat for this species, with low levels of disturbance and high plant species diversity (CDFG 2008a). The desert tortoise population in this part of the Ivanpah Valley is also unique because it is the highest elevation at which this species is known to reside in the state (CDFG 2008)." The DEIS briefly mentions the current status of the species but does not clarify the need for additional protective measures to ensure recovery.

The DEIS also uses the land use designation as a way of minimizing the importance of this area for tortoise recovery but fails to explain the history of the current designation. Prior to the desert tortoise being listed as a threatened species, the BLM recognized the habitat in the project site as "Category 1" habitat, indicating it was the highest quality for desert tortoise. The on-the-ground habitat has not changed for the desert tortoise on the project site, substantiated by the relative density of the animals on the project site. Post listing in 1994, the Fish and Wildlife Service published a Recovery Plan for this threatened species that identified the Desert Wildlife Management Areas ("DWMA") that needed to be established as desert tortoise reserves and should be protected from known threats. The BLM codified a majority of the DWMA areas in the Northern and Eastern Recovery Unit in California through the establishment of DWMA's in the Northern and Eastern California Plan ("NEMO")[6]. However, the agency failed to include the recommendations of the Desert Tortoise Recovery Plan[7] for the Ivanpah DWMA, which included the northern Ivanpah Valley north of the Interstate 15. The proposed project is within the boundaries of this critical recovery area for the desert tortoise that, unfortunately, the BLM has to date failed to adequately protect.

The baseline descriptions in the DEIS are similarly inadequate for other species including birds, bighorn sheep, and late-summer and fall blooming plants. Indeed, the fact that there *are* significant late-summer and fall rains is almost completely absent from the document. *But see* FSA/DEIS at 6.2-27 (discussing gila monster activity after summer rains). Although there is much discussion of the high "solarity" of the area, nowhere in the DEIS does the BLM disclose that the area is subject to summer rain and has far more cloud cover than many other areas of the California desert due to its proximity to the Colorado river. Indeed, the project applicant was unaware of the extent of clouds at the site which they now estimate to be up to 700 hours per year, approximately 10% of the operating time, and estimate to impact energy production by approximately 5%.[8] Similarly, the DEIS fails to reveal that the site is shadowed by the Clark Mountains and the mountains in the Stateline Wilderness which cut off sunlight late in the day in

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[6] Northern and Eastern Mojave Plan 2002

[7] Desert Tortoise Recovery Plan (1994) at pg. 41.

[8] *See* CEC Hearing Transcript January 14, 2010 at 7-11.

both summer and winter.[9] As a result, any comparison of alternatives sites based on solarity was incomplete and flawed. *See* FSA/DEIS at 4-10 (discussing need for alternative sites to have "appropriate solarity"). It is impossible to tell how many potentially viable alternative sites were rejected based on having lower "solarity" than the Ivanpah site but it is certain that such analysis was fatally flawed.

As discussed below, because of the deficiencies of the baseline data for the proposed project area, the DEIS fails to adequately describe the environmental baseline. Many of the rare and common but essential species and habitats have incomplete and/or vague on-site descriptions that make determining the proposed project's impacts difficult at best. Some of the rare species/habitats baseline conditions are totally absent, therefore no impact assessment is provided either. A supplemental document is required to fully identify the baseline conditions of the site, and that baseline needs to be used to evaluate the impacts of the proposed project.

C. Failure to Identify and Analyze Direct and Indirect Impacts to Biological Resources

The EIS fails to adequately analyze the direct, indirect, and cumulative impacts of the proposed project on the environment. The Ninth Circuit has made clear that NEPA requires agencies to take a "hard look" at the effects of proposed actions; a cursory review of environmental impacts will not stand. *Idaho Sporting Congress v. Thomas*, 137 F.3d 1146, 1150-52, 1154 (9th Cir. 1998). Where the BLM has incomplete or insufficient information, NEPA requires the agency to do the necessary work to obtain it where possible. 40 C.F.R. §1502.22; *see National Parks & Conservation Ass'n v. Babbitt,* 241 F.3d 722, 733 (9 th Cir. 2001) ("lack of knowledge does not excuse the preparation of an EIS; rather it requires [the agency] to do the necessary work to obtain it.")

Moreover, BLM must look at reasonable mitigation measures to avoid impacts in the DEIS but failed to do so here. Even in those cases where the extent of impacts may be somewhat uncertain due to the complexity of the issues, BLM is not relieved of its responsibility under NEPA to discuss mitigation of reasonably likely impacts at the outset. Even if the discussion may of necessity be tentative or contingent, NEPA requires that the BLM provide some information regarding whether significant impacts could be avoided. *South Fork Band Council of Western Shoshone v. DOI* , 588 F.3d 718 , 727 (9th Cir. 2009).

1. Tortoise

The desert tortoise has lived in the western deserts for tens of thousands of years. In the 1970's their populations were noted to decline. Subsequently, as mentioned above, the species was listed as threatened by the State of California in 1989 and by the U.S. Fish and Wildlife Service in 1990, which then issued a Recovery Plan for the tortoise in 1994. The U.S. Fish and Wildlife Service is in the process of updating the Recovery Plan, and a Draft Updated Recovery

[9] Revised Testimony of Curtis Bradley, dated December 18, 2009 submitted to the CEC on December 22, 2009

Plan was issued in 2008, however it has not been finalized. Current data indicate a continued decline across the range of the listed species[10] despite its protected status and recovery actions.

The original and draft Updated Recovery Plans both recognize the uniqueness of the northern Ivanpah Valley population in California. This particular subpopulation of tortoise are part of the Northeastern Recovery unit. While the Northeastern Recovery Unit is located primarily in Nevada, a small but significant part of the Recovery Unit dips down into California in the Ivanpah Valley[11]. The Recovery Plan recognizes that the Northeastern Recovery Unit has "three mtDNA haplotypes are found in this recovery unit, but they exhibit low allozyme variability with relatively little local differentiation"[12] indicating that the tortoises within this Recovery Unit are genetically distinct from other Recovery Unit populations. Recent population genetics studies[13] have further confirmed that the desert tortoise population in the Ivanpah Valley on and adjacent to the project site are distinctly genetically different from tortoises elsewhere within the Northeastern Recovery Unit, and very genetically different from tortoises in other adjacent Recovery Units. This finding adds weight to the idea that a conservative approach needs to be applied to management of the desert tortoise in the Ivanpah Valley. While the population of the Northeastern Recovery Unit may be widespread through four states, the part of the population within the boundaries of the California Desert Conservation Area where this project is located is very limited and genetically unique. Yet, the DEIS fails to identify and consider the localized impact to this genetically rare portion of the population on the project site.

Moreover, as discussed in detail below, the proposed translocation plan is not sufficiently thought through and fails to consider all of the likely impacts to the tortoise that are proposed to be moved as well as the host tortoises, or how future projects in the area may also affect these same animals and the population in the area. NEPA mandates consideration of the relevant environmental factors and environmental review of "[b]oth *short- and long-term* effects" in order to determine the significance of the project's impacts. 40 C.F.R. § 1508.27(a) (emphasis added). BLM has clearly failed to do so in this instance with respect to the impact to the tortoise.

2. Bighorn

The DEIS fails to comprehensively assess the impacts from of the proposed project on the local desert bighorn sheep population. Without this basic information about the use of the proposed project site and adjacent areas by bighorn it is impossible to assess the extent of the impacts to the bighorn population in this area from the proposed project.[14]

The proposed project will clearly cause the loss of foraging habitat on alluvial fans and in washes which is known to be important to bighorn. Even if such habitat may only be used

[10] Doak et al. 1994, USFWS 2009
[11] Desert Tortoise Recovery Plan (1994) at pg. 41.
[12] Desert Tortoise Recovery Plan (1994) at pg. 21.
[13] Murphy et al. 2007
[14] The Center sponsored testimony from bighorn expert Mark Jorgensen as part of the CEC hearings. That testimony is attached and incorporated by reference herein. Testimony of Mark C. Jorgensen dated December 14, 2009 and at hearing on January 11, 2010.

during certain seasons it can be critical to survival of bighorn. Without site-specific data on the details of habitat use patterns of the bighorn in the area, the DEIS cannot properly assess the importance of the alluvial fan and wash habitat to the bighorn population or the impact of its loss on the population.

The proposed project may affect foraging areas and movement corridors for bighorn, as well as fragmenting currently intact habitat. The DEIS proposes a wildlife drinker as a mitigation measure. However, the DEIS provides no information documenting the need for the proposed wildlife drinker. Is the Clark range lacking in available water sources accessible to bighorn sheep? Moreover there is no discussion of how, if at all, this mitigation proposal could actually mitigate for the loss of forage and movement areas and fragmentation of habitat by the construction of the proposed solar project on over 4,000 acres.

For other rare species addressed in the document the mitigation involves the purchase and future protection of an equal amount of acreage or more that is being impacted. No such suggestion is listed for bighorn, although even the purchase of lands elsewhere will do nothing for the movement corridor between the Clarks and the State Line Hills.[15] The mitigation measure proposed does not relate to the loss of alluvial fan foraging habitat and movement corridor where the Project would be constructed.

Additional field study needs to be conducted by a knowledgeable researcher in the Clark Mountains and on the proposed solar site, and probably on the State Line range as well. Absent any real information in the field, any suggested mitigation or perceived impacts are pure conjecture.

We also note that similar concerns were raised in a letter dated October 27, 2009, where the California Department of Fish and Game[16] provided some proposed minimization measures which were not included in the DEIS. Although these measures may not be sufficient to mitigate the impacts to a less than significant level, they could help minimize and reduce some of the impacts to bighorn and it is hard to understand why they were not discussed in the DEIS. The measures include "moving back the fence at the base of the mountain range, not using barbed wire fencing in this location, checking known big horn sheep springs data periodically to ensure the Project wells are not adversely impacting sheep watering locations, and ensuring invasive plants have not taken over the springs are valid minimization measures that should be evaluated."

