APPENDIX A-1
IVANPAH SOLAR ELECTRIC GENERATING SYSTEM
SUMMARY OF PUBLIC AND AGENCY COMMENTS ON DRAFT ENVIRONMENTAL IMPACT STATEMENT (DEIS) AND AGENCY RESPONSES
JULY 2010

Key to Commentors

Commentor	ID #	Affiliation
Kevin Emmerich	1	Basin and Range Watch
Ileene Anderson, Lisa T. Belenky	2	Center for Biological Diversity
Sidney Silliman	3	Sierra Club San Gorgonio Chapter and Desert Committee
Scott Cashen	4	Sierra Club
Gloria Smith	5	Senior Attorney, Sierra Club
Kathleen M. Goforth	6	Environmental Protection Agency, Region IX
Kim Delfino, Joshua Basofin	7	Defenders of Wildlife
Michael J. Connor, Ph.D.	8	California District, Western Watershed Project
Rory D. Westberg	9	Acting Regional Defense Council, National Park Service
Joanna H. Walk, Alice Bond, Alex Daue	10	Natural Resource Defense Council, The Wilderness Society
Greg Suba	11	California Native Plant Society
Glenn R. Stewart	12	Desert Tortoise Council
Steve Knight	13	Assemblyman, 36th Assembly District
Anthony Adams	14	Assemblyman, 59th Assembly District
Ann Vanino	15	Moving Forward
Deleted	16	Comments not associated with the DEIS
Richard Sierra, Jr.	17	Hod Carriers Local 783
Mike Vandeman, Ph.D	18	Pacbell
Violette Roberst	19	Mojave Environmental Education Consortium
J. Stephan Dolezalek	20	Vantage Point Venture Partners
Brendan Hughes	21	
Nancy Schultz	22	
Rocco Davis	23	LiUNA! Pacific Southwest Regional Office
Robin Kent	24	
Sue Wainscott	25	Desert Conservation Program
Laura Cunningham	26	Desert Ecologist, Basin and Range Watch
Carrie Hyke	27	County of San Bernardino, Land Use Services Department
Cindy MacDonald	28	CRM
Deleted	29	Comments not associated with DEIS
David Lamfrom	30	National Parks Conservation Association
John L. Carrier	31	CH2MHill
Mia P. Ratcliff	32	Clark County Department of Aviation
Tom Budlong	33	
Chris Clarke	34	Private Citizen
Mass Mailing	35	

Dennis Nowicki	36	
Eileen Hennessy	37	
Connie Conway	38	Assemblywoman, District 34
Glenn R. Stewart	39	The Desert Tortoise Council

INTRODUCTION

The Draft Environmental Impact Statement (DEIS) for the Ivanpah Solar Electric Generating System (Ivanpah SEGS) project was published in November, 2009, and the public comment period expired on February 11, 2010. The following sections have organized the comments into categories, in order to facilitate technical review, development of responses, and, where needed, revision to the text in the Final EIS.

1.0 GENERAL COMMENTS

1.1 General Sufficiency of DEIS

Comment ISEGS-6-1: On January 16, 2008, EPA provided extensive formal scoping comments for the ISEGS Project which included a variety of detailed recommendations regarding purpose and need, range of alternatives, and resource areas of concern. Based on our review of the ISEGS DEIS, we have rated the document as Environmental Concerns - Insufficient Information (EC-2). Please see the enclosed "Summary of EPA Rating Definitions." In the enclosed detailed comments, EPA provides specific recommendations regarding analyses and documentation to assist in assessing potential significant impacts from the proposed ISEGS Project. Specifically, EPA is concerned with the: 1) current justification for the Project purpose, need, and independent utility; 2) range of alternatives; 3) impacts to biological and aquatic resources; 4) impacts to air quality; 5) impacts to endangered species and other species of concern; and, 6) cumulative impacts from reasonably foreseeable future actions.

Comment ISEGS-6-2: While EPA is pleased with certain aspects of this Project including the use of dry cooling, the close proximity to current highway infrastructure, and a 5% maximum energy production cap on natural gas, EPA recommends that the forthcoming Supplemental DEIS (SDEIS) provide additional analyses (including any necessary supporting documentation) and identify specific minimization or mitigation measures, as appropriate, regarding the issue areas below. (Specific recommendations are included in the following detailed comments.)

- Project Purpose, Need, and Independent Utility
- Range of Alternatives
- Biological and Aquatic Resources
- Air Quality (including impacts from construction)
- Endangered Species and Other Species of Concern
- Cumulative Impacts (from reasonably foreseeable future actions)

Response: *BLM has reviewed and evaluated all public comments received on the Draft EIS (DEIS), and also evaluated information received through the California Energy Commission (CEC) hearing process. The Supplemental Draft EIS (SDEIS), published on April 16, was specifically developed to address many of the comments, including those associated with the Purpose and Need, the range of alternatives, and Biological Resources/endangered species. Other specific comments on cumulative impacts and*

air quality were evaluated, and are addressed through text modifications in their respective sections in the Final EIS (FEIS).

1.2 General Objection to Project

Comment ISEGS-22-1: I oppose the Ivanpah Solar Electric Generating System, it is a plan that does not fit the desert for three main reasons, the impacts to the fragile natural resources are too great, the amount of water needed is too great and a mitigation plan is not in place to address translocation, water depletion, and loss of public space.

Comment ISEGS-11-1a: CNPS supports the development of alternative, green energy sources, as long as those projects do not unnecessarily degrade healthy, diverse ecosystems. The proposed ISEGS project will cause significant, avoidable, adverse impacts to native vegetation communities and significant impacts to rare plant populations on the site, and within the surrounding Ivanpah Valley area. These impacts will have permanent (i.e., effects will persist for thousands of years) effects on ecosystem functions that have been evolving within the Ivanpah Valley for millennia. The area within the proposed project footprint will be affected directly, and the areas surrounding the project footprint will be affected indirectly during project construction and operational phases.

Response: *The comments opposing the proposed project are appreciated. These comments were considered in the selection of the preferred alternative in the FEIS, and will be considered in the decision whether or not to issue a right-of-way grant in the Record of Decision.*

1.3 General Support for Project

Comment ISEGS-15-1: As a resident of the High Desert region, I am writing to express my support for Bright Source energy's Ivanpah project. The project represents a significant economic development opportunity for the High Desert region and a major step towards achieving our state's and nation's clean energy and economic goals.

Comment ISEGS-14-4: California and the nation need BrightSource's Ivanpah SEGS project, and others like it, to launch a stronger, more independent and competitive economy that once again proudly leads the world. I ask that BLM and CEC undertake everything in their power to promptly approve and support the development of the Ivanpah SEGS project.

Comment ISEGS-14-1: I am writing in support of Bright Source Energy's Ivanpah Solar Energy Generating System (ISEGS) project, and urge the California Energy Commission (CEC) and the U.S. Bureau of Land Management (BLM) to promptly and successfully complete its permitting process. This utility-scale solar project will bring needed economic development and jobs to California's High Desert, including to my own district. By itself, the Ivanpah project is a great opportunity for our region;

importantly, it also represents the first major step in building the new solar industry that will greatly benefit our region.

Comment ISEGS-13-4: California and the nation need BrightSource's Ivanpah SEGS project, and others like it, to launch a stronger, more independent and competitive economy that once again proudly leads the world. I ask that BLM and CEC promptly approve and support the development of the Ivanpah SEGS project.

Comment ISEGS-13-1: Brightsource Energy's Ivanpah Solar Energy Generating System (ISEGS) project will bring needed economic development and jobs to California's High Desert, including my district. The project represents a tremendous opportunity for our region by itself, but is also an important first step in building the new solar industry that will greatly benefit our region. I support the Ivanpah SEGS project, and ask that the California Energy Commission (CEC) and the U.S. Bureau of Land Management (BLM) issue permits for its prompt development.

Comment ISEGS-23-2: We understand the environmental challenges that a project such as Ivanpah presents, particularly given its large footprint, but those are challenges that are being thoroughly and deliberately worked out. BrightSource has adopted environmentally friendly strategies such as dry cooling to minimize water usage, and a low impact design to minimize impacts to the desert topography and plants.

No short cuts are being taken with a project as important as this!

We are confident that BrightSource is taking environmental responsibility very seriously in constructing and operating this important project. Let's not forget that the project will help clean the air and protect our desert climate.

We believe that BrightSource and other solar energy projects will provide greatly needed economic benefits to the High Desert and respect the environment at the same time. Please join us in supporting the proposed Ivanpah project as it leads our region back to economic prosperity and puts the High Desert on the vanguard of a new and promising industry.

Comment ISEGS-17-3: We understand the environmental challenges that a project such as Ivanpah presents, particularly given its large footprint, but those are challenges that are being thoroughly and deliberately worked out. BrightSource has adopted environmentally friendly strategies such as dry cooling to minimize water usage, and a low impact design to minimize impacts to the desert topography and plants.

No short cuts are being taken with a project as important as this!

We are confident that BrightSource is taking environmental responsibility very seriously in constructing and operating this important project. Let's not forget that the project will help clean the air an protect our desert climate.

Comment ISEGS-17-1: I am writing to express support for BrightSource Energy's Ivanpah Solar Energy Generating System.

Comment ISEGS-19-1: I am writing to express support for BrightSource Energy's Ivanpah Solar Energy Generating System.

Comment ISEGS-38-1: I am writing to express my support for BrightSource Energy's Ivanpah Solar Energy Generating System. When constructed, this project will produce more solar energy than all of the rooftop solar installed in the nation last year, and will more than double the amount of solar thermal energy produced in the U.S. today. The Ivanpah project represents a tremendous economic development opportunity for the High Desert region, and a major step towards achieving California's and the nation's clean energy and economic goals.

Comment ISEGS-38-6: I believe this project, and the innovative clean technology it employs, is a major step forward towards a stronger, more competitive economy for the High Desert Region, California and the nation, as well as an important contribution to our renewable energy and climate protection. I urge you to timely approve BrightSource's Ivanpah project.

Comment ISEGS-20-1: In short, this Ivanpah project is not merely "one among many," of which there will be many more to come. BrightSource Energy, through projects like this one, is uniquely positioned to serve as a powerful force in California's ability to meet its energy needs and goals; there is currently no comparable substitute in the renewable energy market. Consequently, to impede this project would substantially impact the ability of California utilities to meet our state's renewable energy targets overall. It would also be highly unfortunate for the State to give up the opportunity to take advantage of what could potentially be a very substantial amount of federal funding support, especially during a time of state budget crisis. BrightSource is poised and ready to scale up now, and the federal government is poised to very likely support this. But if this project and company do not get off the ground now, it could be many years before another similarly promising and well-equipped provider can arise to take its place.

Comment ISEGS-15-4: The Ivanpah project will produce enough clean energy to provide 150,000 homes in California with clean electricity. Ivanpah will be the first project to meet BrightSource Energy's contracts with PG&E and SCE, and the first BrightSource project to help meet California's 33 percent renewable energy and climate change requirements.

In recognition for its vitally important role in helping our nation meet its clean energy and economic goals, the Ivanpah project has been identified as a "fast-track" priority by the U.S. Department of Interior for obtaining federal stimulus benefits for California under the 2009 American Recovery and Reinvestment Act (ARRA). The project has also been selected as one of sixteen short-listed applicants to receive a loan guarantee under the U.S. Department of Energy (DOE) 1703 program, established by the 2005 Energy Policy Act, and is the only utility-scale solar project so selected.

Comment ISEGS-14-3: When constructed, Ivanpah SEGS will produce more solar energy than all of the rooftop solar installed in the nation last year, and will more than double the amount of solar thermal energy produced in the U.S. today. It will produce enough clean energy to provide 150,000 homes in California with clean electricity free from fossil-fuel price volatility. Ivanpah SEGS will be the first project to meet BrightSource Energy's world-leading contracts with PG&E and SCE, and the first BrightSource project to help meet California's 33 percent renewable energy and climate change requirements. Ivanpah SEGS has been designed to minimize its environmental impacts. It will reduce water usage by 90 percent by using dry cooling, allowing Ivanpah to use approximately 30 times less water than competing technologies. The project will use roughly 100 acre feet of water - the equivalent of 300 homes' annual water usage, and far less than the amount used by the adjacent golf course or nearby casinos. The project will also avoid more than 13 million tons of CO2 emissions over its 30-year lifecycle, as well as 85 percent of the air emissions from an equally sized natural gas plant. Its low-impact design reduces grading and minimizes need for concrete pads, keeping much of the site's vegetation in place. The project also makes use of the currently-used high-voltage transmission pathway that transects the site.

In recognition for its vitally important role in helping our nation meet its clean energy and economic goals, Ivanpah SEGS has been identified as a "fast-track" priority by the U.S. Department of Interior for obtaining federal stimulus benefits for California under the 2009 American Recovery and Reinvestment Act (ARRA). The project has also been selected as the only utility-scale solar project of the sixteen applicants shortlisted for a loan guarantee under the U.S. Department of Energy (DOE) 1703 program.

Comment ISEGS-38-4: The plants will reduce water usage by 90 percent by using dry cooling, allowing Ivanpah to use approximately 30 times less water than competing technologies. The project will use roughly 100 acre feet of water annually- the equivalent of 300 homes.

Comment ISEGS-19-4: The plants will reduce water usage by 90 percent by using dry cooling, allowing lvanpah to use approximately 30 times less water than competing technologies. The project will use roughly 100 acre feet of water - the equivalent of 300 homes' annual water usage, and far less than the amount used by the adjacent golf course or nearby casinos.

Ivanpah will not only provide clean energy to serve more than 150,000 homes in California during the peak hours of the day. The project will also serve as an educational resource for high schools and colleges in the High Desert who are developing curriculum for green technology and teaching students how to adapt the skills needed to work on renewable energy projects such as lvanpah.