3. Plants and Plant Communities

Rare and Special Status Plants

Several rare plants were found on the proposed project site including the Rusby's mallow

[15] Epps et al. 2007; Epps et al. 2004.

[16] CDFG 2009 - Letter from Kevin Hunting 10/27/09 "Comments on the Preliminary Staff Assessment and Recommendations for the Final Staff Assessment for the Ivanpah Solar Electric Generating System (CEC Docket # 07-AFC-5)

which is a BLM sensitive species.[17] Management of special status species (and indeed all rare species) on BLM lands should focus on ensuring long term survival and recovery in order to prevent the need for future listings. Nothing in the DEIS shows that the BLM took into consideration these critical management concerns. *See* BLM Maunal 6840.2.C (Implementation) ("BLM shall manage Bureau sensitive species and their habitats to minimize or eliminate threats affecting the status of the species or to improve the condition of the species habitat, by . . . [e]nsuring that BLM activities affecting Bureau sensitive species are carried out in a way that is consistent with its objectives for managing those species and their habitats at the appropriate spatial scale . . . [and] [c]onsidering ecosystem management and the conservation of native biodiversity to reduce the likelihood that any native species will require Bureau sensitive species status").

The Center incorporates by reference here the comments and information submitted by the California Native Plant Society on issues related to rare and special status plants. As CNPS and others have shown, the DEIS failed to adequately analyze the impacts that the proposed project would have on rare and special status plant species including direct, indirect and cumulative impacts to these plants and failed to adequately identify and evaluate potential alternatives that would avoid or minimize the impacts of the project on these species.

Another major failure of the DEIS is the lack of late summer/early fall-flowering plant surveys on the proposed project site. Approximately 40% of the plant taxa in Ivanpah Valley flower in late summer/early fall due to its location and bimodal precipitation regime. Twenty to twenty-five special status plants that have potential to occur on the site flower in the summer/fall. The spring surveys would fail to document most of these summer/early fall-flowering rare plants on site.

While the spring surveys for rare plants were rigorous, as identified in the DEIS, absent adequate precipitation (as in the 2007 surveys) many fewer rare plants were documented than in the subsequent much moister year of 2008. Additionally because of the vagaries of precipitation in the Mojave desert, surveys should be performed over a number of years during both the spring and summer/fall flowering seasons in order to maximize the probability of identifying all special status species that occur on the project site. Projects of this size and potential impact typically include more than two years of surveys. Without an accurate inventory of plant taxa that occur on site, it is not possible to fully assess project impacts to special status plants and therefore meaningful mitigation cannot be developed.

The Eastern Mojave Desert is a botanical frontier where in the past few years alone, a number of very significant botanical finds have occurred and more are to be expected. For example, at least five species previously undocumented within the CDCA boundaries have been documented in the last few years directly on or adjacent to the project site. Additionally, these species that are found on the "edges" of their range are incredibly important for species

[17] Rusby's desert-mallow (*Sphaeralcea rusbyi var. eremicola*) is a 1B plant which is protected by BLM as a special status species. *See* BLM, Instruction Memorandum No. CA-2009-013, Clarification of 6840 With Respect to Special Status Plant Species dated March 18, 2009.

persistence[18] especially in light of global climate change.[19]

Because of the lack of comprehensive surveys, the impact analysis can not evaluate the true impacts to rare plants from the proposed project.

We are concerned that the impacts to the documented on-site rare plants have been determined to be significant, but no efforts have been made to further reduce these impacts by developing alternatives within and outside of the Ivanpah Valley. We believe there are additional sites for the proposed project that have far fewer impacts to rare plant species (and other species), yet they have not been fully evaluated (see discussion in Alternatives section).

Plant Communities

Several rare plant communities may be present on site including creosote bush-white bursage scrub associations occurring with *Pleuraphis rigida* (Big galleta grass), and "those with a diverse shrub layer are G1/S1" (DEIS at pg. 566). The G1/S1 (Global/ State) status rank means that the plant community is considered globally/state uncommon with "fewer than 6 viable occurrences worldwide/statewide, and/or up to 518 hectares" (DEIS at pg. 45). The Ivanpah site plant community has both galleta grass and a diverse shrub layer, suggesting that these rare plant communities do indeed occur on the proposed project site. However the DEIS fails to identify the presence of these plant communities, quantify the acreage on site, avoid impacts or analyze the impacts from the proposed project, and if impacts are unavoidable, mitigate for any impacts.

Additionally, the DEIS recognizes that the proposed project site supports very few non-native plant species (weeds) (DEIS at pg.6.2-9), indicating that the site has a very low level of disturbance (weed occurrence is directly correlated with disturbance[20]). While the proposed Weed Management Plan[21] will likely minimize the spread of weeds across the site and potentially beyond if implemented properly, the fact remains that due to the fragmentation of habitat from road and fence building and general site activities the project will likely be a seed source for weeds to disperse into the surrounding natural area. The relatively low occurrence of weeds is another factor that BLM should have more fully considered in the DEIS in the context of the planning area as a whole. Areas with low weed occurrence are increasingly rare in the California desert and the remaining areas should be protected.

4. Migratory and Other Birds , Golden Eagles, and Burrowing Owls

Birds

As the DEIS notes, the proposed project area is rich in bird resources. Clark Mountain, which is directly adjacent to the site, is noted as an Important Bird Area[22]. In fact, two very rare

[18] Leppig and White 2006
[19] Kelly and Goulden 2008
[20] Brooks 1999; Brooks and Berry 2006
[21] CH2MHill 2008a. 2008-08-12_DATA_RESPONSE_SET_1F_TN-47476
[22] Audubon IBA Desert Mountains

birds in California, the Whip-poor will (Arizona race) and the hepatic tanager are known to successfully nest on Clark Mountain. Birds migrate to Clark Mountain from the Colorado River Basin[23] – a route that goes over the project site. The DEIS fails to evaluate the impact to this migratory pathway from the proposed project.

The DEIS recognizes the potential impact to diurnal birds from flying into the focused sun rays and getting burned (DEIS at pg. 6.2-65). However the DEIS fails to address the additional fatalities that have been documented to occur from birds running into mirrors[24]. Adjacent to the proposed project site is the golf course, which includes several water features. This adjacent land use attracts migratory and resident birds based on the resources present – an oasis in the desert. The DEIS does not quantify the number of birds (rare, migratory or otherwise) that use/traverse the project site (for example a mean daily count), nor does it evaluate the impact to birds. McCrary[25] estimated 1.7 birds deaths per week on a 32 ha site with one 86 m tower. The proposed project site is approximately 1644 ha (over 50 times larger) with seven 95 m towers and five 140 m towers. Lacking baseline data of mean daily count of birds on the project site, analysis of the impacts to birds is impossible. Based on the existing literature, the impact may be significant.

Migratory birds were noted to occur on the proposed site (DEIS at pg. 6.2-15). Clearly the site is within a migratory pathway and the migratory elevation is a key issue that needs further analysis. Mirrors and towers within migratory elevations will create impacts to migratory birds. These impacts could be avoided or minimized if mirrors and towers are properly cited. NEPA requires that impacts be first avoided and minimized. These analyses needed to be done prior to the DEIS being produced and still need to be done, because detailed surveys and analyses are the basis for the evaluation of impacts to biological resources as required by NEPA. The failure to provide the baseline data on which to base impact assessment violates NEPA. Failure to be able to analyze impacts is not only a NEPA violation, but for migratory birds, may also lead to a violation of the Migratory Bird Treaty Act, 16 U.S.C. §§ 703 -711, because migratory birds may be "taken" if the proposed project is constructed.

Additionally, some kind of "holding basins" will be present on site. *See* FSA/DEIS at 6.13-5. The DEIS indicates that project site would include 2 holding pods at each of the 3 power blocks – or 6 in total —40 feet x 60 feet x 6 feet deep water "holding basins". Id. In contrast the Biological Assessment indicates that only two ponds will be constructed.[26] Moreover, it is unclear if the holding basins are the same as the as the "evaporation pits" noted on Figure 5 in the project description (#15) in the DEIS. These may also be an attractive nuisance to birds as they migrate through the area, attracting them onto the project site during any time that the basins retain water. The DEIS is unclear about the amount of time water may be retained in these basins and no discussion of this infrastructure is identified in the biological section of the

[23] Audubon IBA Desert Springs
[24] McCrary 1986
[25] Ibid
[26] CH2MHill 2009b. Biological Assessment at pg. 2-24

DEIS, nor are impacts analyzed or minimization measures identified. [27] Examples of minimization could include requiring covered or contained infrastructure, which would not only eliminate bird (and other wildlife) attraction, but would reduce evaporation and therefore water use in this arid environment. Alternatively, the pools could be required to be emptied in a less than 24 hour period so they would not be an attractant to birds (including ravens).

Golden eagle

Golden eagles are documented to use proposed project site as a foraging (DEIS at 6.2-22) and are thought to nest in the adjacent Clark Mountains (DEIS at 6.2-23). The proposed mitigation measure BIO-17 proposes to reduce impacts to the species to less than significant levels, however the DEIS fails to present exactly how it will mitigate the loss of a substantial amount of foraging habitat for the golden eagle. The fact still remains that significant amounts of foraging habitat will decrease carrying capacity of the landscape and could result in a potential loss of habitat needed to support a nesting pair, which would impact reproductive capacity.

The DEIS fails to disclose the number of pairs of golden eagles that could be affected by the proposed project. 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[28]. Regardless of distance, a straightline 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[29]. The DEIS fails to discuss the potential impacts on nesting golden eagles in the Clark Mountains which is part of the Mojave National Preserve. Golden eagles use only a small subset of their home territories during nesting for foraging. These essential areas may include the proposed project site, however the DEIS does not analyze this important factor of nesting success. Additionally, the DEIS does not actually clearly analyze the impacts to and mitigations for the golden eagle under the Bald Eagle and Golden Eagle Protection Act, which prohibits, except under certain specified conditions, the take, possession, and commerce of such birds.