The High Desert Region is in need of these jobs and the energy plants such as lvanpah will provide.

Comment ISEGS-36-1: This project is one of many that should be coming to the San Bernardino County and Mojave Desert areas in the coming years. With the current economic conditions the area faces, Brightsource is providing a much needed service, energy, and over 1,000 construction jobs to the area. Those jobs are few and far between in San Bernardino County.

Comment ISEGS-36-3: And personally, I would like to see alternative energy projects created wherever feasible. I am an Army Captain days away from a third Middle East deployment - and can confirm that one of the main reasons the U.S. Army has been in Iraq for the better part of a decade is because of the need to control the oil supply coming out of that region. Brightsource will not be the end-all to the United States' conversion away from Middle Eastern oil, but it will be a great start.

Comment ISEGS-13-3: When constructed, Ivanpah SEGS will produce more solar energy than all of the rooftop solar installed in the nation last year, and will more than double the amount of solar thermal energy produced in the US, today, It will produce enough clean energy to provide 150,000 homes in California with clean electricity free from fossil fuel price volatility.

Ivanpah SEGS has been designed to minimize its environmental impacts. It will reduce water usage by 90 percent by using dry cooling, allowing Ivanpah to use approximately 30 times less water than other technologies. The project will also avoid more than 13 million tons of CO2 emissions over its 30-year lifecycle, as well as 85 percent of the air emissions from an equally sized natural gas plant. Its low-impact design reduces grading and minimizes need for concrete pads, keeping much of the site's vegetation in place, The project also makes use of the currently used high-voltage transmission pathway that transects the site. In recognition for its vitally important role in helping our nation meet its clean energy and economic goals, Ivanpah SEGS has been identified as a "fast-track" priority by the U.S. Department of Interior for obtaining federal stimulus benefits for California under the 2009 American Recovery and Reinvestment Act (ARRA). The project has also been selected as the only utility-scale solar project of the sixteen applicants short-listed for a loan guarantee under the U.S. Department of Energy (DOE) 1703 program.

Comment ISEGS-38-5: Brightsource Energy's environmental considerations to reduce development impacts at its Ivanpah project also include a low-impact design and use of a currently-used high-voltage transmission pathway that transects the site. The low impact design utilizes Brightsource's proprietary solar mirror system, which minimizes the need for grading and concrete pads required for competing technologies. The Ivanpah project will produce enough clean energy to supply 150,000 homes in California, and reduce California ratepayers from exposure to fossil-fuel price volatility.

Comment ISEGS-35-1: Yes, I want green jobs in the High Desert. Yes, I want locally-generated solar energy. Yes, I support the Ivanpah Solar Energy Generating System.

Response: *The comments in support of the proposed project are appreciated. These comments were considered in the selection of the preferred alternative in the FEIS, and will be considered in the decision whether or not to issue a right-of-way grant in the Record of Decision.*

2.0 ALTERNATIVES

2.1 Comments on Location of Proposed Project on Undeveloped Land

Comment ISEGS-28-12: A truly sustainable plan must begin in already developed areas such as Las Vegas, where solar panels can be utilized in already industrialized areas. Solar plates can be placed directly on existing structures and directly fed into existing power grids; no water required, no additional ROWs, no destroying of soil leading to massive erosion and dust pollution (I LIVE HERE AND KNOW WHAT THESE DUST STORMS ARE LIKE WHEN THE WIND PICKS UP!) no total ecosystem annihilation, no impacts to the Threatened Desert Tortoise – it's a no brainer!

Destroying more of our environment and wasting our resources for the benefit of corporate control and corporate profits must stop. This is NOT GREEN ALTERNATIVES! This is more of the same old school mentality that has led our Nation to the current crisis this proposal is supposedly attempting to compensate for!

Comment ISEGS-18-1: Our top priority needs to be the preservation of wildlife habitat. We have already destroyed FAR too much. Therefore, any solar project needs to be located where it won't impact wildlife, such as on top of buildings and above roadways and parking lots. Thus, NO solar project should or needs to be located in the desert, which is habitat for the endangered desert tortoise and many other species of concern.

Comment ISEGS-11-2a: Habitat fragmentation, loss of connectivity for terrestrial wildlife, and introduction of predator and invasive weed species associated with the ISEGS project in the proposed location are anathema to an effective climate change adaptation strategy. Siting the proposed ISEGS project in the proposed location in Ivanpah Valley confounds our climate change adaptation strategy with a poorly executed climate change mitigation strategy. CNPS maintains that the solution to this problem is to build and operate the proposed ISEGS project in an alternative site away from intact wild lands. The way to maintain healthy, vibrant ecosystems is to preserve their intact nature, not to fragment them and reduce their biodiversity.

Comment ISEGS-33-3: NEPA's Title I, Section 101, details basic and fundamental goals. Following are quotes from this section, and then the full text of the section. In relating the quotes to the proposed project, it is important to keep in mind that the proposed project will completely use up undeveloped, essentially virgin land. The land will convert from pristine, virtually untouched, to a high-intensity industrial zone. It will destroy all life and environmental benefits of the property. It will be a complete change in the visual impact, completely inconsistent with visually adjacent lands…Here is the text of NEPA's introduction, the source of the quotes:…

Comment ISEGS-24-1: I am appalled by your decision to fast track this destructive project. Despite my own belief in the need to wean ourselves from non green energy, the benefits of this project do not outweigh its damage to endangered species and the Mojave desert as a whole. Why is pristine land being considered first for this project? There are many areas of degraded agricultural lands, dead lakebeds and vacant lots that are much more appropriate for solar projects. You are not acting as responsible stewards for the land or for the people of the US by going forward with this project, especially now that your own EIS reveals that you cannot mitigate for the destruction of rare plants or the loss of desert tortoises. I am ashamed that this project is being touted as green, when nothing could be further from the case.

Comment ISEGS-34-1: I am confident many will address the abundant technical, hydrological, and wildlife related problems contained in the proposal to bulldoze a broad swath of publicly owned ancient desert habitat for private industrial development...Paving thousands of acres of the Ivanpah Valley with mirrors would utterly destroy the wild character of the place. It would be an encroachment on the peace of the Preserve and the lands around it, with the noise and dust of construction and the subsequent blinding glare of the completed facility an intrusion into a peace I have found nowhere else on earth...It was one of those moments I have found surprisingly common in the Ivanpah Valley, a place that though altered by human hands is still precious, still wild in essence, well worth being defended from further unnecessary and destructive change. I urge you to halt this project.

Comment ISEGS-21-5: Finally, BLM and CEC approval of this project will create a terrible precedent for future solar projects on public land. There are many thousands of acres of public and private land that are seriously disturbed and degraded, and have virtually no conservation or carbon-sequestration value. It should be a priority for BLM and CEC to get this first project right and place it on such lands. If the Ivanpah SEGS is approved, then more areas with tortoise habitat and rare plant assemblages will be graded for solar farms, and the cumulative impacts of such sitings could cause species decline and perhaps even extinction. BLM and CEC should send a message to solar developers that it is not open season on the desert. Please ensure that only thoroughly-researched, properly sited projects will be approved.

Comment ISEGS-35-2: With energy developers eyeing nearly a million acres in the California desert for utility-grade solar, wind and geothermal energy projects, we can't afford to make mistakes that could destroy our irreplaceable desert landscapes and the amazing wildlife they support . We need to do everything we can to get it right the first time. Many people assume the desert is the best place to put large-scale solar facilities because they think of the desert as a barren place that's devoid of life . But in reality, this couldn't be further from the truth. California's Mojave and Sonoran Deserts are home to some of the most unique and endangered wildlife in the world, from desert tortoises to bighorn sheep to burrowing owls. Big solar projects will have big impacts. That's why we need to ensure these projects are located in appropriate places that will

have the least impact on the desert's fragile wildlife and ecosystems -- areas that are near existing highways, cities and transmission lines.

Comment ISEGS-35-3: There is plenty of land in the California desert that is well-suited to accommodate a utility-grade facility, but won't cause unnecessary destruction to what are now nearly pristine, ecologically sensitive lands. The BrightSource project is the first big solar project to go through this review process, with more than one hundred other large-scale applications in line behind it. The decisions that state and federal government agencies make right now will set a powerful precedent - - and could have devastating and irreversible consequences for wildlife in California and beyond. We don't have to choose between moving forward with renewable energy projects and making sure desert tortoises , bighorn sheep and other imperiled wildlife are protected -- we just have to do renewable energy development right the first time. Thank you for considering my views on this important subject. I look forward to your reply.

Comment ISEGS-26-3: Bureau of Land Management should not permit the ISEGS development from destroying this rich desert fan habitat, and should allow the burro herd to continue using the area. The cattle allotment should be retired, as the use by those animals appears to be heavy in places. The area is very good Desert tortoise habitat, and should be considered for management as an Area of Critical Environmental Concern or special management area for burros and wildlife.

Comment ISEGS-27-9: Impacts to Biological Resources are considered significant and unavoidable. We struggle with accepting that they are unavoidable, as another site in a more disturbed area might result in a different finding.

Comment ISEGS-11-4: As noted in the FSA/DEIS, in CNPS's written opening testimony, and in CNPS's direct oral testimony (ISEGS Evidentiary Hearings Transcripts of 1/12/10 pp.223-253), peripheral populations are important for the long-term conservation of genetic diversity and evolutionary potential of a species, particularly within the context of uncertain climatic changes to their habitat (Hampe and Petit, 2005; Lesica and Allendorf, 1995).

CNPS would like to emphasize the contradictory approach to climate change mitigation represented by siting the project in its currently proposed location. One of the benefits of utility-scale solar projects will be their reduction of greenhouse gas emissions resulting from decreased need to rely on the combustion of fossil fuels for energy. However, if the implementation of this climate change mitigation strategy (greenhouse gas reduction) comes at the expense of reducing the native biodiversity of intact biotic communities (desert tortoise habitat, high quality vegetation alliances), and rare plant populations, then the benefit of the project is greatly reduced.

The Ivanpah Valley fan site is a large intact area of creosote-bursage scrub that is relatively free of weeds. The FSA/DEIS describes the site as "particularly high quality in terms of species richness and diversity, including rich cactus and succulent diversity, creosote rings, micro-topographic diversity (upon which several of the special-status

species depend), and currently contains relatively few non-native plants." (FSA, Biological Resources p. 6.2-37).

In A Manual of California Vegetation, (Sawyer et al., 2008) the authors describe threats to the Larrea tridentata-Ambrosia dumosa Shrubland Alliance (Creosote bush-white burr sage scrub) found at the proposed site as follows: "The presence of several non-native plants, particularly Brassica tournefortii, Bromus spp., and Schismus spp., has greatly increased fire frequencies and led to the degradation and destruction of many hectares of this alliance. Long-term, intensive grazing, OHV activity, mining, and military operations have also left their mark.... We need to identify, monitor, and manage areas free of these degrading influences" (page 568).

In addition, the authors state that Creosote bush-white burr sage scrub associations occurring with Pleuraphis rigida (Big galleta grass), and "those with a diverse shrub layer are G1/S1" (page 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" (page 45). The Ivanpah site plant community has galleta grass and a diverse shrub layer. The qualities of this site, as well as similar areas throughout the Ivanpah Valley and indeed the California Desert Conservation Area are just those types of wild lands that our climate change strategies should be addressing through protection, rather than destruction.

Comment ISEGS-9-15: 6.12-42 includes discussion of an "urban frame of reference . " This may be acceptable in areas of dense or urban development. There are other alternatives to reference with locations more compatible with the surrounding natural landscape.

Response: *BLM appreciates the concerns raised regarding the potential authorization of solar energy developments on previously undeveloped sites.*

BLM, the Department of Energy (DOE), and the State of California have all identified commercial-scale solar energy as an integral component of a future energy system which is sustainable, while reducing the emission of greenhouse gases. BLM ackowledges that locating commercial-scale solar energy facilities only on previously disturbed sites (public or private) would be desirable, and is following the developments associated with the recent initiative between EPA and the National Renewable Energy Laboratory (NREL) to encourage this type of renewable energy development. However, even with new federal initiatives to evaluate development of previously contaminated sites, BLM is still mandated to consider ROW applications on undisturbed public land. Also, given the large land area requirements and difficulty in acquisition of small land parcels, large-scale development on previously contaminated lands is potentially not feasible in the same time frame as that of the proposed project. Therefore, to access the innumerable benefits of solar energy, sites must be identified which meet a variety of technical and economic criteria (such as high solarity and particular slope and grade), and which also minimize impacts to environmental resources. Ultimately, this process requires consideration of sites that are either undeveloped, or which have limited development.

While BLM agrees that biological resources would be impacted in the proposed project, Mitigated Ivanpah 3 Alternative, and Modified I-15 Alternative areas, we also acknowledge the long history of human use and development of the Ivanpah Valley area, and the project site. The project site itself is currently the location of a grazing lease, and is traversed by transmission lines, a natural gas pipeline, and roads. The site is directly adjacent to a golf course. Within a few miles of the project site are an interstate highway, casino development, a natural gas power plant, and waste disposal facilities for the Molycorp mine. As part of its mandate to balance multiple use of public lands with environmental protection, BLM must consider all of these issues, and they are all presented as part of the analysis in the EIS.

2.2 Comments on the Range of Alternatives Considered

Comment ISEGS-8-2a: In this case, the BLM has considered only two alternatives, granting the right-of-way (the "proposed action") and not granting the right-of-way ("no action"). This is an entirely inadequate range of alternatives and violates both the letter and spirit of NEPA. This is especially so given the specific requirement to "Include reasonable alternatives not within the jurisdiction of the lead agency" since the CEC considers multiple alternatives in the associated FSA.

Comment ISEGS-6-8a: The DEIS presents only the Proposed Action Alternative and a No-Action Alternative. EPA believes that the alternatives analysis needs to be expanded in the SDEIS to include a full analysis of a reasonable range of alternatives.

Comment ISEGS-10-6: Despite its flaws, the DEIS reveals that this project will "have major impacts to the biological resources of the Ivanpah Valley, substantially affecting many sensitive plant and wildlife species" including the federally listed desert tortoise and a number of rare plants, as well as "eliminating a broad expanse of relatively undisturbed Mojave Desert habitat." DEIS at 1-17. NRDC and The Wilderness Society raised concerns about the propriety of this site in our comments on the CEC's Preliminary Staff Assessment as did many other organizations and individuals. As the result of its failure to consider any alternatives to the proposed project, the Ivanpah DEIS has only exacerbated those concerns. The BLM should issue a supplement without further delay that analyzes a reasonable range of alternatives and that corrects the DEIS' inadequate analysis of cumulative impacts.

Comment ISEGS-5-2: According to the DEIS, the purpose of the proposed action is to "approve, approve with modifications, or disapprove ROW applications filed by Bright Source." DEIS at 2-7 (emphasis added). It is the approve with modifications aspect of the above statement that gives rise to an expectation of a full range of Project alternatives in the DEIS. Yet, despite these obvious options, the BLM only considered two proposals: the right-of-way (the proposed Project) and denial of the right-of-way (no project alternative). DEIS at 4-1. It is entirely unclear how the BLM would impose modification to the Project absent a full discussion of such modifications in the DEIS' alternatives analysis.

The BLM did not provide a clear explanation as to why the DEIS lacked a meaningful range of alternatives, but as best as Sierra Club could discern the rationale went as follows: first, only the proposed Project and No Project alternatives were within the agency's jurisdiction; second, only those two alternatives met the Project objectives for purpose and need; and, third, "no other right-of-way application was brought forward by the applicant. " Id. As shown below, these explanations are not supported by fact or law. The BLM failed to inform the public and decision makers of a reasonable range of Project alternatives that were more protective of natural resources. This omission is a clear violation of NEPA.

Comment ISEGS-5-3: As the DEIS pointed out but then ignored, NEPA requires action agencies to develop and evaluate reasonable alternatives, including alternatives that are not even within the agency's jurisdiction, and are outside the applicant's ability to implement. DEIS at 4-1 citing CEQ's guidance NEPA 40 Most Asked Questions. Under CEQA, the CEC staff included a number of alternatives outside of federal jurisdiction and outside the applicant's ability to implement. NEPA required the BLM to complete a similarly broad analysis or adequately explain why other alternatives were rejected. It did neither.

An agency may not reject a reasonable alternative because it is "not within the jurisdiction of the lead agency." 40 C.F.R. § 1502.14(c); see also Muckleshoot Indian Tribe v. U.S. Forest Service, 177 F.3d 800, 814 (9th Cir. 1999). For example, an agency's failure to consider an alternative that would require some action beyond that of its congressional authorization is counter to NEPA's intent to provide options for both agencies and Congress. See Natural Res. Def. Council v. Morton, 458 F.2d 827, 836 (D.C.Cir.1972) ("The mere fact that an alternative requires legislative implementation does not automatically establish it as beyond the domain of what is required for discussion, particularly since NEPA was intended to provide a basis for consideration and choice by the decisionmakers in the legislative as well as the executive branch."). BLM was required to consider alternatives that would meet the Project's objectives of increasing generation of renewable energy while protecting sensitive biological resources on public lands even if those alternatives were beyond the BLM's immediate authority to implement.

With the approval of the ISEGS Project, the BLM will help facilitate the timely development of renewable energy, a national goal. DEIS at 2-8. Under NEPA, reasonable alternatives are defined by the scope of the problem addressed. Thus, projects dealing with national issues warrant a broad range of project alternatives. Natural Resources Defense Council v. Morton, 458 F.2d 82,7 836 (D.C. Cir. 1972) (EIS violated NEPA because it failed to consider alternatives outside of the Department of the Interior's jurisdiction) Here, a broad articulation of "reasonable alternatives" is compelled by the national scope of the articulated problem: "When the proposed action is an integral part of a coordinated plan to deal with a broad problem, the range of alternatives that must be evaluated is broadened." Id. at 835. Thus, as part of a coordinated effort to reduce the nation's dependence on fossil fuels, a problem of national scope, the BLM was required to consider solutions outside its jurisdiction. For

example, a reasonable scope of alternatives would include distributed energy generation, energy efficiency, private-land alternatives, reconfiguration, and other federal sites.

Comment ISEGS-5-5: As noted above, a proper alternatives analysis furthers NEPA's environmental policies by requiring agencies to consider whether they can carry out federal actions in less environmentally damaging ways, and consider whether alternatives exist that make the action unnecessary. Specifically, NEPA's regulations require an agency "to rigorously explore and objectively evaluate all reasonable alternatives." 40 C.F.R. § 1502.14. "An agency must look at every reasonable alternative, within the range dictated by the nature and scope of the proposed action." Northwest Environmental Defense Center v. Bonneville Power Admin., 117 F.3d 1520, 1538 (9th Cir.1997). "The existence of a viable but unexamined alternative renders an environmental impact statement inadequate." Morongo, 161 F.3d at 575; see also Resources Ltd. v. Robertson, 35 F.3d 1300, 1307 (9th Cir.1994). The BLM's failure to include other alternatives that might prevent or eliminate environmental damage in the Ivanpah Valley and meet most of the Project's objectives is a clear violation of NEPA.

Comment ISEGS-5-9: The DEIS omitted a full alternatives analysis on the grounds that the BLM only received one right-of-way application, and viewed its discretion as limited to simply responding to the right-of-way as written. DEIS at 4-1. Sierra Club fails to see how the application in this case differed from most other projects involving commercial development. In the normal course, applicants present the agency with a fixed proposal and the agency prepares a full analysis of the project's impacts and investigates various alternatives to the applicant's prepared plans. The fact that the applicant itself did not provide BLM with an array of alternatives has no bearing on the agency's statutorily mandated analysis. The BLM must now start over and consider a meaningful range of alternatives that meet federal objectives. Muckleshoot Indian Tribe v. USFS, 177 F.3d 800, 813 (9th Cir. 1999) (Forest Service violated NEPA by considering only no-action alternative and two other similar alternatives), See also Sierra Club v. Dombeck, 161 F.Supp.2d 1052, 1068 (D.Ariz. 2001) (EIS inadequate in part because of a failure to evaluate all reasonable alternatives). Each analysis must "[d]evote substantial treatment to each alternative considered in detail including the proposed action so that reviewers may evaluate their comparative merits." 40 C.F.R. § 1502.14(b).

Comment ISEGS-7-1: The FSA/DEIS fails to analyze a reasonable range of alternatives, narrowly defining the project's objectives in such a way as to preclude assessment of many viable alternatives on private and degraded land.

Comment ISEGS-7-4: The FSA/DEIS's analysis of proposed project alternatives is insufficient and violates the National Environmental Policy Act ("NEPA"). 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 California Department of Fish and Game ("CDFG") noted that a "full analysis" of alternate sites was still lacking in the FSA/DEIS (CDFG comments on the Preliminary Staff Assessment, October 27, 2009, page 4). Unfortunately, rather than looking for

meaningful alternatives that avoid significant impacts to the desert tortoise and other biological resources, the Bureau of Land Management ("BLM") appears to have simply accepted the proponent's proposal and choice to build the proposed Project in "excellent tortoise habitat," with a low level of mitigation, a 3:1 ratio for impacts to 4,073 acres of high quality desert tortoise habitat, even where "lower quality habitat is clearly within range to potentially reduce the overall project impact to endangered and sensitive species." Id.

Comment ISEGS-3-5: NEPA requires the BLM to include a reasonable range of meaningful alternatives in its project EIS. Specifically, BLM must "study, develop, and describe appropriate alternatives to recommend courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources." A full analysis of alternate siting scenarios is warranted for the Project given the potential conflict from developing renewable solar energy on intact desert public lands supporting imperiled plant and wildlife species. The Sierra Club believes such a conflict can be avoided in the Ivanpah Valley by situating the Project in a manner that completely avoids much of the highest quality desert tortoise habitat while keeping the Project at its proposed scale, thereby maximizing solar generation.

Comment ISEGS-2-36c: Based on this DEIS, the BLM's decision must he 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.

Comment ISEGS-8-1a: The proposed power plant project would be located on relatively undisturbed public lands in California that are habitat for the state and federally listed desert tortoise, and that provide habitat for rare plant species and communities. The proposed project will have significant direct, indirect and cumulative impacts on desert tortoises, rare plants, and visual resources. The BLM fails to consider and analyze alternatives that would allow the project to proceed without impacting desert tortoises, rare plants, and visual resources. As we discuss below, BLM's documentation of the impacts of the proposed action is inadequate.

Response: *In Section 4 of the DEIS, BLM conducted a screening-level evaluation of 23 potential alternatives to the proposed action, including alternative locations, configurations, and technologies, including several alternatives (Private Land, Distributed Generation) that are not within BLM's scope of authority. The evaluation of several of these alternatives included not only a determination of their technical and economic feasibility, but a resource-by-resource evaluation of their potential impacts. Although only the proposed action and No Action Alternative were carried into the resource sections for a more detailed analysis, the evaluation of potential alternatives to identify those which were technical and economically feasible, and which could have a reduced magnitude of environmental impacts, exceeded the level of analysis usually included in a screening-level analysis.*

Following review of the public comments, BLM reviewed the rationale presented in Section 4 of the DEIS for eliminating these 23 alternatives from detailed evaluation, and, for 21 of them, concluded that the rationale for their elimination from detailed analysis was explicitly provided, and was sound. However, the agency determined that two alternatives which had been analyzed but eliminated from further evaluation, the I-15 Alternative and the Reduced Acreage Alternative, were potentially feasible, and therefore merited more detailed evaluation. As a result, BLM published the SDEIS on April 16. The SDEIS presented a detailed, resource-by-resource evaluation of a version of the I-15 Alternative (called the Modified I-15 Alternative), and a reduced acreage alternative (called the Mitigated Ivanpah 3 Alternative).

Finally, in the review of the public comments, BLM noted two additional alternatives (Ivanpah Playa and Phased Approval) that were not originally included in the screening analysis in Section 4 of the DEIS. Because both of these alternatives recommended in the public comments have merit, they have been added to the revised screening analysis in Section 4 of the FEIS.

2.3 Comments on Other Potential Alternatives

Ivanpah Playa:

Comment ISEGS-8-2b: Because of the scale of the project it is unlikely that minor changes in footprint would reduce the direct, indirect, and cumulative effects of the project to less than significant. Neither the BLM nor the CEC considered alternative

sites that would avoid significant impacts to desert tortoise but that would allow the project to proceed. One such location within the immediate project vicinity that would avoid desert tortoise habitat is Ivanpah Dry Lake bed. This alternative site location was raised at public meetings, was proposed by the Sierra Club in its June 22, 2009 letter, was referenced by CDFG in its October 27, 2009 letter, and should have been considered in the FSA/DEIS. While construction of the power plant at this site may require some additional engineering to accommodate flooding, the lake bed is crossed by both a freeway (I-15) and a power line so such accommodation is clearly possible. There are proposals to locate solar power plants on and adjacent to dry lake beds in other areas of the CDCA. Locating the power plant on the lake bed by the state line would minimize impacts to visual resources since it would be closer to existing developments, would avoid desert tortoise habitat, and would avoid impacts to rare plants. Restoration of the dry lake bed would likely be much easier once the plant is decommissioned. The lake bed covers 35 square miles and provides ample space to accommodate existing recreational uses and the proposed ISEGS project. The BLM should consider this alternative in a supplemental draft EIS.

Interstate 15 (including Designation of ACEC and Retirement of Grazing):

Comment ISEGS-3-1: We request that the BLM include an EIS alternative that (1) relocates the Project's three power blocks closer to the areas adjacent to Interstate 15 currently mapped as translocation sites; (2) leaves the desert tortoise undisturbed and designates its habitat at Ivanpah as an area of permanent protection such as that provided by areas of critical environmental concern (ACEC); and (3) retires the Clark Mountain grazing allotment.

Comment ISEGS-3-3: The BLM should include in the EIS an analysis of designating the portions of Ivanpah Valley currently proposed for development as Ivanpah 2 and 3 as areas of critical environmental concern. The Sierra Club seeks permanent protection for these lands because a reconfiguration of the Project footprint only makes sense if the habitat protected by the change remains off limits to development permanently.

Comment ISEGS-3-4: Finally, the BLM should retire the Clark Mountain grazing allotment as a component of the ACEC designation. Grazing is simply not compatible with protecting wildlife and plant species in the Ivanpah Valley. This particular allotment is rarely used based on the records at the Needles Office. Those records reveal that no animal unit months were billed for the allotment from 2007 to 2009 (to the end of March). And it appears from the Moon's letter of September 4, 2008 to Sterling White of the Needles BLM office that the permit holders are willing to accommodate a retirement of the allotment were the BLM to issue a right-of-way in connection with the Project.

Comment ISEGS-5-6: In June, 2009, the Sierra Club provided the BLM with a Project alternative that would allow the full 400 MW project to go forward on schedule, while avoiding the most significant impacts on desert tortoise. . . . Based on these and other facts, the Sierra Club formally requested that the BLM include a NEPA alternative that would analyze relocating the Project closer to the areas adjacent to Interstate 15, lands

mapped as Desert tortoise translocation sites until it was determined these were largely unsuitable for that purpose. Inexplicably, the BLM never responded to the Sierra Club letter and certainly did not include it or any variation of the conceptual alternative in the DEIS. Nor did it explain why this alternative was unsuitable for a ROW or CDCA plan amendment.