5. Gila Monster

Mitigation measure "Bio-11" for the banded Gila monster proposes relocation as the mitigation strategy if the lizard is encountered. Relocation of banded Gila monster has been shown to be an ineffective strategy[30]. Similar to desert tortoises, the Gila monsters try to return to their original sites despite relocation distances. Effective mitigation for this species needs to include strategies that will minimize mortality, not ensure it.

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[27] During the CEC hearings the project applicant's witness stated that the basins would likely be filled infrequently. When the BLM revises the DEIS as it must it should also provide additional information about the planned and potential use of the holding basins and any limitations that could be imposed to minimize impacts.

[28] Richardson and Miller 1997

[29] Camp et al. 1997; Richardson and Miller 1997

[30] Sullivan et al. 2004

6. Badger

Badgers were identified in the project area during surveys in 2007 (DEIS at pg. 6.2-45). Literature on the highly territorial badger indicates that badger home territories range from 340 to 1,230 hectares[31]. Therefore, the proposed project could displace *at least* one badger territory. While surveys prior to construction are clearly essential since badgers have been located on the site, relocation of badgers into suitable habitat may result "take". Relocation is likely to move relocated badgers into existing badger's territory. Studies need to be provided on both on- and off-site badger territories if animals are to be relocated in order to increase chances of persistence. At a minimum, the EIS should identify suitable habitat.

7. Insects

No scientific literature is available that quantitatively documents the impact of concentrated solar facilities on insects. However, information from a biological surveyor on the Daggett Solar 1 site indicates that diurnal insects including butterflies were impacted from the focused sunlight[32]. The DEIS completely fails to identify or address this important issue. The DEIS does note that many of the sensitive bird species are insectivores and rely on ample amounts of insects in their diet. Additionally, many of the resident and adjacent plant species including rare plants rely on insects for pollination. Clearly the impacts to insects will need to be analyzed in the recirculated DEIS including the effects on the secondary consumers (birds) and plants.

Based on the plants identified on site[33] and research and consultation with an eentomologist familiar with desert insects, rare insect species could occur on site[34]. Over twenty rare butterflies have host plants that occur on site including species of metalmarks, marble butterflies, skippers and small blue butterflies. Additionally the desert swallowtail (*Papilio polyxenes coloro*) and the Pahaska Skipper (*Hesperia pahaska martini*) have been documented in the general site vicinity[35]. No surveys were done to evaluate the insects that occur on site and the no analysis of impacts to those species of eliminating over 4,000 acres of habitat is provided. No analysis was done on the operation of the solar plant and its effects on the adjacent and migratory insects, some of which may be essential pollinators for the rare plants on and off the project site. Forseeable impacts include attraction of the species to the mirrors and focusing beams, and subsequent insect collisions and incineration.

8. Cryptobiotic soil crusts

The proposed project is located in the Mojave Desert Air Quality Management District

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[31] Long 1973, Goodrich and Buskirk 1998
[32] P. Flanagan, personal communication
[33] CH2MHill 2008b. Botanical Resources 2008-10-08_SUPPLEMENTAL_DATA_RESPONSES_1D TN-48188
[34] G. Pratt, personal communication
[35] http://butterfliesofamerica.com

area, and is already in non-attainment for PM-10 particulate matter[36]. The construction of the proposed project further increase emissions of these types of particles because of the disruption and elimination of potentially thousands of acres of well-developed cryptobiotic soil crusts. Cryptobiotic soil crusts are an essential ecological component in arid lands. They are the "glue" that holds surface soil particles together precluding erosion, provide "safe sites" for seed germination, trap and slowly release soil moisture, and provide CO_2 uptake through photosynthesis[37].

The proposed project site has well developed cryptobiotic soil crusts, which currently hold soils in place. The proposed project will disturb an unidentified portion of these soil crusts and cause them to lose their capacity to stabilize soils and trap soil moisture. The DEIS fails to provide a map of the soil crusts over the project site, and to present any avoidance or minimization measures. It is unclear how many acres of cryptobiotics soils will be affected by the project. The FEIS must identify the extent of the cryptobiotic soils on site and analyze the potential impacts to these diminutive, but essential desert ecosystem component as a result of this project.

9. Closure, Revegetation and Rehabilitation Plan

Desert lands are notoriously hard to revegetate or rehabilitate[38] and revegetation never supports the same diversity that originally occurred in the plant community prior to disturbance[39]. The task of revegetating over six square miles will be a Herculean effort that will require significant financial resources. In order to assure that the ambitious goals of the revegetation effort is met post project closure, it will be necessary to bond the project, so that all revegetation obligations will met and assured. The bond needs to be structured so that it is tied to meeting the specific revegetation criteria.

The project will cause permanent impacts to the on-site plant communities and habitat for wildlife despite "revegetation", because the agency's regulations based on the Northern and Eastern Mojave Plan's rehabilitation strategies[40] only requires 40% of the original density of the "dominant" perennials, only 30% of the original cover. Dominant perennials are further defined as "any combination of perennial plants that originally accounted cumulatively for at least 80 percent of relative density".[41] These requirements fail to truly "revegetate" the plant communities to their former diversity and cover even over the long term. The Closure Rehabiliation and Recovery Plan revegetation criteria are even less robust, requiring after 10 years only 12% cover, 0.40 diversity and 10 species richness[42]. Neither the agency's or project revegetation criteria require native annual species as a component of revegetation, despite the

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[36] http://www.mdaqmd.ca.gov/Modules/ShowDocument.aspx?documentid=1982
[37] Belnap 2003, Belnap et al 2003, Belnap 2006, Belnap et al. 2007.
[38] Lovich and Bainbridge 1999
[39] Longcore 1997
[40] BLM 2002
[41] Ibid
[42] CH2MHill 2009a. Draft Closure and Revegetation Plan. Data Response, Set K, TN-52208 at pg. 7-32

fact that native wildlife rely heavily on spring and fall annuals for survival[43]. For all these reasons, permanent impacts will occur to the site despite revegetation.

The plant species list for the project site shows much greater diversity than the twelve species identified as Seeds Targeted for Collection in Support of Revegetation[44]. The seed list needs to be greatly increased to capture the original diversity of both perennial and annual species. Enabling an accelerated successional process is appropriate and desirable, however, the plan should not rely on dispersal of late successional propagules over the six square mile area, but should instead include sequential seeding, where later successional species are introduced by seed after early successional species establishment. This strategy would encourage quicker re-establishment of late successional species throughout the site.

Revegetation Criteria

Revegetation criteria are essential as a method for assessing success of revegetation efforts. The revegetation criteria (Table 7-6 at pg. 7-32 of the Closure, Revegetation and Rehabiliation Plan) are a good start to assessing the success of the proposed revegetation effort. One important absent component is the annual flora. Admittedly tricky to monitor but essential to the landscape level integrity of the revegetated area, revegetation criteria need to be developed and included for the annual flora, based on trends in the cover and diversity of species over the 10 year monitoring period.

Because the actual proposed project site data revealed an elevational cline in shrub cover, density and richness (greater cover, density and richness at higher elevations than lower), the revegetation criteria needs to also reflect that elevational effect. Clarifications should also be made in the revegetation criteria to preclude future interpretations that the percent cover is the *total cover* of the perennial species on the ground (as opposed to a percent of the original cover) and the same concept must be clarified with the species diversity and richness.

At a minimum, all of the issues in Biological Resources Appendix B (FSA/DEIS at pg. 6.2-150- 6.2-164), should be incorporated into the final Closure, Revegetation and Rehabilitation Plan to help insure a more successful revegetation effort.

10. Fire Plan

Fire in desert ecosystems is well documented to cause catastrophic landscape scale changes[45] and impacts to the local species[46]. While the DEIS mentions the impacts of fire via the proliferation of nonnative weeds (DEIS at pg. 6.2-34 and pg. 6.2-63), it fails to adequately analyze the impacts of this issue on adjacent natural desert habitat especially in light of the fact that the proposed project relies on superheated liquids.

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[43] Jennings 2002, Shoemaker et al. 1976
[44] CH2MHill 2009a. Table 7.1at pg. 7-10 of the Closure, Revegetation and Rehabilitation Plan
[45] Brown and Minnich 1986, Lovich and Bainbridge 1999, Brooks 2000, Brooks and Draper 2006, Brooks and Minnich 2007
[46] Ducher 2009

The DEIS fails to adequately analyze the impact that an escaped on-site-started fire could have on the natural lands adjacent to the project site if it escaped from the site. The DEIS also fails to address the mitigation of this potential impact. Instead it defers it to the Worker Environmental Awareness Program (WEAP) and only requires "a discussion of fire prevention measures to be implemented by workers during project activities" (DEIS at pg. 6.2-102). A fire prevention and protection plan needs to be developed and required to preclude the escape of fire onto the adjacent landscape (avoidance), lay out clear guidelines for protocols if the fire does spread to adjacent wildlands (minimization) and a revegetation plan if fire does occur on adjacent lands originating from the project site (mitigation) or caused by any activities associated with construction or operation of the site even if the fire originates off of the project site.