Comment ISEGS-5-7: Not only did the DEIS omit a viable alternative, as discussed in section III below, it also failed to explain how translocation would protect Desert tortoise. Indeed, the DEIS is silent on how the agencies will resolve the uncertainties associated with translocating desert tortoises. Without details on how the translocation plan will differ from other plans (which resulted in high levels of mortality), or even the locations where tortoises will be released, translocation cannot be considered a viable form of mitigation for the Project. The Sierra Club's alternative proposed avoidance over highly risky mitigation in the form of translocation.

Since June 2009, additional scientific information generated in the Energy Commission proceeding lends additional support to moving the Project to degraded lands adjacent to I-15 and away from the upper reaches of the valley. New information shows that reconfiguring the Project, especially moving all of Ivanpah 3 closer to I-15 would reduce the need to translocate Desert tortoise. In support of reconfiguration, Sierra Club's expert, biologist Scott Cashen, reviewed the literature, the Energy Commission docket and all of the testimony from the evidentiary hearings. Based on this information, Mr. Cashen identified a more than 3,000 acre parcel of land adjacent to I-15 unsuitable as Desert tortoise habit but suitable for portions of the ISEGS Project. See attached Letter From Scott Cashen to Gloria D. Smith, Sierra Club (February 10, 2010) at Figure 1.

In support of Project reconfiguration, Mr. Cashen submitted substantial evidence to the Energy Commission supporting the hypothesis that certain lands near I-15 support fewer desert tortoises than the proposed Project site. See Mr. Cashen's Expert Testimony attached here. Because there were no recent desert tortoise surveys for the lands adjacent to I-15, Mr. Cashen led a field study specifically designed to test the hypothesis that tortoises were less abundant near the Interstate than at the Project site. Desert tortoises were hibernating in December when he conducted his survey, so he carefully surveyed tortoise burrows as an index of relative abundance. Mr. Cashen collected data from both sites (i.e., Project and I-15), then used statistical analysis to determine if there was a significant difference between the number of desert tortoise burrows between the two sites. See Mr. Cashen's Letter.

Mr. Cashen determined that burrow density at the Project site was more than double that of the I-15 Alternative sites he surveyed (0.67 burrows/mile on the Project site, and 0.30 burrows/mile on the I-15 site). The difference was statistically significant at $P < 0.01$). Mr. Cashen's results are comparable to those reported by other Desert tortoise experts.

In addition, lands adjacent to I-15 were originally proposed for translocation areas for tortoises cleared from the Project site. It is unclear what the status of that plan is now.

However, at the request of the CDFG and the CEC staff, the applicant conducted vegetation sampling at several sites proposed for desert tortoise translocation. Results of those surveys support the Sierra Club's alternative to reconfigure the project. Specifically, the surveys indicated that approximately half of the sampling locations in the vicinity of I-15 had plant species richness too low to be viable for desert tortoises (CDFG's criteria for translocation sites requires a comparable ecological make up to habitat where the tortoises currently reside). Therefore, lands adjacent to I-15 lacked enough plant diversity to support desert tortoise.

Comment ISEGS-3-2: In a May 13, 2009, Energy Commission filing, the Western Watersheds Project presented evidence showing how the areas along Interstate 15, currently proposed as tortoise translocation areas 1 and 2, have historically supported few desert tortoises. In that filing to the Energy Commission, Western Watersheds Project provided survey data from Kristin Berry estimating tortoise density in the Project footprint in the range 50-100 desert tortoises per square-mile; whereas the low lying areas along Interstate 15 supported approximately 20-50 desert tortoises per square-mile or less than half.

It is clear that the lands near Interstate 15 have served as a major sink for tortoises, depleting nearby populations, either as a result of cars colliding with tortoises, predation or possibly due to truck- and automobile related pollutants in the soil, or all three factors. Translocating the listed tortoise to sites known not to support them simply makes no sense. Even a casual inspection of the Project site and the translocation areas shows that the native plant life at the Project site is much more extensive and varied than at the translocation lands. The areas currently designated as Ivanpah 2 and 3 provide the highest quality tortoise burrowing habitat and food sources. In contrast, due to the dirt road paralleling Interstate 15, and the grazing operations in and around the corral adjacent to the highway, the translocation lands are denuded and contain exotic plants. In short, completely avoiding habitat lands eliminates translocation, thereby, avoiding the Ft. Irwin pattern of desert tortoise mortalities. It is well established that desert tortoise translocation results in very high mortality.

Similarly, there are approximately 2,000 ephemeral washes that occur throughout the project site. The lower elevations adjacent to the highway present far fewer drainage challenges because of the reduced slope. Relocating the three power blocks to the lower elevations would reduce or eliminate drainage issues that arise with heavy rains.

The Sierra Club's Project alternative stems from a deep concern for the remaining tortoises in the California portion of the Northeastern Mojave Desert Tortoise Recovery Unit. This particular unit is one of six recovery units designated in the U.S. Fish and Wildlife Service's recovery plan. Because the Mojave Desert tortoise is listed as a threatened species under state and federal law, and because the entire California population of this particular unit is found within the Ivanpah area, protecting these individuals must be a high priority for all of the approving agencies, including the BLM. A simple reconfiguration of the Project along with an ACEC designation for the most

densely populated portions of Ivanpah Valley would significantly protect this recovery unit, and stands to facilitate timely resolution of Project approval.

Comment ISEGS-7-7: The BLM rejected a proposed project reconfiguration submitted by the Sierra Club as an alternative, stating very generally that impacts would not be reduced. BLM failed to provide any meaningful analysis and simply glossed over what were some significant differences in impacts to biological resources between the I-15 alternative and the proposed project site. Surveys conducted by the project proponent in 2007 identified less desert tortoise within the I- 15 reconfiguration area than on the proposed project site. However, protocol desert tortoise surveys were not conducted for the I-15 alternative site (FSA/DEIS, page 4-44).

Comment ISEGS-4-1: My comments are directed specifically at the Bureau of Land Management's (BLM) analysis of project alternatives, and the failure of the BLM to examine an alternative, that in my professional opinion, would have considerably less of an impact on the desert tortoise (Gopherus agassizii) and other sensitive biological resources…

The comments contained herein are based on my knowledge and experience, my review of environmental documents pertaining to the Project, a site-specific field study, and the testimony presented at the Project evidentiary hearings. The information gathered from these sources has led me to the following conclusions:

1. The Project would have a significant adverse impact on the State and federally threatened desert tortoise and several special-status plant species.
2. The DEIS failed to analyze a proposed project alternative that would have greatly reduced impacts on sensitive biological resources, including the desert tortoise.
3. There is substantial evidence that reconfiguring the proposed Project closer to Interstate 15 would greatly reduce Project impacts on the desert tortoise and other sensitive biological resources.
4. The conclusions reached by a California Energy Commission (CEC) biologist were based on a hastily conducted qualitative analysis. Upon review of this biologist's conclusions, it should be clear to any trained scientist that the conclusions were unsupported, and thus, invalid. In the subsequent sections I provide more specific discussion of the factors that led me to these conclusions.

Comment ISEGS-4-3: On June 22, 2009, the Sierra Club submitted a letter to the BLM asking the BLM to analyze an alternative project configuration that relocated the Project closer to I-15. The Sierra Club letter contained several scientifically valid reasons why the BLM should consider the proposed alternative. These included (a) empirical data indicating the proposed Project site contained more than twice the density of desert tortoises as the proposed alternative site; and (b) information on the adverse effects roads (e.g., I-15) are known to have on desert tortoise populations. The DEIS failed to analyze the Sierra Club's proposed alternative, or any alternatives besides the "Proposed Project" and "No Project" alternatives. Nevertheless, from a biological resources perspective the "Sierra Club Alternative" would have less severe impacts at

all levels of analyses. However, if only the “Proposed Project” and “No Project” alternatives are available for consideration, in my professional judgment, the BLM must eliminate the Proposed Project alternative from consideration due to the significant adverse effects it will have on the desert tortoise and other sensitive biological resources and habitat.

Comment ISEGS-4-4: Basic principles of conservation biology and landscape ecology support the conclusion that the Sierra Club Alternative would not have the same ecological system level impacts as the proposed Project site, and that the Alternative’s impacts to individual plant and animal species would be less severe that the proposed Project. Habitat fragmentation, community-level disturbance, edge-effects, and introduction of exotic species are all known threats to the long-term viability of many plant and animal species. With respect to the desert tortoise, Boarman (2002) conducted a thorough review of the literature and concluded that fragmentation, loss of habitat, and habitat alteration can result in habitat being largely useless to tortoise populations.

Each of these ecological concerns would be greater at the proposed Project site than at the Sierra Club Alternative. This conclusion is not debatable; it’s obvious. Because the Sierra Club Alternative is located nearer to the Interstate and the Primm Valley Golf Club, it would result in less habitat fragmentation, community-level disturbance, and edge-effects than the proposed site. Similarly, roads and anthropogenic disturbance are known vectors for invasive plant and animal species; locating the Project adjacent to existing roads and disturbance (i.e., the golf course) would minimize the adverse effects associated with invasive species. The DEIS acknowledges these ecological concerns, but fails to consider the viable, proposed alternative that would clearly alleviate them.

Comment ISEGS-4-8: The proposed Project would have a significant impact on the desert tortoise population. After viewing and reviewing all of the available testimony, and other evidence, I have concluded that the Project could be reconfigured to have considerably less impact on the Ivanpah Valley’s desert tortoise population. My conclusion is supported by my examination of site conditions, the testimony provided by the experts, and the scientific literature.

Figure 1 depicts land suitable for Project reconfiguration such that it would reduce impacts on desert tortoises and desert tortoise habitat. The land depicted in Figure 1 contains approximately one-half the density of desert tortoises as the proposed Project site. Furthermore, it encompasses land known to provide lower value to the desert tortoise due to its proximity to I- 15, the golf course, and other types of anthropogenic disturbance. These considerations are particularly important to the long-term recovery of the species. “High quality” habitat provides little value to recovery if it is not suitable for long-term occupation. As desert tortoise expert Dr. Ron Marlow stated in his testimony, “lots of really good potential habitat is not occupied by tortoises because of the impacts of the existing road.” The proposed alternative site encompasses such habitat.

Comment ISEGS-4-9: The land depicted in Figure 1 excludes the 1000-foot Caltrans ROW for the Joint Point of Entry and a 0.25-mile ROW for the Los Angeles Department of Water and Power. It encompasses approximately 3,072 acres of land adjacent to anthropogenic disturbance and known to have low plant species richness. Overall, the location occupies the lower elevation region that has lower species diversity. From an ecological perspective, these lands would aggregate anthropogenic disturbance, and thus reduce the many indirect Project impacts (e.g., fragmentation, invasive species, edge-effects) on the desert tortoise. These lands should be used to reconfigure the Project closer to I-15.

Finally, through our discussions, I understand the applicant is proposing to avoid direct impacts to a strip of land along the northernmost portion of Ivanpah 3. This proposed reduction would do very little to reduce impacts to the desert tortoise, and it would do virtually nothing to ameliorate the long-term impacts of the Project on the local tortoise population. This is because a reduction of Ivanpah 3 would not reduce habitat fragmentation, edge effects and ecological disturbance. These conclusions are supported by both the record and the scientific literature. In my professional opinion, the only meaningful (and currently viable) alternatives to reducing Project impacts to desert tortoise are the No-Project alternative and a Project reconfiguration which utilizes the land depicted in Figure 1.

Comment ISEGS-4-10: Between January 11 and 14, 2010, the California Energy Commission held evidentiary hearings on the application to construct and operate the ISEGS Project. With respect to desert tortoise impacts and protection, and Project alternatives, all of the experts that testified either directly or indirectly, supported the conclusion that the Sierra Club Alternative would have less of an impact on sensitive biological resources. This includes the experts presented by the applicant, agencies, and intervenors.

1. Mark Cochran and John Cleckler (applicant experts) testified that the margins of residential areas serve as a population sink to desert tortoises due to off-road activity, non-native predators, and a “number of different factors.” They further testified that collection of tortoises by humans has an adverse effect (tortoise collection frequently occurs along roadways).
2. Dr. W. Geoffrey Spaulding (applicant expert) testified that human caused edges (i.e., “edge effect”) and human activity have a deleterious effect on tortoise populations. Dr. Spaulding further testified that human development results in additional predators (e.g., common raven) in desert tortoise habitat.
3. Dr. Michael Connor (Western Watersheds Project) testified that roads act as a sink to desert tortoise populations, resulting in fewer tortoises in the vicinity of roads.
4. Dr. Ron Marlow (Defenders of Wildlife) testified that I-15 creates a significant impact on desert tortoises, and that “lots of really good potential habitat is not occupied by tortoises because of the impacts of the existing road.” Dr. Marlow testified that the impact can extend out to five kilometers from the road, and that the proposed Project location would further divide habitat. Dr. Marlow stated that

the effect of losing habitat connectivity is fairly direct. Dr. Marlow concluded that linear impacts are more pervasive than very localized impact, and that "placing two linear impacts up against each other would make more sense" because it reduces the edge over which that impact is expressed in the population.

5. Mark Jorgensen (Center for Biological Diversity) testified that the "obvious thing" to reduce impacts to bighorn sheep was to locate the Project further downslope in a more "impacted zone down near the freeway."
6. Dr. Susan Sanders (CEC staff) testified that her conversations about desert tortoise with experts at BLM and the Fish and Wildlife Service "all pointed to I-15 as being a problem with fragmentation." Dr. Sanders further testified that I-15 creates a problem to tortoise movement and habitat connectivity and that "there's a problem with mortality from I-15." Dr. Sanders stated one of the most substantial effects of the Project on desert tortoise is loss of about 4,000 acres of occupied habitat, and fragmentation and disturbance to the adjacent habitat.
7. Carolyn Chainey-Davis (CEC staff) testified that a mitigation technique agencies typically "love to see and push for" is one that maintains intact functioning ecosystems. Consequently, Ms. Chainey-Davis concluded the CEC needs to maybe re-examine a reconfigured footprint or reconfigured alternative.
8. Dr. Andrew Sanders (applicant/U.C. Riverside Herbarium) testified that moisture was the limiting factor for the special-status plants that occur at the Project site. He stated that, in general, as elevation drops (e.g., towards the Interstate), the temperature increases and the amount of rainfall declines (therefore the water availability is greater up slope).
9. Scott Flint (CDFG) testified that for mitigation, the Department seeks large, contiguous, easily manageable and defensible tracts of land; as well as lands that are near core populations or provide connectivity.
10. Richard Anderson (CEC staff) testified that he agreed (a) quantitative data is better than qualitative data; (b) an assessment of actual occupancy and figuring out where the animal occurs is better than humans trying to predict where that animal might occur; (c) that there are ecological principles, such as fragmentation and maintenance of large blocks of habitat that are important to maintaining intact ecosystems; and (d) studies of desert tortoises have shown that roads are a sink for tortoises, and that they have an adverse effect (on tortoise populations).

None of the above experts refuted any of the preceding testimony, nor did they discuss any alternative viewpoints with one exception. The only variation in the extensive evidence showing that locating the Project adjacent to disturbed land (e.g., the Interstate and golf course) came from Energy Commission staff biologist Richard Anderson. Mr. Anderson concluded that there is very little difference in value for desert tortoise and other special-status species between the proposed Project site and "I-15 alternative" site. Mr. Anderson's conclusion contradicted established principles of conservation biology and the published work from dozens of desert tortoise researchers. More important, it contradicted the site-specific habitat assessment conducted by the applicant's biological resource consultants, and my site-specific study

that documented a significantly greater density of desert tortoises at the Project site than at the lands occupied by the I-15 Alternative.

Mr. Anderson's conclusion contradicted the testimony of the numerous experts presented by both the applicant and the intervenors at the Energy Commission's evidentiary hearings. Finally, Mr. Anderson's conclusion contradicted his own testimony, in which he stated he agreed that roads are a sink for desert tortoise, thereby adversely effecting desert tortoise populations overall. Mr. Anderson's conclusion is so significantly flawed it warrants further discussion. In my opinion, Mr. Anderson's conclusions are scientifically invalid and should not be a component of the BLM's supplemental alternatives analysis for the DEIS.

Significant flaws with Mr. Anderson's conclusion include:

1. Mr. Anderson testified that he sampled 11 variables across 7,128 acres (i.e., the area occupied by the two sites) in a single day in August. In my opinion, it would be impossible to collect reliable data or conduct a representative sample in such a short timeframe.
2. Mr. Anderson acknowledged that he did not collect any quantitative data. Rather, he "eyeballed" the two sites and used subjective factors to create numerical scores for habitat value. This type of data is considered unreliable. Mr. Anderson's data supports this assertion. For example, for the variable "Quality of Surrounding Habitat", he provided every sampling site with the highest possible score of "3". He defines a "3" as high quality habitat with "little to no fragmentation, no nearby development, low or no recent grazing, and little human activity." The I-15 site is adjacent to Interstate 15 and a golf course. How then can one consider it to have little to no adjacent fragmentation, no nearby development, and little adjacent human activity?
3. Even the qualitative variables Mr. Anderson collected have little relevance to desert tortoise habitat quality. Instead of collecting information on variables that have been shown to be statistically significant predictors of desert tortoise habitat quality, Mr. Anderson collected information on variables such as "Special Status Species Likely" and "Overall Habitat Quality for Wildlife". These variables are irrelevant to the desert tortoise. In reference to use of indirect variables to measure habitat, Morrison (2006) states: "[m]any indirect measurements in the same analysis thus greatly compound the error in the results, making for weak conclusions."
4. The variables Mr. Anderson used are plagued by extreme co-linearity (i.e., two or more highly correlated variables), yet he treated them as independent. For example, how can the variable "Overall Habitat Quality for Tortoise" be used to evaluate "habitat quality for desert tortoises" (i.e., the purpose of his assessment)? As a result of this co-linearity, Mr. Anderson violated basic statistical procedures.
5. Annual plants are known to be an important and preferred component of the desert tortoise diet. Arguably, sites with abundant and diverse annual plants provide higher "quality" habitat than those that do not. The USGS habitat model

that was submitted as an exhibit to the evidentiary hearings includes annual plant growth potential as a significant predictor of desert tortoise habitat potential. However, Mr. Anderson's assessment of habitat quality did not include a measure of annual plant cover, or even growth potential (as is used in the model).

6. Mr. Anderson assigned equal weight to each variable to derive a total score for each site. It's well known that two variables rarely have an equal effect on an organism. By assigning each variable equal weight, Mr. Anderson inherently produced unreliable results.
7. Mr. Anderson failed to establish a link between any of the variables he "measured" and desert tortoise habitat quality. That is, he never established whether shrub density (used to evaluate the variable "Dominant Shrubs") provides high quality habitat (e.g., in the form of escape cover) or low quality habitat (e.g., due to competition with annual plants), and that his rationale is supported by scientific literature.

Comment ISEGS-4-12: The DEIS demonstrates that Project objectives could be maintained by a reconfigured design. All available evidence supports the conclusion that adopting a reconfigured design that includes the lands depicted in Figure 1 would reduce impacts on desert tortoise and other sensitive biological resources. The BLM should incorporate careful review of this alternative in a revised DEIS.

Comment ISEGS-2-36f: The Sierra Club also sponsored testimony regarding the potential for a reconfigured alternative closer to the 1-15 that might have less impacts on occupied desert tortoise habitat. None of these alternatives were fairly analyzed in the DEIS.

Comment ISEGS-5-14: The Sierra Club, members of the public, other environmental organizations, and various biologists for agencies and the applicant have, combined, provided overwhelming evidence showing that the Project would present detrimental if not devastating impacts on the federally listed Desert tortoise population in the Ivanpah Valley. Nevertheless, these comments show that the BLM may still issue a right-of-way that would allow the Project to generate all 400 MW of renewable energy and still avoid the most severe impacts on the Desert tortoise and other rare and sensitive desert species. Simply put, the BLM must reconfigure the Project adjacent to I-15. Therefore the Sierra Club respectfully requests that the BLM revised and recirculate the DEIS consistent with these comments or reject the ROW application. Thank you for your consideration.

Comment ISEGS-35-1: I have heard about BrightSource Energy's application to construct a utility-grade solar facility on more than 4,000 acres of ecologically sensitive lands in the Ivanpah Valley, and I'm concerned that if it proceeds as planned, it could push the endangered desert tortoises that live there even closer to extinction. The California Energy Commission concluded that this project "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." The stretch of the Mojave where BrightSource wants to build its 400-megawatt solar power plant is spectacular and almost totally pristine. If the company were to move its project closer to Highway 15, BrightSource could dramatically reduce the negative impacts of the project on the desert tortoise -- and its sensitive habitat in the Ivanpah Valley. For this important reason, I urge you to consider examining an alternative project location that is closer to Highway 15. Decisions about how to "do" renewable energy will have long-term -- and potentially irreversible -- consequences for California's desert wildlife and ecosystems.

Comment ISEGS-5-10: If, the BLM remains unwavering in its position that only the Project and No-Project alternatives are required, it must dismiss the application based on the overwhelming evidence that the Project's impacts to Desert tortoise cannot be mitigated to an acceptable level. See Mr. Cashen's Letter. If on the other hand, the agency supplements the EIS' alternatives analysis, it must look at alternatives that actually avoid or reduce impacts to desert tortoise and other sensitive plant and animal species' habitat.

The Sierra Club understands that the Project applicant intends to offer a minor Project revision that would slightly reduce the northern and western boundaries of Ivanpah 3. There is universal agreement that Ivanpah 3 would fragment habitat and severely impact desert tortoise. Thus a reduced Unit 3 would simply result in less renewable energy production while still permanently destroying important desert tortoise habitat on public land. BLM should not waste resources analyzing an alternative that would do little to avoid the Project's most severe impacts on desert tortoise and its habitat and reduce power generation. It makes no sense for BLM to undertake a separate analysis of an alternative that is "not significantly distinguishable from alternatives actually considered, i.e., the proposed Project, or which have substantially similar consequences." Westlands Water District v. U.S. Dept. of Interior, 376 F.3d 853 at 868 (9th Cir. 2004). Reconfiguring the Project so that all or most of it is developed on fragmented and disturbed land adjacent to I-15 achieves all of the Project's objectives. Based on all of the evidence, including that in the next section, small adjustments to the Project footprint will still require translocation, an unnecessary and unacceptable method of mitigating impacts to listed Desert tortoise.

Comment ISEGS-26-2: Over the large fan dissected by numerous washes, grazing impacts appeared to be low. Big galleta grass (Hilaria rigida) was common and mostly ungrazed during all visits, some bunches with light utilization. Only one in ten grass bunches appeared to be used. Browsing on shrubs also appeared light. Trampling of the ground was light, and much cryptobiotic crust existed abundantly on inter-wash fan surfaces. Introduced weeds were rare, with some Splitgrass (Schismus sp.) in areas of the fan, amounting to less than 10% cover. Small amounts of Red Brome (Bromus madritensis ssp. rubens) was only found on hillsides near to Primm. Bush muhly (Muhlenbergia porteri), a highly palatable and sought-after forage to livestock, was present, indicating the area is not overgrazed. Fluffgrass (Erioneuron pulchellum) was common in places on the fan and hills, a valuable Desert tortoise (Gopherus agassizii) food, and the grasses did not appear to be grazed.

The area along I-15 in the southwest part of the valley had some burro dung (in the higher fan near the mountains) and abundant cattle tracks, trails, and dung lower in the valley. This area was heavily impacted by the cattle in the lower valley around a corral and old water tank-trough. Here trampling and overgrazing was evident from cattle; no burro sign was seen in this part.

Some grazing and trampling was present within two miles of Primm north of the ISEGS site.

Comment ISEGS-4-5: There is undisputed evidence that roads have an adverse effect on tortoise populations. These adverse effects have been well documented, thus making it clear that the Sierra Club Alternative would have less of an impact on desert tortoises than the proposed Project site. Road kill is considered a significant source of mortality to desert tortoises. Boarman and Sazaki (1996) reported a conservative estimate of one tortoise killed per 3.3 km (2 mi) of road surveyed per year. A common mitigation for the impacts of roads and highways is a barrier fence, which has been shown to be highly effective at reducing mortality in tortoises and other vertebrates in the west Mojave. However, fences only increase the fragmenting effects of roads on habitat. Preliminary results of an eight-year study indicate that culverts are used by tortoises to cross highways, but it is unknown whether their use is sufficient to ameliorate the fragmenting effects of fenced highways.

In addition to direct mortality, roads and highways are believed to have several indirect effects on tortoise populations. Habitat fragmentation by satellite urbanization and high-density highways (e.g., I-15) may be preventing essential desert tortoise metapopulation processes and, ultimately, species recovery. The presence of roads and highways may lead to increased predation on desert tortoises (and other species) by providing a travel corridor and reliable food source. For example, common ravens, which are predators on juvenile tortoises, are known for cruising road edges.

Roads and highways are a vector for introduced plant and animal species, which may affect desert tortoises and other native species in adjacent areas. Other potentially harmful activities that likely occur in greater numbers near roads include: mineral exploration, illegal dumping of garbage and toxic wastes, release of ill tortoises, vandalism, handling and harassing of tortoises, illegal collection of tortoises, and anthropogenic fire.

The numerous direct and indirect adverse effects of roads and highways may deplete desert tortoise populations two miles or more away. Research studies conducted by Boarman and Sazaki (2006); Nicholson (1978); Von Seckendorff Hoff an Marlow (1997); and other researchers have detected a statistically significant relationship between road distance and presence of desert tortoise sign. In sum, numerous studies have demonstrated roads and highways have several adverse impacts on desert tortoise populations. Many of these impacts result in habitat degradation, which may significantly reduce habitat quality for tortoises. The cumulative effects of habitat loss

and degradation have been implicated as causes in the extirpation and drastic reductions in tortoise populations in several locations.

More specific to the Ivanpah Valley, the results of several research studies, and our site-specific data, suggest I-15 has adverse effects on the local tortoise population. The proposed Project location would contribute to the cumulative effects of these adverse effects; it conflicts with principles of conservation biology; and it is in direct opposition to the Desert Tortoise Recovery Plan. Therefore, it is my professional opinion that there is ample evidence suggesting locating the Project adjacent to the Interstate would cause less impacts to the desert tortoise (and other sensitive wildlife) than the currently proposed location.

Comment ISEGS-4-7: In proposing its alternative, the Sierra Club provided credible evidence supporting the hypothesis that the land near I-15 supports fewer desert tortoises than the proposed Project site. However, recent desert tortoise surveys had not been conducted for the lands adjacent to I-15, and thus the hypothesis was untested. As a result, I led a field study that was specifically designed to test the hypothesis that tortoises were less abundant near the Interstate than at the Project site. Because desert tortoises would have been hibernating at the time of the study, I used the presence of tortoise burrows as an index of relative abundance. I collected data from both sites (i.e., Project and "I-15"), then used statistical analysis to determine if there was a significant difference between the number of desert tortoise burrows between the two sites.