11. Failure to Identify Appropriate Mitigation

Because the DEIS fails to provide adequate identification and analysis of impacts, inevitably, it also fails to identify adequate mitigation measures for the project's environmental impacts. "Implicit in NEPA's demand that an agency prepare a detailed statement on 'any adverse environmental effects which cannot be avoided should the proposal be implemented,' 42 U.S.C. § 4332(C)(ii), is an understanding that an EIS will discuss the extent to which adverse effects can be avoided." *Methow Valley*, 490 U.S. at 351-52. Because the DEIS does not adequately assess the project's direct, indirect, and cumulative impacts, its analysis of mitigation measures for those impacts is necessarily flawed. The DEIS must discuss mitigation in sufficient detail to ensure that environmental consequences have been fairly evaluated." *Methow Valley*, 490 U.S. at 352; *see also Idaho Sporting Congress*, 137 F.3d at 1151 ("[w]ithout analytical detail to support the proposed mitigation measures, we are not persuaded that they amount to anything more than a 'mere listing' of good management practices"). As the Supreme Court clarified in *Robertson*, 490 U.S. at 352, the "requirement that an EIS contain a detailed discussion of possible mitigation measures flows both from the language of [NEPA] and, more expressly, from CEQ's implementing regulations" and the "omission of a reasonably complete discussion of possible mitigation measures would undermine the 'action forcing' function of NEPA."

Although NEPA does not require that the harms identified actually be mitigated, NEPA does require that an EIS discuss mitigation measures, with "sufficient detail to ensure that environmental consequences have been fairly evaluated" and the purpose of the mitigation discussion is to evaluate whether anticipated environmental impacts *can be avoided. Methow Valley*, 490 U.S. at 351-52. As the Ninth Circuit recently noted: "[a] mitigation discussion without at least *some* evaluation of effectiveness is useless in making that determination." *South Fork Band Council of Western Shoshone v. DOI* , 588 F.3d 718 , 727 (9th Cir. 2009) (emphasis in original).

Here, the DEIS does not provide a full analysis of possible mitigation measures to avoid or lessen the impacts of the proposed project and therefore the BLM cannot properly assess the likelihood that such measures would actually avoid the impacts of the proposed project.

To the extent the DEIS discusses some mitigation measures, the proposal to "nest" mitigation measures undermines much of that discussion. The DEIS proposes to mitigate impacts

for desert tortoise by land acquisition and management, however, that same mitigation is proposed to also mitigate for several of the impacts to other rare species as well as impacts to surface waters (or waters of the State) through "nesting" of mitigation. While some of these mitigation issues pertain primarily to protections afforded by the State (i.e., for waters of the State) it is important to carefully analyze whether within that structure the BLM's proposed 1:1 mitigation for tortoise will adequately mitigate for other resources of these public lands that will be lost should the project be approved as proposed. It is possible that once the acquisition lands are identified and surveyed, this strategy could achieve mitigation for some aspects of the various impacts, however, it is unlikely that it will actually adequately mitigate for impacts to a number of the species, the loss of alluvial fan habitat, or all of the losses the waters of the State that will be potentially impacted by the proposed project. For example, if mitigation lands are acquired for conservation and they are good desert tortoise habitat, they still may not support the same suite of rare, sensitive plants, or similar alluvial fan habitat important to bighorn populations in order to effectively mitigate for the impacts of the proposed project on those resources. Very careful selection of mitigation lands will need to be done, and additional lands over and above the 1:1 ratio now proposed for desert tortoise by BLM maybe required in order to properly mitigate for the loss of other resources of these public lands that the proposed project will affect.

D. BLM Continues to Ignore the Best Available Science by Conflating Management Preferences with Requirements for Species Conservation and Recovery

The value of the habitat in the Northern Ivanpah Valley to the desert tortoise and its long term conservation and recovery is, unfortunately, not the same as BLM's preferred management strategy. The Desert Tortoise Recovery Plan identified this area as conservation habitat (*see* map at 41) and the Northern Ivanpah Valley Desert Tortoise Management Unit was classified as Category I in the CDCA plan and in the BLM's Desert Tortoise Habitat Management on Public Lands[47]. In adopting the NEMO Plan in 2002, the BLM excluded the Category I habitat in the Northern Ivanpah Valley from designation in a DWMA for management reasons having nothing to do with the quality of the habitat. According to the NEMO Plan:

> *Northern Ivanpah Valley Unit*
>
> The area located immediately north and west of Stateline (or Primm) was designated BLM Category I desert tortoise habitat but was not designated as critical habitat by USFWS. The area was not included in a DWMA because it is "relatively small" (29,110 acres), is separated from other desert tortoise populations in the NEMO Planning Area by I-15 and Ivanpah Dry Lake, and is undergoing substantial development pressures particularly adjacent to I-15. This recommendation was also consistent with the strategy for desert tortoise adopted by Federal agencies in Nevada. The Nevada strategy did not identify the northern Ivanpah Valley, as an area to be managed for desert tortoise recovery.

[47] BLM 1988

NEMO Plan FEIS, Appendix A, at A-4 (Note: "north" appears to be mistake as most of the area in questions is actually south of Primm). The BLM ignored the fact that although this population of tortoises is somewhat separated from those below I-15, it is not separated from the tortoise populations to the northeast within Nevada. In fact, connectivity has been maintained under I-15 through undercrossings and could be improved. Moreover, BLM ignored the fact that the tortoises in this area are part of a very small population of tortoises from the Northeastern Mojave Recovery Unit found in California.

Despite the scientific evidence based on genetics, morphology and behavior that the tortoise in this area are part of the Northeastern Mojave Recovery Unit[48], BLM in the NEMO Plan listed only recovery of the tortoise in the Eastern Mojave Recovery Unit as a goal of the Plan, at 1-3, and stated:

> The preferred alternative is to propose that USFWS modify recovery unit boundaries so that all of NEMO is part of the Eastern Mojave Recovery Unit. Currently a portion of the planning area is in the Northern and Eastern Mojave Recovery Unit, but it forms a cohesive unit with the rest of the Eastern Mojave Desert tortoise habitat. Strategies for the Northern and Eastern Mojave Recovery Unit are focused firstly in areas northeast of Las Vegas, and secondarily, in an area north of Nipton Road in an area of Nevada that is not adjacent to the state line.

NEMO Plan FEIS at 1-3, n. 6. However, the Recovery Unit boundaries are not based on adjacency but reflect distinct population segments of the desert tortoise that were determined based on "substantial geographic variation in genetic, morphological, ecological, physiological and behavioral traits." Recovery Plan at 19. These distinctions have been confirmed through genetic evidence as well.[49]

As a result of BLM's focus on management factors rather than tortoise recovery, after the adoption of the NEMO Plan the Northern Ivanpah Valley Unit area was reclassified the desert tortoise habitat "Category III" based on management considerations, not the quality of the habitat.

E. Impacts to Water Resources—Groundwater and Surface Water Impacts

1. Groundwater Impacts:

The FSA/DEIS fails to adequately address the hydrology of the groundwater basins that are proposed to be pumped by the applicant and the likely impacts to other area waters including surface waters. The estimate for groundwater recharge is not sufficiently supported in the FSA/DEIS and fails to take into account persistent drought as well as the likely effects of climate change in this area. The FSA/DEIS simply assumes there will be no impacts to springs utilized by wildlife in the surrounding mountains and wilderness areas, although no meaningful information regarding the basis of this conclusion is provided.

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[48] Desert Tortoise Recovery Plan, USFWS 1994

[49] Murphy et al. 2007

Although the FSA/DEIS does not provide meaningful baseline data on the groundwater regime in this area, the Center understands that this area may be connected to the Death Valley aquifer and others in Nevada which function in unique ways such that pumping down gradient can often cause impacts to springs and seeps in mountain areas far up stream, contrary to the conclusory statements in the FSA/DEIS.[50] Because the FSA/DEIS provides no basis for its statements and conclusions, it is impossible to discern whether staff has specific evidence regarding this aquifer and the connections between the area where the proposed ground water pumping would occur and the mountain springs were actually considered or whether staff is simply making assumptions about the functioning of the aquifer in this area. During the evidentiary hearings the CEC staff provided somewhat more information on the groundwater issues however there is still no evidence that the analysis in the FSA/DEIS adequately considered the impacts of long-term drought or climate change on the water resources in this area.

The FSA/DEIS also fails to adequately consider the cumulative impacts on water resources in this area – relying on assumptions regarding recharge that appear to be overstated—and failing to address long-term drought and climate change as well as the potential impacts to surface resources from cumulative groundwater extractions.

2. Surface Water Impacts:

The FSA/DEIS identifies impacts to surface drainages on the bajada/alluvial fan that would be destroyed by the project but fails to adequately address avoidance and minimization of these impacts. The FSA/DEIS also fails to provide any specific discussion of mitigation for these impacts—again deferring the plan to a later date. Moreover, the DEIS fails to adequately identify and assess the impacts that the loss of natural flow across the alluvial fan will have on downslope resources or ground dwelling animals and plants. While the DEIS states that the project proposal will "minimize" the amount of grading, the proposed grading would include at minimum 170 acres in the southwest of the site and 360 acres in the northern and western areas of the site with additional grading for roads, "lay down" areas etc. FSA/DEIS at 3-15. Figure 12 in the Project Description shows even more extensive grading and "potential grading" areas. Moreover, the grading figure does not include the roads between the mirror fields which are not proposed to be fully graded but which would also significantly disturb surface soils and hence water flow and water quality across the site. On this basis as well the DEIS fails as an informational document.

F. The FSA/DEIS Fails to Adequately Identify, Analyze and Off-set Significant Impacts to Air Quality and GHG Emissions.

1. Air Quality:

The FSA/DEIS fails to adequately address several air quality issues including but not

[50] *See* Deacon, James E., Williams, A.E., Williams, C.D., and Williams, J.E.; September 2007, Fueling Population Growth in Las Vegas: How Large-scale Groundwater Withdrawal Could Burn Regional Biodiversity, BioScience Vol. 57 No. 8 688-698 (map at 690 showing this area as part of the larger interconnected basins).

limited to PM 10. Of particular concern is that plans to minimize air quality impacts from construction, operations, and decommissioning are all deferred to later development with no clear standards.