Burrow density at the proposed Project site was more than double that of the I-15 site (0.67 burrows/mile on the Project site, and 0.30 burrows/mile on the I-15 site). The difference was statistically significant at $P < 0.01$). My results are comparable to those reported by Berry (1984), in which she reported tortoise density estimates in the Project area to be slightly more than double that of lower lying habitat along I-15 (50- 100/sq mile versus 20-50/sq mile, respectively).

Reduced Acreage/Reconfiguration:

Comment ISEGS-6-9a: We recommend that the SDEIS include a full analysis of the Reduced Acreage alternative to provide a comparison of environmental and economic impacts to inform decision making. We also encourage a full analysis of an alternative that combines a Reduced Acreage on-site alternative with renewable energy production off-site on disturbed lands in order to maximize energy efficiencies while minimizing environmental impacts.

Comment ISEGS-5-8: Finally, the ISEGS Project is comprised of approximately 200,000 individual and relatively small heliostats configured around centralized power towers that ultimately feed into the three main power blocks. DEIS at 3-6, 7; see also Figure 3 to Project Description. Given that the Project is actually three individual projects comprised of smaller individual components (unlike a large fossil fuel plant or large hydropower dam), there is inherent flexibility in the final configuration of the

heliostats and powers towers. Moreover, the Project's three separately-owned developments all have separate power purchase agreements with different utilities and separate start up dates. California Energy Commission Evidentiary Hearing, Testimony of John Woolard, January 12, 2010 at pp. 152-53. Consequently, the Project's configuration is sufficiently flexible to analyze a suite of alternatives that meet all of the Project's objectives.

Comment ISEGS-31-3: The Applicant has assisted the BLM and the CEC in the development of possible alternatives to be considered as part of the environmental review process. The Applicant, since the publication of the FSA/DEIS, has continued its efforts to reduce the environmental impacts of the project to the extent practical. The Applicant is submitting, as an attachment to these comments, the Mitigated Ivanpah 3 proposal designed to reduce impacts to the most sensitive biological areas currently included in the FSA/DEIS preferred alternative.

The Mitigated Ivanpah 3 proposal would substantially reduce the footprint of the Ivanpah 3 unit, by about 433 acres, completely avoiding a portion of the northernmost site. Mitigated Ivanpah 3 has the distinct advantage of being located entirely within the existing project site, meaning that the entire Mitigated Ivanpah 3 area has already been closely scrutinized and surveyed for desert tortoise, rare plants, and other biological resources by biologists and botanists, and has had equally stringent review by hydrologists, geologists, and other experts familiar with the extensive work performed on the site.

While the Applicant continues to
believe that the impacts associated with the nominal 200 MW Ivanpah 3 solar plant arrangement are reduced to a level of less than significant with the mitigation proposed in our testimony, the Mitigated Ivanpah 3 configuration would provide numerous additional environmental benefits, and would further avoid and minimize potential impacts. Among the more important benefits, the Mitigated Ivanpah 3 configuration would:

- Further avoid and minimize potential impacts to rare plants by completely avoiding the most densely populated plant communities in the northernmost portions of Ivanpah 3
- Further avoid and minimize potential impacts to desert tortoise, reducing the total tortoise relocation by approximately 15 percent, and providing additional area for relocation that is within the home range of the tortoise, that has a high density or rare plants and that intervenors believe has comparatively high habitat value.
- Further avoid and minimize the potential impacts to a significant number of large ephemeral washes located in the northernmost portions of Ivanpah 3, helping the project meet its Low Impact Design (LID) objectives by allowing stormwater to flow through the project.
- Further avoid and minimize potential impacts to the project areas that would have required the most grading and large rock removal, reducing the area requiring grading by 88 percent.

- Further avoid and minimize the potential Visual Resources impacts associated with glare and reflectivity by reducing the number of power towers in Ivanpah 3 from five to just one tower, and for the entire project from seven to three towers
- Further avoid and minimize the potential Visual Resources impacts associated with glare and reflectivity by reducing the number of heliostats by approximately 45,000.
- Reduce the northernmost portion of the site by 433 acres (approximately 23.6 percent of the present Ivanpah 3 configuration), and the overall footprint of the Ivanpah project by about 12 percent.
- Increase the distance between the site and the mountain range to the north and increasing potential foraging area for various species.

There are, of course, tradeoffs associated with the Mitigated Ivanpah 3 configuration. Most notably, the Mitigated Ivanpah 3 configuration would result in a capacity reduction of the nominal 200 MW that is currently proposed for Ivanpah 3. While the Applicant may be able to make up some of the lost capacity by adjusting the size of the steam turbines for Ivanpah 2 and 3, the total capacity of the three Ivanpah plants would be reduced, on a nominal basis, to approximately 392 MW. The Mitigated Ivanpah 3 proposal would also somewhat reduce construction efforts, with the result of a slight reduction in workforce and economic benefits. Notwithstanding the adjustment of the capacity of the steam turbines for Ivanpah 2 and 3, the Project's boilers – the sources of air emissions – would not change as a result of the refined configuration. Thus, the potential air quality impacts, other than a reduction in the indirect displacement of emissions from conventional power generation, would be unchanged with the Mitigated Ivanpah 3 configuration.

With this background in mind, the Applicant requests that the Mitigated Ivanpah 3 proposal be included in BLM's NEPA consideration of the proposed project. In regards to other alternatives, the Applicant notes that the CEC proceeding has resulted in a detailed discussion of this issue, and that the CEC's discussion has been made available to the public through the same unitary document as the Draft Environmental Impact Statement, which jointly serves as the CEC's Final Staff Assessment. The resulting record clearly establishes that the proposed location is by far the preferable site for this project. The environmental and renewable energy benefits that would be derived from developing the ISEGS at the proposed location vastly outweigh any adverse environmental impacts, which already have been greatly minimized.

Comment ISEGS-9-3: The one topic in the DEIS pertinent to the preserve that appears to have been addressed adequately is viewsheds. We agree with the conclusions presented in the document that direct impacts to visual resources resulting from the proposed project are significant and immitigable if the solar generating project is constructed in the location {s) and configuration proposed. We would like to explore with BLM as part of the supplemental analysis whether any options exist for re-orienting the project or shifting its site location to reduce the project's intrusion on the park's viewshed.

Comment ISEGS-6-13: We also note that the Project area has increased by about 673 acres from 3,400 to 4,073 acres, comparing the Applicant's initial plans in the Application for Certification (AFC) to the current plan of development The first increase of 300 acres is associated with the increase in spacing between heliostats in order to avoid shading. The second increase in the Project area of 365 acres is a result of the proposed stormwater detention ponds. These have since been eliminated from the Applicant's proposal without any re-adjustment downward in the Project area (at pg. 6.2-8). The SDEIS should apply this acreage to reduce the size of the Project and thus, reduce the environmental impacts on the Project site. For example, there are high densities of rare plants on the project site that should be avoided. In addition, facilities should be located outside of waters. The SDEIS should provide additional details, including acreage or number of species protected, as a result of these reduced size alternatives. This analysis should be incorporated into the conceptual avoidance approach described at page 6.2-41. A voidance of sensitive plant species should be an important consideration in the design and configuration of the heliostat layouts.

Private Land:

Comment ISEGS-6-9b: Similarly, we recommend that the Supplemental DEIS fully evaluate a Private Land Alternative that combines larger private land parcels with previously disturbed public lands.

Comment ISEGS-7-8: BLM dismissed the alternative of locating the project on private land because it would have required the project proponent to complete "option-to-purchase agreements with multiple private owners (FSA/DEIS, page 4-19)." In the case of the Harpers Lake private land option, which "had sufficient land for a 400 MW facility with the configuration of the proposed project," it was rejected by the proponent because "one of the major land owners at the site requested too much money (FSA/DEIS, page 4-20)." This dismissal is unacceptable. The California Energy Commission ("CEC") and BLM should have at least independently analyzed the project proponent's statements concerning cost. Considering the overriding policy impetus toward siting renewable facilities on private degraded land, the agencies have a mandated to fully consider a reasonable range of private land alternatives. The Renewable Energy Transmission Initiative ("RETI") recently issued the following statement:

> RETI stakeholders agree that utilizing disturbed private lands close to existing infrastructure for renewable energy development should be a priority for the state. County governments and state agencies are in the best position to develop mechanisms to consolidate the ownership of extensively-parcelized lands that have excellent renewable resource potential. For this reason, the RETI Phase 2A Final Report includes a formal recommendation that the California Energy Commission, in conjunction with other state and federal agencies, counties and the renewable energy industry, develop and implement a strategy for consolidating ownership of disturbed or degraded private lands for renewable

> energy development on an expedited basis (RETI Phase 2A Final Report, page 2-33).

RETI's prioritization of private lands for renewables siting creates a mandate for CEC and BLM to analyze a reasonable number of private lands alternatives. BLM should not preclude a private land alternative or any other alternative from analysis because it is not within the agency's jurisdiction. In fact, NEPA regulations require inclusion of reasonable alternatives not within the jurisdiction of the lead agency. 40 C.F.R. §1502.14(c).

Comment ISEGS-30-1: NPCA understands that the Bureau of Land Management (BLM) and California Energy Commission (CEC) accepted the application for ISEGS in concert with existing land-use designation (Multiple Use Class L), without the guidance of a systemic process to ensure that projects were sited in locations that would minimize environmental loss, or impact to National Park Service units such as Mojave National Preserve. The subsequent development of Solar Energy Study Areas in the California Desert Conservation Area (CDCA) and an eight-state Solar PEIS process demonstrates the Department of the Interior's desire to balance the incentivized boom of renewable energy generation and transmission applications with the persistence of the natural character and retention of resources, wildlife and historic corridors, and unique natural values of the region. The Solar Energy Study Areas provide at least a framework for studying the development of solar energy projects within the California Desert. It should be noted that the private land alternative offered in the DEIS is consistent with the boundaries of the BLM's Pisgah Solar Energy Study Area. The private land alternative in the DEIS is also notable for minimizing environmental impact to pristine land, threatened species, and resource impact to Mojave National Preserve.

Distributed Generation:

Comment ISEGS-22-5: The current proposal is not adequate, a mitigation plan should be stated and have public review before any project is granted the use of 4000 public acres. A better solution for responsible energy policies would be to have localized renewable energy sources such as rooftop solar. I have spent a great deal of time in this area and have found only a handful of private solar applications. I have a Photovoltaic system on my house in Montana, and I know how effective it is. At my northern latitude I produce enough electricity for nine months of the year.

Comment ISEGS-21-4: The FSA did not adequately analyze the private land and distributed generation alternatives to the Ivanpah SEGS. There are large blocks of disturbed, private lands in the Antelope, Imperial, Coachella, and Palo Verde Valleys in California, as well as significant acreage in Arizona. Some of these areas could provide adequate acreage for Bright Source's 400 MW. But as many of the other current solar proposals show, 400 MW of generation capacity is not required to be economically feasible. Less generating capacity is possible. Regarding distributed generation, there is vast potential for renewables, up to 2,000 MW in San Bernardino County alone, according to the FSA. A $2 billion investment (the estimated cost of the Ivanpah SEGS)

in rooftop solar could produce at least 400 MW of generation capacity in the same amount of time or less than it will take to construct the Ivanpah SEGS. Therefore the CEC and BLM should favor the combination of these alternatives, and choose the No Action Alternative for the Ivanpah SEGS.

Comment ISEGS-2-36e: 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 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.

Comment ISEGS-1-16a: Although it is not the job of the BLM to list private land alternatives, there is little logic found in the purpose and need for the project as well as the best possible management options for public lands. Many renewable project developers have failed to consider reasonable or viable alternatives that could serve as solutions that everybody could live with. In the case of this particular project, cultural resources, storm water drainage erosion, endangered species, viewscapes from National Parks and wilderness areas could all be avoided with a distributed generation alternative.

Comment ISEGS-1-16b: The trend in the rest of the world is away from large stand-alone power plants, such as ISEGS, to add ons or augmentation to existing generation. This project is not needed.

Outside Ivanpah Valley:

Comment ISEGS-1-15: We support the No Action Alternative, but we request at least one viable third alternative away from the site and out of Ivanpah Valley be provided in the EIS.

Phased Approval:

Comment ISEGS-2-36d: Other alternatives are clearly available and should have been considered. Although the BLM rejected out of hand many of the alternatives discussed in the FSAIDEIS, 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).

Wind:

Comment ISEGS-6-11a: EPA supports the development of solar and other forms of renewable energy within Solar Energy Zones (SEZ) and other locations. As a Cooperating Agency for the joint DOE/BLM Solar Programmatic DEIS, and in comments on individual state efforts such California's DRECP, EPA will continue to urge BLM to consider which energy source has the potential, at each specified location, to generate the greatest amount of power with the least environmental impact. For example, if the location of a SEZ overlaps with an optimum location for wind energy development, consider whether the development of solar energy at that location would likely result in greater or lesser adverse environmental impacts than would be expected from the generation of the same or a greater amount of power from wind energy at that location. We urge BLM and DOE to ensure that the outcome of the Solar Programmatic DEIS does not is courage or preclude the development of other renewable energy sources in locations where such development may be more appropriate, in terms of efficiency and relative environmental impacts, than development of solar energy.

Combination of Natural Gas with Distributed Generation:

Comment ISEGS-1-16c: When clouds obscure the field, the natural gas boilers will have to be used, and this increases carbon emissions with little actual power generation for the amount of land used. But the boilers cannot be stopped and re-started quickly for clouds passing over in a few minutes. The boilers will be used only at partial load, inefficiently. Using the boilers during cloud clover would generate lower pressure steam, thus generating less electricity. Much more benefit could be gained from simply using natural gas at maximum efficiency with fully modern combined cycle natural gas plants and hybrid power plants in load centers, combined with distributed generation.

Previously Disturbed/Developed Sites:

Comment ISEGS-6-11b: Although we support BLM in its efforts to identify the SEZs, we also recognize that there are other alternatives and venues that may be preferable from an ecological perspective. For example, the EPA has worked closely with the DOE's National Renewable Energy laboratory (NREL) to develop maps showing contaminated lands and mining sites with renewable energy generation potential. These maps were developed in conjunction with the RE-Powering America's Land: Renewable Energy on Contaminated Land and Mining Sites program, which was launched by the EPA Office of Solid Waste and Emergency Response (OSWER) in September 2008. Under this initiative, EPA is taking a multipronged approach to encouraging reuse of EPA-tracked lands into clean and renewable energy production facilities. EPA has developed a Renewable Energy Interactive Mapping Tool that utilizes Google Earth to display these sites. We estimate that there are approximately 480,000 disturbed and contaminated sites and almost 15 million acres of potentially contaminated properties across the United States. Many of the contaminated properties are suitable for

renewable energy development and have existing transmission capacity and infrastructure in place, as well as adequate zoning.

Recommendations:

- EPA strongly encourages BLM to promote the siting of renewable energy projects on disturbed, degraded, and contaminated sites, before considering large tracts of undisturbed public lands. P. 12

Greenhouse Gas Strategies:

Comment ISEGS-2-33a: 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." FSNDEIS 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 C02 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.

Requiring No Plan Amendment:

Comment ISEGS-2-3a: 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. 5 1712(c). As stated clearly in the CDCA Plan...CDCA Plan at 5-6. The CDCA Plan also provides several overarching management principles...

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.

Sites with no Rare Plants:

Comment ISEGS-8-13: The NEMO Plan set the goal for special status species as "Populations and their habitats are sufficiently distributed to prevent the need for listing" (NEMO Plan at 2-6). For rare plants and special status plant communities the FSA/DEIS provides too little analysis of impacts, inadequate discussion of alternatives that could avoid impacts, and inadequate information about the proposed mitigation strategy and how it will fulfill the objectives laid out in NEMO. The lack of fall surveys likely under-represents the full suite of rare plant taxa occurring on site. The FSA/DEIS concludes that the ISEGS project will result in "impacts to Mojave milkweed and Rusby's desert-mallow" that "would remain significant in a CEQA context even after implementation of the special-status plant impact avoidance and minimization measures described in Energy Commission staff's proposed conditions of certification." (FSA/DEIS p. 1-18) The best way to avoid significant impacts to rare plants occurring at this site is to relocate the project to another, lower resource value site but this was not considered by the BLM in the FSA/DEIS.

Response: *BLM has reviewed and evaluated all public comments received on the DEIS, and also evaluated information received through the CEC hearing process. Based on this information, BLM reviewed the identification, screening, and analysis of alternatives that was presented in the DEIS. As a result of this review, BLM determined that two alternatives which had been screened and eliminated from further evaluation in Section 4 of the DEIS (the I-15 Alternative and the Reduced Acreage Alternative) merited more detailed evaluation. As a result, BLM published the SDEIS on April 16. The SDEIS presented a detailed, resource-by-resource evaluation of a version of the I-15 Alternative (called the Modified I-15 Alternative), and a reduced acreage alternative (called the Mitigated Ivanpah 3 Alternative).*

In addition, BLM evaluated the 21 other alternatives, including several (Private Land, Distributed Generation), that are not within BLM's scope of authority. Following the review of the public comments, BLM reviewed the rationale presented in the DEIS for eliminating the 21 other alternatives from detailed evaluation, including several proposed in the public comments, and concluded that the rationale for their elimination was explicitly provided, and was sound. In some cases, such as Distributed Generation, additional information has been provided.

Finally, BLM noted that the public comments identified two alternatives (Ivanpah Playa and Phased Approval) that were not included in the screening analysis in Section 4 of the DEIS. Because both of these alternatives recommended in the public comments have merit, they have been added to the revised screening analysis in Section 4 of the FEIS.

Conservation:

Comment ISEGS-2-36g: 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).

Response: *DOE's purpose and need for action is to comply with its mandate under the Energy Policy Act of 2005 (EPAct 05) by selecting eligible projects that meet the goals of the Act. DOE's decision in the context of the EPAct 05 is whether to approve or deny a Federal loan guarantee to Bright Source Energy for the Ivanpah Solar Electric Generation Project, and therefore DOE's reasonable alternatives are limited to the loan applicant's proposed project, based on the project attributes described in Bright Source Energy's November 18, 2008 loan guarantee application, and the no-action alternative.*

2.4 Comments on the Alternatives Identification and Screening Process

Comment ISEGS-6-9c: While the DEIS includes a qualitative discussion of the reasons for eliminating alternatives, it does not identify a clear set of quantitative criteria that were used to screen all alternatives in a similar manner, For example, no criteria outlining a cut-off point for competitively priced renewable energy, minimal plant efficiency rates, level of air, water, or habitat impacts were provided. If such criteria were used in the California Energy Commission's Preliminary Staff Assessment, the criteria and resulting quantification of impacts should be incorporated into the SDEIS. Also, it is unclear how unquantified environmental impacts (such as a reduction of air pollutants, reduced water use, reduced impacts to endangered species) may have been considered in the alternatives analysis. Similarly, it is unclear which alternatives may have been eliminated as a result of objective #3 and the lack of sufficient time to conduct adequate environmental evaluations.

Recommendations:

- Provide a clear discussion of the reasons for the elimination of alternatives that are not evaluated in detail and provide a clear set of quantitative criteria to screen all alternatives. The potential environmental impacts of each alternative should be quantified to the greatest extent practicable (e.g., acres of wetlands impacted, tons per year of emissions produced, etc.). For example, the SDEIS should include a matrix that rates each of the alternative on each of the selection criteria and include this information in the Executive Summary. The matrix should also include a description of whether or not an alternative met each of the Project's objectives.
- Clearly identify the economic criteria used for analyzing alternatives. As appropriate, fully consider alternatives rejected in the earlier analysis. The SDEIS should also include a concise summary of the cost-benefit analysis of the Proposed Project and the various alternatives. This information should also be included in the Executive Summary.
- Include analysis to substantiate the claim that Condition of Certification BIO-18 would achieve the same objective as the Reduced Acreage alternative.
- Discuss how unquantified environmental impacts (such as a reduction of air pollutants) have been determined in the environmental analysis.
- Discuss which alternatives were eliminated as a result of project objective #3 and the lack of sufficient time to conduct adequate environmental evaluations.
- Include a full analysis of the Reduced Acreage alterative to provide a comparison of environmental and economic impacts to inform decision making. We also encourage a full analysis of an alternative that combines a Reduced Acreage on-site alternative with renewable energy production off-site on disturbed lands, and that maximizes energy efficiencies while minimizing environmental impacts.

Comment ISEGS-5-4b: Instead, absent any explanation, the DEIS cryptically claimed that some 22 additional alternatives had been considered and rejected. DEIS at 4-1. The BLM was required to explain its reasoning for eliminating alternatives. 40 CFR § 1502.14(a). The whole point of a full alternatives analysis is to foster “informed decision-making and informed public participation.” City of Angoon v. Hodel, 803 F.2d 1016, 1020 (9th Cir.1986). Without substantive, comparative environmental impact information regarding other possible courses of action, the ability of an EIS to inform agency deliberation and facilitate public involvement is gone. See Baltimore Gas & Elec. Co., 462 U.S. at 97. NEPA requires the development of “information sufficient to permit a reasoned choice of alternatives as far as environmental aspects are concerned.” Colorado Environmental Coalition v. Dombeck, 185 F.3d 1162, 1174 (10th Cir. 1999). It follows that a court will hold an agency’s decision as arbitrary and capricious if it unreasonably eliminates alternatives, especially absent any explanation. The BLM violated NEPA by not considering alternatives consistent with the Project’s full purpose and need.

Comment ISEGS-31-5: The overall strength, in terms of nature and scope, of the Alternatives analysis in the FSA/DEIR is substantial. The FSA/DEIS’s Alternatives

analysis use of the phrase that an alternative was “eliminated from further consideration” is misleading in that regard, as the analyses in the joint document were quite thorough. It would be difficult to conclude that the DEIS’s Alternative’s analysis is anything other than robust, in light of the facts that:

1. The Siberia alternative analysis is 38 pages long and considers all subjects
2. The Broadwell alternative analysis is 40 pages long and considers all subjects
3. The Private Land alternative analysis is 24 pages long and considers all subjects
4. I-15 alternative analysis is six pages long; it considers only a few subjects but is justified in doing so as there was little detail to show feasibility. This analysis was substantially supplemented through direct and rebuttal testimony in the CEC process
5. Ivanpah Site A alternative analysis is 15 pages long and considers all subjects
6. Ivanpah Site C alternative analysis is 16 pages long and considers all subjects
7. The West of Clark Mountain alternative analysis is an additional 2 pages
8. The Reduced Acreage alternative analysis is 3 pages long, and Applicant is effectively extending and supplementing that analysis with its Mitigated Ivanpah 3 proposal

Comment ISEGS-31-4: Substantial information in regards to alternatives is included in the portions of the record of the CEC proceeding that the Applicant is providing to the Bureau for inclusion in its own administrative record. The Applicant's testimony fully supports the proposed project as the preferred alternative, and the Mitigated Ivanpah 3 proposal has been developed to be consistent with the analyses presented in the CEC testimony and to a large degree of intervenors as well.

In addition, reference should be made to the direct and rebuttal testimony of John Carrier, Steve De Young, Gary Rubenstein, Steve Hill, Tom Priestley, Geoffrey Spaulding, Arne Olson and Roger Gray regarding Alternatives. This testimony clarifies the I-15 alternative considered by the CEC, which would relocate the project closer to the interstate highway just south of the project, would not be preferable to the proposed project location. In the words of the CEC staff, this alternative “would not avoid or lessen project impacts overall.” (CEC Staff Exhibit 305, p. 8.) This testimony also demonstrates that rooftop photovoltaic (PV) is not a feasible alternative to the Ivanpah project, but should be thought of as a complement to, and not a substitute for, the project. In particular, the testimony of Arne Olson rebuts the suggestion that central station projects like Ivanpah and distributed PV are interchangeable.

Comment ISEGS-2-36a: 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. 5 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 Consew. 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.

Comment ISEGS-30-16: A more comprehensive study of alternatives is required. Alternatives should incorporate more up-to-date information about Solar Energy Study Areas, private land alternatives, and sites that offer less impact to imperiled species and degradation to the resources of Mojave National Preserve. Any preferred action alternative should discuss how ISEGS in its current location is a superior alternative to alternate locations. The No Action alternative must include comprehensive information about proposed projects that provide similar benefits to ISEGS at reduced environmental cost. The alternatives should list statewide proposed projects, locations, and generation capacity. This allows the public to understand where we stand relating to the need to meet RPS goals, and thus the need to develop ISEGS.

Comment ISEGS-6-11c: The SDEIS should discuss any tools BLM is using to prepare the alternatives analysis for this Project, including the use of the Renewable Energy Interactive Mapping Tool.

- SDEIS should include information regarding all criteria used to evaluate the ISEGS site and alternatives.

Comment ISEGS-33-4: The FSA must include economic analyses of the proposed project and alternatives. Economic considerations are mentioned in numerous places in the documentation. This is understandable, since the project probably would not exist without economic justification, and a cost-to-benefit analysis. An economic analysis is necessary to evaluate the project, and to compare it with alternatives. We are forced into the terms 'cost more', or 'cost less', with no quantification, without economic analysis. Intelligent opinions and decisions cannot be made based on such nonspecific terms.

- The discussion of the CDCA plan amendment on page 2-12 specifically includes as one of the required determinations that the DEIS do economic evaluation:...
- The Alternatives section, on page 4-1, recognizes the validity of economic analysis:...
- The Project Objectives section on page 4-4 includes economics in construction, operation and competitive pricing:...
- Page 4-11, in the Site Selection Criteria discussion in the Alternatives section recognizes economic viability as one of the criteria:...
- NEPA requires that alternatives be practical and feasible from the technical and economic standpoint (emphasis added) .. As referenced on page 4-1 of the FSA, NEPA guidance is:...
- The bottom of page 4-79, in the Alternatives section, requires an economic analysis to support the conclusion. By stating only that lower PV costs are needed, the reader must accept without analysis that this is true, is not told of the magnitude of the cost difference, and is not told of the expected future PV costs. Note that the popular press commonly talks of rapidly decreasing PV panel costs, and increasing efficiency...

- Page 4-65 discusses the reasons for elimination of rooftop solar as an alternative. One reason given is the uncertainty of subsidies for rooftop solar. With no economic analysis it is impossible to compare the subsidy status of rooftop solar with the subsidy status for the proposed CSP technology.

It is tempting to say that the project is necessary, no matter the cost, for the public good of reducing global warming, currently accepted as a necessary goal. But it is still a matter of degree. If the project provided only enough power to keep a 100 watt bulb lit, the balance would not justify the environmental cost. Or if it provided enough energy for all of California for the next 50 years, the balance would easily justify the environmental cost.

Additionally, since the project is subsidized with public money and will use public land, transparency demands that the economics of the project be revealed to the public.

An economic analysis should include comprehensive details, including:

- Cost of construction.
- Cost of financing the construction.
- Cost of land usage - purchase or lease.
- Operation costs when the facility is up and running.
- Insurance costs.
- Revenues from electricity sales.
- Taxes
- Government subsidies
- Other costs and revenues.