2. *GHG Emissions:*

Federal courts have squarely held that NEPA requires federal agencies to analyze climate change impacts. *Center for Biological Diversity v. National Highway Traffic Safety Administration*, 508 F.3d 508 (9th Cir. 2007). As most relevant here, NEPA requires consideration of greenhouse gas emissions ("GHG emissions") associated with all projects and, in order to fulfill this requirement the agencies should look at all aspects of the project which may create greenhouse gas emissions including operations, construction, and life-cycle emissions from materials. Where a proposed project will have significant GHG emissions, the agency should identify alternatives and/or mitigation measures that will lessen such effects.

As part of the NEPA analysis federal agencies must assess and, wherever possible, quantify or estimate GHG emissions by type and source by analyzing the direct operational impacts of proposed actions. Assessment of direct emissions of GHG from on-site combustion sources is relatively straightforward. For many projects, as with the proposed project, energy consumption will be the major source of GHGs. The indirect effects of a project may be more far-reaching and will require careful analysis. Within this category, for example, the BLM should evaluate, GHG and GHG-precursor emissions associated with construction, electricity use, fossil fuel use, water consumption, waste disposal, transportation, the manufacture of building materials (lifecycle analysis), and land conversion. Moreover, because many project may undermine or destroy the value of carbon sinks, including desert soils, projects may have additional indirect effects from reduction in carbon sequestration, therefore both the direct and quantifiable GHG emissions as well as the GHG effects of destruction of carbon sinks should be analyzed.

The FSA/DEIS discussion of greenhouse gas emissions from the project operations (primarily from gas boilers substituting for solar energy), workers traveling long distances to the site, and construction is unclear and inadequate. The DEIS fails to explain how the calculations were made – particularly as to the key assumptions regarding the use of gas boilers that are the primary source of GHG emissions after construction and during ongoing operations. The GHG calculations for construction are provided but no lifecycle GHG analysis is provided to cover the manufacture and transportation of the project components. The lifecycle analysis may reveal quite high emissions given that the 214,000 heliostats for the proposed project (FSA/DEIS at 1-3 (each mirror would be 7.2 feet high by 10.5 feet wide)), will likely be manufactured in Europe.[51] Therefore, both manufacturing and shipping GHG emissions should have been estimated, and alternatives considered that would avoid the emissions where possible, and mitigation measures should have been considered to minimize and off-set and remaining GHG emissions. The DEIS also failed to mention, no less include, any calculation of the net loss of greenhouse gas sequestration from onsite soils and plants.

[51] *See* CEC Hearing Transcript January 13, 2010 at 80.

The greenhouse gas calculations in the DEIS are incomplete and the BLM has failed to provide clear and accurate information regarding this impact. *See generally* FSA/DEIS at 6.1-59 (Appendix Air-1 Greenhouse gas emissions). The proposed project will admittedly produce over 27,000 tons of CO_2 equivalent per year from operations alone with the primary source being gas boiler use. FSA/DEIS at 6.1-65 (Greenhouse Gas Table 3; 27,444 MTCO2E, with 25,458 MTCO2E from the gas boiler use). This level of emissions is significant in and of itself as it is more than twice the significance threshold recently adopted by the South Coast Air Quality Management District for greenhouse gas emissions and well above the threshold suggested by EPA of 25,000 tons for regulating CO_2 emissions under the proposed Tailoring Rule. *Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule; Proposed Rule*, 74 Fed. Reg. 55292, (October 27, 2009) ("The first phase, which would last 6 years, would establish a temporary level for the PSD [Prevention of Significant Deterioration] and title V applicability thresholds at 25,000 tons per year (tpy), on a 'carbon dioxide equivalent' (CO2e) basis, and a temporary PSD significance level for GHG emissions of between 10,000 and 25,000 tpy CO2e.").

Despite the significant level of emissions from operations facts, the BLM does not provide any minimization measures or other alternatives measures that would reduce the operations GHG emissions (during the initial start up of the plant or in the long-term), analyze any alternative technologies in terms of their GHG emissions (*e.g.*, PV solar has no ongoing operational GHG emissions), provide any minimization measures for the GHG emissions, or consider any off-sets for these emissions.

Moreover, the DEIS is extremely unclear regarding the calculations used to obtain the GHG emissions rates and what the actual proposed limits will be on gas boiler use that would maintain this level of emissions. While the DEIS repeatedly states that the boilers would be used for up to 4 hours a day with an average of no more than one hour a day (*see, e.g.*, FSA/DEIS at 3-8, 3-9, 6.1-64, 7.2-4), during the evidentiary hearing before the CEC it was made clear that the calculations of GHG emissions were in fact *not* based on 365 hours per year but rather on 480,000 mmBtus per year which figure was provided by the applicant and apparently represents a calculation of using the gas boilers for up to 5% of the energy output which could translate to approximately 520 hours per year.[52] Clearly the figure used was higher than the 1 hour per day average discussed in the DEIS Indeed, the 5% condition is proposed by the CEC but the Air District permit would allow for up to 4 hours per day use or up to 1460 hours per year; no calculation of GHG emissions was provided for that amount of use. Moreover, the DEIS also ambiguously states: "The proposed project would be permitted, on an annual basis, to emit over 27,000 metric tons of CO2-equivalent per year *if operated at its maximum permitted level.*" Thus, it is unclear from the statements in the DEIS if the "maximum permitted level" is the 5% CEC limit or the 4 hour per day Air District Limit. Although the question of the proposed amount of gas boiler use and the basis for the GHG emissions calculations seems to have been resolved during the CEC hearings, the correct unambiguous information was not provided to the

[52] *See* CEC Hearing Transcript January 13, 2010 at 65-66 (also stating that the boilers may operate to augment production during the day and therefore the percent of output and time of use are not directly related).

public by the BLM in the DEIS. On this basis as well as others the DEIS is inaccurate and misleading and must be revised and re-circulated for full and fair public review.

There is no calculation of emissions provided during the start up phase of 180 days during which the CEC would allow unlimited use of the gas boilers. Moreover, it is entirely unclear whether or how the BLM will monitor and/or enforce the limit on the use of the gas boilers and hence ensure the limit of GHG emissions is as stated in the DEIS or whether it will rely solely on the CEC to perform that function.

The GHG emissions from the construction phase of the project are stated to be 17,779 metric tons CO2 equivalent (Greenhouse gas table 2, FSA/DEIS at 6.1-64).

Because BLM has failed to accurately and adequately identify the GHG emissions it has also failed to fairly look at alternatives that would avoid such emissions. Indeed, rather than attempt to analyze the impacts, alternatives and mitigation measures as it would with any other impact, BLM simply assumes that because the project is an industrial scale renewable energy project it "would result in a net cumulative reduction of energy and GHG emission from new and existing fossil resources." FSA/DEIS at 6.1-59. As a result of this assumption, BLM failed to adequately identify and analyze the GHG emissions flowing from the project approval including failure to even identify or quantify near-term CO_2 emissions from construction and manufacturing and emissions during the 6-month start-up period, as well as failure to analyze any alternatives to avoid or minimize the long-term emissions from operations that were identified.

BLM assumes that these significant GHG emissions will be mitigated by actions totally beyond its control, such as market-driven processes that will require that whatever renewable power is ultimately generated from the project *actually displaces* fossil fuel use. *See* FSA/DEIS at 6.1-59 to 6.1-60. This is not allowed under NEPA, and the BLM must analyze *the impacts of the project before it* and cannot minimize the analysis based on other factors and future off-sets or mitigation that is dependent on conditions outside of its control. *See, e.g. Neighbors of Cuddy Mountain v. U.S. Forest Service*, 137 F.3d 1372, 1380-81 (9th Cir. 1998)("The Forest Service's broad generalizations and vague references to mitigation measures do not constitute the detail as to mitigation measures that would be undertaken, and their effectiveness, that the Forest Service is required to provide. Moreover, even if the mitigation (e.g. displacement of fossil fuels) turns out to be effective, it does nothing to actually prevent the CO_2 emissions resulting from the proposed project or the loss of carbon sequestration from soils. Moreover, it is undisputed that in the near-term GHG emissions will increase emissions during construction, manufacturing and transportation of the components, and during the initial phases of the project when the gas boilers may be used without any limitation. BLM fails to consider any alternatives to the project that would minimize such emissions or to require that these near-term emissions be off set in any way.

Although the proposed project's technology which requires significant use of natural gas is admittedly experimental and will cause significant GHG emissions, BLM completely fails to explore this aspect of the impacts of the project in the DEIS in violation of NEPA.

G. The Analysis of Cumulative Impacts and Growth Inducing Impacts in the DEIS Is Inadequate

While cumulative impacts and growth inducing impacts are related they must be independently analyzed. Moreover, in order to fairly assess the growth inducing impacts of a project the project description must be accurate and adequate, because an inadequate project description (as here) risks grossly understating the growth inducing impacts of the project.

1. Cumulative Impacts

A cumulative impact is "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time." 40 C.F.R. § 1508.7. The Ninth Circuit requires federal agencies to "catalogue" and provide useful analysis of past, present, and future projects. *City of Carmel-By-The-Sea v. U.S. Dept. of Transp.*, 123 F.3d 1142, 1160 (9th Cir. 1997); *Muckleshoot Indian Tribe v. U.S. Forest Service*, 177 F.3d 800, 809-810 (9th Cir. 1999).

"In determining whether a proposed action will significantly impact the human environment, the agency must consider '[w]hether the action is related to other actions with individually insignificant but cumulatively significant impacts. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment.' 40 C.F.R. § 1508.27(b)(7)." *Oregon Natural Resources Council v. BLM,* 470 F.3d 818, 822-823 (9th Cir. 2006). NEPA requires that cumulative impacts analysis provide "some quantified or detailed information," because "[w]ithout such information, neither courts nor the public . . . can be assured that the Forest Service provided the hard look that it is required to provide." *Neighbors of Cuddy Mountain v. United States Forest Service*, 137 F.3d 1372, 1379 (9th Cir. 1988); *see also id.* ("very general" cumulative impacts information was not hard look required by NEPA). The discussion of future foreseeable actions requires more than a list of the number of acres affected, which is a necessary but not sufficient component of a NEPA analysis; the agency must also consider the actual environmental effects that can be expected from the projects on those acres. *See Klamath-Siskiyou Wildlands Ctr. v. BLM*, 387 F.3d 989, 995-96 (9th Cir. 2004) (finding that the environmental review documents "do not sufficiently identify or discuss the incremental impact that can be expected from each [project], or how those individual impacts might combine or synergistically interact with each other to affect the [] environment. As a result, they do not satisfy the requirements of the NEPA.") Finally, cumulative analysis must be done as early in the environmental review process as possible, it is not appropriate to "defer consideration of cumulative impacts to a future date. 'NEPA requires consideration of the potential impacts of an action *before* the action takes place.'" *Neighbors*, 137 F.3d at 1380 *quoting City of Tenakee Springs v. Clough*, 915 F.2d 1308, 1313 (9th Cir. 1990) (emphasis in original).

The Cumulative Scenario in the FSA/DEIS fails to adequately identify and analyze the scope of the cumulative impacts to various resources across appropriate scales for each impact. While the FSA/DEIS looks at the Ivanpah Valley to some extent it ignores other scales of analysis. For example, the DEIS fails to look at cumulative impacts to the biological resources in

the CDCA as a whole from multiple proposed industrial scale projects particularly how sprawling industrial sites could fragment habitats and change the quality of the CDCA overall. In addition, the DEIS should have considered the cumulative impacts to the desert tortoise and its recovery at several different scales—for the Northeastern Mojave Desert Tortoise Recovery Unit in the North Ivanpah Valley within California, the Recovery Unit as a whole, the species within California, and/or the species as a whole. Each of these scales of analysis would likely reveal different information about the cumulative impacts of this project.

For example, the California population of the Northeastern Mojave Desert Tortoise Recovery Unit in the North Ivanpah Valley is unique in California and is at risk from the cumulative effects of this project, the Optisolar (now First Solar) power project adjacent to the proposed project site, the proposed DesertXpress High Speed Passenger Train, and the upgrade of the Eldorado-Ivanpah transmission line and substations in California alone.

National Park land resources will also be cumulatively impacted. The Clark Mountains, part of the Mojave National Preserve, rise to almost 8,000 feet from the Ivanpah Valley and are home to bighorn sheep and other species that may be directly, indirectly, and cumulatively impacted by the proposed project and other proposed projects in the area. As another example, migratory birds that frequent the Preserve, including raptors, may similarly be impacted by the project as well as other proposed projects in the area

With regards to the biological resources, the DEIS fails to accurately evaluate the cumulative impacts to rare species based from the projects proposed in the Ivanpah Valley or the CDCA. Because the scale of each of the different rare species' ranges vary, the cumulative impacts are not adequately analyzed. Cumulative impacts to special status plants are recognized (Executive Summary, FSA/DEIS, p. 1-15) but the FSA/DEIS has failed to adequately analyze these cumulative impacts across the range of these species and ways to avoid and minimize these impacts. For example, the analysis of the Mojave milkweed is much different than the cumulative impacts for the desert tortoise because the range of the Mojave milkweed within the CDCA is much more restricted than the desert tortoise. Cumulative impacts to the Mojave milkweed is likely to be much more substantial based on its limited range and the number of projects proposed within its range than the cumulative impacts to the badger, which is a more widely distributed species. Therefore, the DEIS fails to actually adequately analyze the cumulative impacts of the project on the various biological resources.

The DEIS also fails to consider all reasonably foreseeable impacts in the context of the cumulative impacts analysis. *See Native Ecosystems Council v. Dombek, et al,* 304 F.3d 886 (9th Cir. 2002) (finding future timber sales and related forest road restriction amendments were "reasonably foreseeable cumulative impacts"). The DEIS also fails to provide the needed analysis of how the impacts might combine or synergistically interact to affect the environment in this valley or region. *See Klamath-Siskiyou Wildlands Ctr. v. BLM*, 387 F.3d 989, 995-96 (9th Cir. 2004).

In this case, the proposed project is just one of at least six right-of-way applications sprawling across the Ivanpah Valley on public lands all of which will depend on the Eldorado-Ivanpah transmission line upgrades and substations which are also currently under consideration.

The BLM notes the existence of the power line upgrade proposal, new substations, and the applications and acknowledges the possibility that they could *all* be approved but has, nonetheless, failed to provide meaningful analysis of the impacts of these projects in concert—for example, the reasonably foreseeable creation of a *de facto* solar zone sprawling across the public lands along the border of two states. For BLM to continue the approval processes for these projects piecemeal without looking at them together in the context of landscape level land use planning, cumulative impacts, and growth inducing impacts violates the most basic requirements of NEPA. The BLM cannot lawfully ignore the obvious cumulative impacts to this landscape.

2. Growth Inducing Impacts

The NEPA regulations also require that indirect effects including changes to land use patterns and induced growth be analyzed. "Indirect effects", include those that "are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include *growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems*." 40 C.F.R. s.1508.8(b) (emphasis added). *See TOMAC v. Norton*, 240 F. Supp.2d 45, 50-52 (D.D.C. 2003) (finding NEPA review lacking where the agency failed to address secondary growth as it pertained to impacts to groundwater, prime farmland, floodplains and stormwater run-off, wetlands and wildlife and vegetation); *Friends of the Earth v. United States Army Corps of Eng'rs*, 109 F. Supp.2d 30, 43 (D.D.C. 2000) (finding NEPA required analysis of inevitable secondary development that would result from casinos, and the agency failed to adequately consider the cumulative impact of casino construction in the area); *see also Mullin v. Skinner*, 756 F. Supp. 904, 925 (E.D.N.C. 1990) (Agency enjoined from proceeding with bridge project which induced growth in island community until it prepared an adequate EIS identifying and discussing in detail the direct, indirect, and cumulative impacts of and alternatives to the proposed Project); *City of Davis v. Coleman*, 521 F.2d 661 (9th Cir. 1975) (requiring agency to prepare an EIS on effects of proposed freeway interchange on a major interstate highway in an agricultural area and to include a full analysis of both the environmental effects of the exchange itself and of the development potential that it would create).

The FSA/DEIS here fails to adequately identify and analyze both the cumulative impacts and the growth inducing impacts which in this instance are closely tied together. For example, within the Ivanpah Valley the high cost of the proposed Eldorado-Ivanpah upgrade and substations, which involves the construction of 35 miles of high voltage lines from California into Nevada and a separate telecommunications pathways could, if approved, provide a compelling economic incentive for approval of the proposed project and several other industrial scale solar projects in the same valley. In addition to proposed project and the proposed Optisolar (First Solar) project, both on the northeastern slopes of the Clark Mountains, two solar energy generation facilities are proposed by NextLight Renewable Power on 7,840 acres of public lands on the eastern side of the Ivanpah Valley (the Silver State projects) and a right of way application has also been filed for an additional solar project just north of the proposed airport site. Many of the affected lands within these proposals are also high quality desert tortoise habitat with intact and robust populations of desert tortoise all within the Northeastern

Recovery Unit. At minimum, these and any other significant growth that could be facilitated and/or induced by the proposed project and the necessary transmission line upgrade should have been fully considered as indirect effects (or "secondary" or "induced" effects) attributable to the proposed project.

This growth inducing effect of the transmission line *which is necessary for* the proposed ISEGS project is essentially ignored in the DEIS. In fact, the combined projects if approved will likely create a momentum that would virtually ensure approval of the Silver State projects as well as the Optisolar project and others in this area-- several additional solar power projects on prime desert tortoise habitat in the Ivanpah Valley. Arguably, the proposed project alone could not amortize the cost of the line upgrade. The cumulative impacts from these connected proposed projects on the North Ivanpah Valley are not adequately assessed and the growth inducing impacts from the approval of these projects on the Ivanpah Valley, the CDCA, and BLM's ongoing PEIS planning is not adequately identified, assessed or analyzed. Cumulative impacts and growth inducing impacts of the several proposed projects, if approved, would turn Ivanpah Valley into a *de facto* solar zone and industrial zone. The most obvious effect would be the conversion of a largely natural area – the Ivanpah Valley and dry lake area as a whole—into a largely industrialized area with more than 6 large scale solar plants, the accompanying substations and power lines, glare and heat islands that will be created across the "zone."

The DEIS limits discussion of growth inducing impacts to whether the proposed project will lead to an increase in local populations and local use of energy. FSA/DEIS at 8-4 to 8-5. This narrow view of the growth inducing impacts is grossly insufficient for a project that (along with the *necessary* upgrades to transmission which are also currently being proposed as a separate action and must be reviewed and approved by BLM as well) could make the Ivanpah Valley a magnet for other solar projects and convert the valley from primarily open lands and high-quality habitat into an industrial zone with the remaining habitat highly fragmented and of far less value to the tortoise and other species.

H. The EIS's Alternatives Analysis is Inadequate

NEPA requires that an EIS contain a discussion of the "alternatives to the proposed action." 42 U.S.C. §§ 4332(C)(iii),(E). The discussion of alternatives is at "the heart" of the NEPA process, and is intended to provide a "clear basis for choice among options by the decisionmaker and the public." 40 C.F.R. §1502.14; *Idaho Sporting Congress*, 222 F.3d at 567 (compliance with NEPA's procedures "is not an end in itself . . . [but] it is through NEPA's action forcing procedures that the sweeping policy goals announced in § 101 of NEPA are realized.") (internal citations omitted). NEPA's regulations and Ninth Circuit caselaw require the agency to "rigorously explore" and objectively evaluate "all reasonable alternatives." 40 C.F.R. § 1502.14(a) (emphasis added); *Envtl. Prot. Info. Ctr. v. U.S. Forest Serv.*, 234 Fed. Appx. 440, 442 (9th Cir. 2007). "The purpose of NEPA's alternatives requirement is to ensure agencies do not undertake projects "without intense consideration of other more ecologically sound courses of action, including shelving the entire project, or of accomplishing the same result by entirely different means." *Envtl. Defense Fund, Inc. v. U.S. Army Corps of Engrs.*, 492 F.2d 1123, 1135 (5th Cir. 1974). An agency will be found in compliance with NEPA only when "all reasonable alternatives have been considered and an appropriate explanation is provided as

to why an alternative was eliminated." *Native Ecosystems Council v. U.S. Forest Serv.*, 428 F.3d 1233, 1246 (9th Cir. 2005); *Bob Marshall Alliance v. Hodel*, 852 F.2d 1223, 1228-1229 (9th Cir. 1988). The courts, in the Ninth Circuit as elsewhere, have consistently held that an agency's failure to consider a reasonable alternative is fatal to an agency's NEPA analysis. *See, e.g., Idaho Conserv. League v. Mumma*, 956 F.2d 1508, 1519-20 (9th Cir. 1992) ("The existence of a viable, but unexamined alternative renders an environmental impact statement inadequate.").

If BLM rejects an alternative from consideration, it must explain why a particular option is not feasible and was therefore eliminated from further consideration. 40 C.F.R. § 1502.14(a). The courts will scrutinize this explanation to ensure that the reasons given are adequately supported by the record. *See Muckleshoot Indian Tribe v. U.S. Forest Service*, 177 F.3d 800, 813-15 (9th Cir. 1999); *Idaho Conserv. League*, 956 F.2d at 1522 (while agencies can use criteria to determine which options to fully evaluate, those criteria are subject to judicial review); *Citizens for a Better Henderson*, 768 F.2d at 1057.

Here, BLM so narrowly construed the project purpose and need (and ignored the requirements for NEPA analysis of a plan amendment) that the DEIS did not actually "consider" any alternatives to the proposed project. After summarily rejecting 23 alternatives many of which would have avoided significant impacts to the environment, the BLM stated:

> Since no other ROW application was brought forward by the applicant, the BLM will respond to the ROW application for the ISEGS project as proposed. Therefore, the only alternatives that are within the agency's jurisdiction, and that meet the purpose and need for the proposed project, are approval of the right-of-way (the Proposed Project Alternative) and denial of the right-of-way (No Project/No Action Alternative). A detailed analysis of these two alternatives is presented within the resource-specific sections of this FSA/DEIS.

FSA/DEIS at 4-1. However, BLM's "jurisdiction" is not so narrow; BLM can, and indeed must, undertake full consideration of alternatives under NEPA when reviewing a plan amendment and proposed project and (as discussed above regarding the plan amendment and below), there are several potential alternatives that would have fallen well within BLM's jurisdiction including a plan amendment to promote conservation of the desert tortoise and protect the high-quality tortoise habitat in the Northern Ivanpah Valley from industrial development.[53] Furthermore, even if an alternative is outside of BLM's jurisdiction that does not mean that it should not be

[53] Indeed, by letter dated June 25, 2009, while the DEIS preparation was underway, the San Gorgonio Chapter of the Sierra Club submitted a nomination for an ACEC in the North Ivanpah Valley to the BLM noting "the resources of the area include habitat for the Northeastern Mojave Desert Tortoise Recovery Unit, an outstanding assemblage of barrel cactus and other rare California plants, and inspiring views of and from the Mojave National Preserve" and concerns "that the California population of the Northeastern Desert Tortoise Recovery Unit is not adequately protected under the Northern and Eastern Mojave Desert Management Plan (NEMO)." That ACEC nomination could have been, and indeed should have been, included in the DEIS alternatives for the plan amendment. Instead, the BLM's Desert District Director simply rejected the ACEC nomination by letter dated July 2, 2009.

considered as the DEIS notes: "Section 1502.14(c) of the NEPA regulations requires that the agency develop and evaluate reasonable alternatives that are not within the jurisdiction of the agency, and which are outside of the capability of the applicant to implement." FSA/DEIS at 4-1.

Based on this DEIS, the BLM's decision must be to deny the project as proposed. Because BLM stated that it was only providing "detailed analysis" for the proposed project and the no project alternative in the DEIS, the DEIS must be revised and re-circulated to comply with NEPA. Rather than rigorously exploring all reasonable alternatives, including alternatives that could avoid significant impacts to the desert tortoise and other biological resources, the BLM framed the analysis in the DEIS as being simply about the acceptance or rejection of the project as proposed by the applicant—by insisting on such a binary analysis BLM failed to fulfill its duties under NEPA, and without a revised DEIS BLM cannot lawfully approve the project.

Moreover, among the more protective alternatives that BLM rejected with little to no analysis are many that could avoid significant impacts of the project. These alternatives should be reassessed in light of the known impacts of the project. However, BLM failed to *fully consider* feasible alternatives that would avoid significant impacts of the project particularly the significant impacts to desert tortoise, its habitat, and other biological resources.

The FSA/DEIS examines and rejects a series of project alternatives that BLM had already determined would not meet its narrow statement of the purpose and need of the project in what appears to be an elevation of form over substance. Because the alternatives analysis is the "heart" of any environmental review, the failure to provide meaningful alternatives is fatal to this FSA/DEIS. Indeed, even the CDFG noted that a "full analysis" of alternate sites was still lacking in the FSA/DEIS. CDFG Comments dated October 27, 2009 at 3. As CDFG noted the proposed site is "excellent tortoise habitat, with a low level of disturbance and high plant species diversity," and suggested that alternatives should be evaluated where "lower quality habitat is clearly within range to potentially reduce the overall Project impacts to endangered and sensitive species." *Id.*

Other alternatives are clearly available and should have been considered. Although the BLM rejected out of hand many of the alternatives discussed in the FSA/DEIS, it is clear that at least some of those alternatives are both feasible or could be with some additional modifications. At minimum, an alternative site outside of occupied desert tortoise habitat, a phased alternative, and a reduced size alternative, all could have been explored. For example, the FSA/DEIS fails to look at an alternative that would approve the project in phases in order to minimize impacts if unforeseen events occur or if the project fails to perform as hoped at this formerly untested "commercial-scale"—that is if the first phase demonstrates that this technology for some reason is not technically or economically viable in a commercial-scale project. *See* FSA/DEIS at 2-5 (Applicant's Objectives).

As another example, the discussion of a distributed solar alternative in the DEIS was inadequately explored. Rather than simply setting up a "straw man" alternative to be knocked down, the BLM should have more fully considered this alternative. The Center sponsored

testimony from Bill Powers[54] on the treatment of the distributed energy alternative in particular which shows that the discussion in the FSA/DEIS of this alternative was inaccurate and inadequate. The Sierra Club also sponsored testimony regarding the potential for a reconfigured alternative closer to the I-15 that might have less impacts on occupied desert tortoise habitat. None of these alternatives were fairly analyzed in the DEIS.

In addition, in order to meet the DOE's purpose and need to lend funds to projects that "avoid, reduce, or sequester air pollutants or anthropogenic emissions of greenhouse gases, and employ new or significantly improved technologies as compared to commercial technologies in service in the United States at the time the guarantee is issued" (assuming for the sake of argument alone that this is a proper project objective), the DEIS should have considered alternatives that would provide funding to other types of projects. Such alternatives could include, for example, conservation measures that both avoid and reduce energy use within high-energy use load-centers including the Los Angeles Basin, San Diego, and the Bay Area.

Alternative measures could include funding community projects for training and implementation of conservation measures such as increased insulation, sealing and caulking, and new windows for older buildings and new or improved technologies for accomplishing these important goals. Conservation measures are an excellent and quick way of reducing demand in both the short- and long-term and reduce the need for additional power sources. In addition, these measures can provide immediate jobs and training in high population areas with significant unemployment (particularly among low skilled workers and youth).

The existence of these and other feasible but unexplored alternatives shows that the BLM's analysis of alternatives in the DEIS is inadequate.

I. The DEIS Fails to Adequately Consider Cultural Resources and Native American Values

The Center is informed and believes and based thereon alleges that several Native American tribes with interests in this area have not been properly notified of the proposed project concerning the impacts to cultural resources and Native American values. This is far more than a "procedural" issue; it is also a substantive failing by BLM that undermines the NEPA analysis.

Most importantly, without input from the affected tribes with interests in this area it is impossible to know if all of the issues regarding impacts to cultural resources and Native American values have been adequately identified or addressed. When BLM revises the DEIS as it must for many reasons, it should also reach out to the affected tribes and ensure full participation from them on the potential impacts to cultural resources and Native American values from the proposed project.

[54] Testimony of Bill Powers, P.E., Ivanpah Solar Electric Generating System, Docket 07-AFC-5, December 16, 2009, and at hearing on January 12 and 14, 2010.

III. Endangered Species Act: The Biological Assessment and Draft Translocation Plan BLM Provided to the Fish & Wildlife Service Fail to Adequately Identify and Analyze Impacts to the Desert Tortoise in Order to Insure Against Jeopardy and Support Recovery.

As discussed above, BLM's failure to adequately address impacts to the desert tortoise in the DEIS fails to comply with NEPA. In addition, the biological assessment and draft translocation plan provided to the Fish and Wildlife Service are grossly inadequate.

The ESA was enacted, in part, to provide a "means whereby the ecosystems upon which endangered species and threatened species depend may be conserved...[and] a program for the conservation of such endangered species and threatened species..." 16 U.S.C. § 1531(b). The ESA "is the most comprehensive legislation for the preservation of endangered species ever enacted by any nation." *Tennessee Valley Authority v. Hill*, 437 U.S. 153, 180 (1978). The Supreme Court's review of the ESA's "language, history, and structure" convinced the Court "beyond a doubt" that "Congress intended endangered species to be afforded the highest of priorities." *Id.* at 174. As the Court found, "the plain intent of Congress in enacting this statute was to halt and reverse the trend toward species extinction, whatever the cost." *Id.* at 184.

Section 2(c) of the ESA establishes that it is "...the policy of Congress that all Federal departments and agencies shall seek to conserve endangered species and threatened species and shall utilize their authorities in furtherance of the purposes of this Act." 16 U.S.C. § 1531(c)(1). The ESA defines "conservation" to mean "...the use of all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to this Act are no longer necessary." 16 U.S.C. § 1532(3). Similarly, Section 7(a)(1) of the ESA directs that federal agencies to "utilize their authorities in furtherance of the purposes" of the ESA. 16 U.S.C. § 1536(a)(1)..

In order to fulfill the substantive purposes of the ESA, Federal agencies, such as BLM in this instance, are required to engage in consultation with the Fish and Wildlife Service to "insure that any action authorized, funded, or carried out by such agency...is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the adverse modification of habitat of such species... determined...to be critical..." 16 U.S.C. § 1536(a)(2) (Section 7 consultation). Section 7 consultation is required for "any action [that] may affect listed species or critical habitat." 50 C.F.R. § 402.14. As part of the consultation, the action agency must first prepare a biological assessment. 16 U.S.C. § 1536(c)(1). Although procedural, consultation is the backbone of the ESA. As the Ninth Circuit recognized, "[o]nly by requiring substantial compliance with the act's procedures can we effectuate" Congressional intent to protect species. *Sierra Club v. Marsh*, 816 F.2d at 1384 (9th Cir. 1987).

As part of the proposed project BLM has initiated consultation with the Fish &Wildlife Service ("Service") regarding impacts to the threatened desert tortoise and its habitat in order to ensure against jeopardy and provide for the conservation of the species. *See Nat'l Wildlife Fed'n v. NMFS*, 524 F.3d 917, 933 (9th Cir. 2008) (holding that the ESA requires consideration of impacts to species' prospects for recovery in jeopardy analysis). In order to engage in meaningful consultation the agencies must have adequate information regarding the baseline

status of the species in the area of the proposed project as well as adequate identification and analysis of the likely impacts of the project on the species and its habitat and the long-term conservation of the species including direct, indirect and cumulative impacts. In this instance, the Service must be provided with sufficient information to determine the impacts of the proposed project on the tortoise including the degree to which the proposed project could undermine the species' ability to recover in light of direct, indirect and cumulative impacts of the proposed project as well as other threats (including climate change and the need to preserve healthy tortoise populations that will well suited and positioned to adapt to rapid changes.).

While the protocol level surveys for desert tortoise on the proposed project site identified 25 mature tortoises, the actual number of desert tortoises on site is likely much higher, based on the effectiveness of protocol level surveys on finding all onsite tortoises[55], especially given the vast number of acres of the proposed project site. Based *just* on the number of documented tortoises, the project site supports a similar population density of desert tortoise to the Northeastern Recovery Unit's documented density within the DWMAs.[56] Thus the survey data confirms that this area is high quality to excellent desert tortoise habitat with a population that is at least as robust as those within the DWMAs and should be protected as such.

As stated above, the Northeastern Recovery Unit only dips down into the CDCA in the general area of the proposed project site. This particular Recovery Unit is host to three different unique genetic types one of which occurs in the Ivanpah valley.

Of particular concern is the cursory and completely inadequate proposed translocation plan relied on by BLM. To date, translocation of desert tortoise always results in "take" of tortoises and certainly does not aide in the recovery of the threatened species. "Successful" relocation has been documented to have a 15-21% mortality[57]. Significant losses of tortoises through the most recent translocation effort in 2008 - the Fort Irwin translocation - resulted in over 20% mortality *within the first year*. Further monitoring has documented as of August 2009, over 250 desert tortoise (38%) have died in the translocation areas of Fort Irwin[58]. This translocation has resulted in further declines in the west Mojave recovery unit to the detriment of recovery of the species.

The Scientific Advisory Committee of the U.S. Fish and Wildlife Service's Desert Tortoise Recovery Office has recently concluded that "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. 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

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[55] Anderson et al. 2001
[56] USFWS 2009a.
[57] Field et al. 2007, Nussear 2004
[58] USFWS 2009c. Draft Biological Opinion for the Proposed Addition of Maneuver Training Lands at Fort Irwin, California (8-8-09-F-43R) at pg. 48

area) was not identified.[59] The proposed project can hardly be considered a "strategic augmentation program".

These data and conclusions by desert tortoise experts negate any logical basis for presenting translocation as aiding in recovering the species. The risks associated with translocation in general are now well established and quite high[60]. Because of this, the agencies need to take seriously a full and honest evaluation of the need to site projects within essential, occupied desert tortoise habitat. Siting projects in areas that lack desert tortoise will preclude the need for translocation and the inevitable mortality that translocation and relocation causes.

If translocation must occur as part of the project implementation, the translocation/relocation plan needs to be substantially improved to increase success. We provided substantial comments on the Preliminary Staff Assessment and the Draft Desert Tortoise Translocation Plan to the California Energy Commission and we incorporate those comments here by reference[61].

Subsequent augmentation to the translocation/relocation plan by BLM before it was provided to the Service still fails to address a number of essential desert tortoise issues.

1. Disease issues

The health of the desert tortoises that are on the site and proposed for translocation as well as the "host" tortoises in areas into which the translocated tortoises will be moved are simply not addressed. Regardless of the proximity of the translocated and host tortoises, data still needs to be collected on the state of the population at a minimum to help inform the results of the translocation. If disease is present in either the translocated tortoises or "host" tortoises, concentrating tortoises into off-site areas may exacerbate disease transmission and outbreaks especially coupled with the stresses of translocation/relocation, competition for scarce resources, defense of existing territories (host population), establishment of new territories (relocated population), etc.

2. Carrying Capacity

Neither the Biological Assessment,[62] the DEIS or the translocation plan submitted to the Service by the BLM actually evaluates the carrying capacity of the translocation/relocation sites, and their ability to support greater tortoise densities over the long-term. While a die-off of tortoises is known from the Ivanpah Valley in the 1990's, there is no evidence presented in any of the documents that the habitat has the capacity to provide resources to sustain over the long-term a higher density population. In light of global climate change and its effects currently occurring on the desert[63], the habitat may simply not be able to support a more concentrated

[59] USFWS 2009b. SAC meeting summary.
[60] Dodd and Seigel 1991
[61] CBD comments to CEC on Preliminary Staff Assessment 7/6/09
[62] Biological Assessment (December 2009) Prepared for BLM by CH2MHill.
[63] Kelly and Goulden 2008

population now or into the future. The recirculated DEIS must evaluate the carrying capacity of the translocation/relocation sites to actually support both the host and translocated tortoises.

3. Monitoring

Not only should the translocated tortoises be monitored but it is essential that the "host" tortoises also be monitored, to truly evaluate the status of the translocation. One of the goals of the plan includes "Minimize impacts on resident desert tortoises outside fenced areas"[64]. However, no monitoring of this part of the population is proposed, so it would be impossible to evaluate the impacts on the resident population. Clearly much more rigorous monitoring needs to be included.

4. *Lack of Objectives and Analyses*

The goals of the translocation plan are proposed to 1) translocate/relocate all desert tortoises from the fenced sites to nearby suitable habitat; 2) minimize impacts on resident desert tortoises outside fenced areas; and 3) assess the success of the relocation effort through monitoring. As stated, none of the goals propose a successful translocation/relocation effort. The draft translocation/relocation plan completely fails to address goal 2. We could find no success criteria identified in the translocation/relocation plan. Despite monitoring being proposed, it is not tied to anything – triggers for action, adaptive management, or success critieria. Clearly much work remains to be done on the translocation/relocation plan in order to make it meaningful, responsive and a benefit to desert tortoise.

The draft translocation/relocation plan completely lacks any "adaptive management" and triggers for action if/when problems occur during the translocation/relocation or on the translocation/relocation sites. Benchmarks for success need to be identified and additional requirements put in place to mitigate failures of this experimental proposal. While we understand the pressures of finalizing permits to access funding from the American Recovery and Reinvestment Act of 2009 prior to the December 2010, the rushed timeline is no excuse for an inadequate plan.

5. Timing

Translocation of desert tortoise in the fall is not optimal especially if summer/fall rains do not occur. If translocation must occur, flexibility in timing is essential to help to assure successful translocation to help meet the minimization standard.

6. Lack of long-term assurances

No mechanism is included to assure the long-term protection of the desert tortoises that are moved and the habitat into which they are moved. As the BLM is well aware, multiple projects are proposed for this same area, including the Desert Xpress high-speed rail line and an

[64] CH2MHill 2009a Attachment D to the Biological Assessment: Translocation/Relocation Plan (May 2009).

adjacent large-scale photo-voltaic project. Assurances must be included so that the desert tortoise affected by this project are not impacted again by a subsequent project. We remain concerned however, that lacking a comprehensive strategy for tortoise conservation, tortoises could be translocated/relocated multiple times, which clearly will be detrimental to the species and its recovery. The recirculated DEIS must provide these essential assurances that if tortoises are moved, they will not be moved again and that this habitat will be protected from other habitat impacting activities.

IV. Conclusion

Thank you for your consideration of these comments. In light of the inadequacy of the environmental review to date, we urge the BLM to revise and re-circulate the DEIS before making any decision regarding the proposed plan amendment and right-of-way application. In the event BLM chooses not to revise the DEIS and provide adequate analysis, the BLM should reject the right-of-way application and the plan amendment. Please feel free to contact us if you have any questions about these comments or the documents provided.

Sincerely,

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