Comment ISEGS-6-10: The DEIS indicates the "ISEGS project 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" (at pg. 6.2-1). As additional alternatives are considered for evaluation in the SDEIS, as well for future projects, EPA continues to recommend the identification of locations that have been previously disturbed or contaminated. The SDEIS should discuss the criteria BLM used to identify the ISEGS site as a suitable location for renewable energy. Specifically, the SDEIS should include the full array of criteria that BLM uses to compare sites, such as previous disturbance, protected species, habitat values, proximity to infrastructure, energy potential, etc. The SDEIS should discuss any methods or tools BLM has used to identify and compare locations for siting renewable energy facilities.

Comment ISEGS-2-11a: 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%. 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 both summer and winter. 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.

Response: *The comments on the alternatives screening process raise two primary issues: 1) that BLM has not explained the rationale for rejection of the alternatives; and 2) that the presentation and evaluation of alternatives in Section 4 of the DEIS should include a quantitative comparison, including comparison of life-cycle costs, energy output, greenhouse gas emissions, environmental impacts (such as tons of emissions or acres of wetlands impacted), and other criteria.*

CEQ regulations at Section 1502.14(a) acknowledge that the alternatives analysis needs to be a multi-step process, with some alternatives being eliminated from further consideration without the need for detailed study. The regulation requires that these alternatives be identified and evaluated, and that the rationale for their elimination be provided – however, it does not require detailed evaluation of alternatives that have not been identified as reasonable alternatives. The identification and preliminary screening evaluation of alternatives in Section 4 of the DEIS is consistent with this requirement. The text on Pages 4-9 through 4-11 generally describes some of the technological and jurisdictional rationale for why some classes of alternatives were determined to not be reasonable or feasible alternatives to meet the purpose and need for the proposed project. Then, instead of simply dismissing these alternatives, the DEIS goes on to describe and present a resource-by-resource summary of the associated impacts of many of these alternatives, and ends each subsection with a paragraph titled "Rationale for Elimination". Although these alternatives were not carried into the resource sections for detailed analysis, Section 4 does provide enough information, even on those alternatives determined not to be reasonable, to explain why the alternative was not carried forward for more detailed evaluation, and to allow a comparison of impacts between the alternative and the proposed project.

With respect to the second item – BLM agrees that quantitative comparison of alternatives is a critical part of a detailed evaluation among feasible alternatives. However, quantitative comparison is not appropriate for all levels of an alternatives analysis. As discussed above, CEQ's NEPA regulations acknowledge that alternatives analysis is a multi-step process in which each step becomes more and more detailed. The identification and evaluation of impacts associated with alternatives in Section 4 of the DEIS was intended to be a preliminary screening evaluation to identify those alternatives which could reasonably meet the purpose and need for the proposed project. The rationale for the elimination of alternatives was provided, and clearly marked as such. In all cases, the rationale for elimination was based on qualitative factors, and detailed quantitative and economic comparison would not provide any information that would further inform the decision regarding which alternatives to carry through for more detailed analysis. In the SDEIS, BLM made the decision to perform

the more detailed analysis on two additional alternatives – the Mitigated Ivanpah 3 Alternative, and the Modified I-15 Alternative. In both cases, the more detailed evaluation in the resource discussions included quantitative comparison of impacts, where possible. This included estimates of disturbed acreage, water usage, acres of Waters of the State, numbers of tortoises potentially impacted, air emission concentrations, and distances from potential receptors.

Comment ISEGS-7-9: Many of the potential alternative locations were eliminated from consideration due to other applicants, or in some cases, the same applicant having filed an application with BLM to develop the property. While BLM has yet to review or act on these applications, BLM has inexplicably determined that such applications confer a property right in federal lands, stating that "existing applications for renewable projects give applicants prior rights to BLM-administered lands (FSA/DEIS, page 4-11)." This also appears to be without any regard to the ultimate viability of any such projects. Beyond the panoply of legal issues that this raises, the policy it promotes – encouraging a race to file applications in an effort to claim territory is antithetical to efforts to responsibly develop solar energy projects while minimizing impacts to wildlife and other resources.

Comment ISEGS-7-10: Even more inexplicable is BLM's elimination of the Siberia East Alternative site based on the existence of two prior applications having been filed – both by Brightsource – the same applicant as for this ISEGS project. BLM's stated reason for eliminating that alternative from analysis was that "Brightsource maintains active applications with BLM and desires to develop both sites. As such, it has been eliminated from potential selection (FSA/DEIS, page 4-13)." This reasoning by BLM fails to meet basic standards of logic, let alone the detailed requirements of NEPA. See Simmons v. United States Army Corps of Eng'rs, 120 F.3d 664, 666-7 (7th Cir. 1997) ("One obvious way for an agency to slip past the strictures of [NEPA] is to contrive a purpose so slender as to define competing 'reasonable alternatives' out of consideration (and even out of existence). The Federal Courts cannot condone an agency's frustration of Congressional will. If the agency constricts the definition of the project's purpose and thereby excludes what truly are reasonable alternatives, the *environmental impact statement+ cannot fulfill its role.").

Response: *Based on a review of the comment and the associated text, BLM has deleted the statements that an existing application conferred a property right, and that this was a valid reason to not perform a detailed evaluation of the alternative. The rationale provided in the DEIS for the elimination of the Siberia East site, that it did not provide any substantial environmental advantages over the proposed site, remains as the rationale for elimination in the text of the FEIS.*

2.5 Specific Technical Comments Made on the DEIS Text

Comment ISEGS-33-10a: Site Selection Criteria, page 4-10 The applicant's AFC restricts alternatives to areas with high solarity. I appreciate that the DEIS considers other areas and non-solar technologies, as required by NEPA.

Comment ISEGS-33-10b: Siberia East Alternative, page 4-12 This looks like it is in Senator Feinstein's California Desert Protection Act of2010, introduced in late December, 2009. The bill precludes solar installations. The site should not be considered until the bill is resolved, and because it may not be available if the provision in the bill as introduced becomes law. Broadwell Lake Alternative, page 4-12 As with Siberia East, this looks like it is in Senator Feinstein's California Desert Protection Act of 2010, and should not be considered until the bill is resolved.

Comment ISEGS-33-10c: Private Land Alternative, Daggett Area Something seems amiss here.

- 1-15, south side adjacent: Figures 5A and 5B show the site, adjacent to 1-15, on the south side.
- 1-40 north side adjacent: Text on p. 4-20 identifies the site as the location of the 'first two power tower facilities', presumed to be SEGS I and SEGS II, and says the site is too close to the BarstowDaggett airport. But SEGS I and SEGS-II are adjacent to 1-40, on the north side. As stated on page 4-20. SEGS I and II are indeed close to the airport. What, then, are the sites shown in figures 5A and 5B? Which is the evaluated alternative. The confusion makes evaluation and comment of the alternative difficult. It's possible that proximity to the airport is not a consideration.

Comment ISEGS-33-10d: Parabolic Trough Technology, p 4-55
Disturbed area seems inconsistent: Approximately 2000 to 3200 acres would be required ... permanent loss of desert habitat Next paragraph: ... somewhat greater acreage may be required … Greater than the proposed ISEGS, or greater than the 2000-3200 acres?

Comment ISEGS-33-10e: Linear Fresnel Technology
The technology is eliminated because it is proprietary to Ausra. The statement on p 4-60: This technology ... it is not available to the ISEGS applicant is not supported by evidence or a statement that Ausra has refused to supply Ivanpah. It seems reasonable that Ausra would be willing to expand their business by supplying technology. Please provide evidence that BrightSource has made good effort to use Ausra as a supplier, has been refused, and why Ausra would be unwilling. The enticing advantage is the substantial reduction (approx Y2) in disturbed land described in the Linear Fresnel discussion. This advantage warrants a more intensive investigation and analysis.

Comment ISEGS-33-10f: Solar Photovoltaic Solar voltaic appears to be eliminated for insufficient reason. Instead, the explanatory text makes it sound like photo voltaic could be a better alternative. Page 4-62 states solar photovoltaic was eliminated from consideration because it would not reduce major impacts to several characteristics of the alternative. These reasons are stated with no analysis and are not supported by the descriptive text preceding the elimination opinion. Reasons given for elimination of photo voltaic (pA-62, Rationale for Elimination):

1. Visual prominence. The reasoning is invalid. The proposed technology has vastly greater visual prominence: It has light collector towers, each 450 feet high - as tall as a 45 story building - and each bright as the sun. It has several thousand acres of bright heliostat mirrors. The photovoltaic field visual prominence would be insignificant by comparison. "Glare would not be created (p. 4-65, 6th para)", and the tallest component mentioned is the transmission line interconnection. Although not stated in this solar voltaic section, the distributed solar section confirms that PV glare has less visual impact. Page 4-64: Because most PV panels are black to absorb sun, rather than mirrored to reflect it, glare would not create visual impacts as with the power tower, Fresnel, and trough technologies. To eliminate this alternative based on visual prominence is wrong.

2. Extent of land and roads required. No analysis is given for this opinion. Instead, the explanatory text indicates more land might not be required. Page 4-60, next to last paragraph: Because PV technologies vary, the acreage required per MW of electricity produced from a large solar PV power plant is wide ranging and likely to change as technology continues to develop. The land requirement varies from approximately 3 acres per MW of capacity for crystalline silicon to more than 10 acres per MW produced for thinfilm and tracking technologies (NRDC 2008). Therefore, a nominal 400-MW solar PV power plant would require between 1,600 and 4,000 acres.

    - This indicates photo voltaic area requirement could be as low as 1600 acres, 40% of the proposed power tower. This is very significant, and ignored in the elimination conclusion.
    - Technology is changing. The promise is not analyzed. New technology would most likely result in lower land area needed.

3. More extensive grading. Page 4-61, last paragraph: "Because solar PV facilities require land with only 3 percent slope and the solar panels are grouped more densely together, it is likely that more grading would be required for a solar PV facility than for a solar power tower facility to establish manmade stormwater conveyance channels."

    - No explanation is given as to why the different drainage grading applies to the proposed and photo voltaics.
    - No analysis is given to determine the amount of 'more grading'.
    - The 3% slope requirement used as the basis for more grading is invalid since the slope of the proposed site is approximately 1.5% (as scaled from the USGS Mesquite Lake 1: 100,000 map).

4. More extensive storm water management Again, no explanation or analysis is given. Distributed Solar Technology -- Rooftop Solar Page 4-62: Something is wrong. In order to be a viable alternative to this project, there would have to be a sufficient number of panels to provide 400 MW of capacity. California currently

has 441 MW of distributed solar PV systems which cover over 40 million square feet (CPUC 2008b). The proposed 400 MW project covers 174 million square feet (4000 acres). California gets a few more MW from 23% of the area -- 441 MW from 40 million sq ft. Maybe the 441 MW is the actual power output - average over a year - not the maximum instantaneous output, the rating method for the proposed CSP. The 23% is in the range of capacity factors for CSP solar installations. Distributed Solar Thermal Systems The proposed CSP technology uses 4000 acres to generate 400MW - 10 Ac/MW. The three alternatives discussed use less:

4 Ac/MW	eSolar 5MW	20 ac/ 5 MW
3.5 Ac/MW	eSolar 46MW	160 ac/46MW
2.5 AC/MW	Andasol 1	127 ac/50MW
Compare With		
10 AC/MW	Ivanpah proposed	4000ac/ 400MW

Although not mentioned in the FSA, I suspect the two eSolar and the Andasol facilities use wet cooling, which reduces efficiency and increases the Ac/MW figure. But, it's a big jump from 2.5 - 4 Ac/MW to 10 Ac/MW. This potential efficiency level should not be discarded lightly. eSolar is characterized as a distributed technology, probably because of the relatively small 20 ac size of their demonstration facility. But eSolar facilities are modular, as explained by the company. The single, small facility is one configuration. Multiple modules at the same site can achieve characteristics of larger installations, since the modules can share the same infrastructure. eSolar appears to be a viable alternative and should be not be restrained to consideration as distributed only.

Response: *Each of the specific comments regarding the alternatives discussions in Section 4 of the DEIS were reviewed by BLM. In each case, the existing text was reviewed, and if necessary, text changes were made in the FEIS to address the comment.*

Comment ISEGS-33-10g: Rationale for Elimination (starting page 4-64) The reasons for elimination appear invalid.

- ... require even more aggressive deployment of PV...This is not a reason to eliminate. Aggressive deployment is not to be feared. The current CSP proposal is aggressive, but is not eliminated for that reason.
- Additional legislation ... may be required. With no further explanation, the 'may be' has no meaning. The implication is that requiring new legislation is enough to eliminate the alternative. I have a more optimistic view, that if new legislation is warranted, it will happen. The California legislature has shown deep interest in energy. If a new idea is warranted, they would not shy away because new legislation would be required.
- Subsidies The discussion reviews subsidies and their positive effects on the technology. The last sentence talks of the uncertainty of continued subsidies.

Since this discussion is in the Rationale for Elimination section, I presume the opinion is that the uncertainty outweighs the positive effects sufficiently to discard the alternative. I disagree with this basically negative opinion. Also, since the FSA presents no economic analysis of the proposed project, it is impossible to evaluate the extent and uncertainty of subsidies for the proposed project.

- Feed-in Tariffs The discussion describes feed-in tariffs. It does not state, or imply, how FITs are cause for elimination of the technology. There does not appear to be a reason to put this discussion in the Rationale for Elimination section.
- Manufacturing and Installation Costs As with FITs~ there is a short, general discussion. It then concludes" ... would require a large number of retrofit installations." (Page 4-65, bottom), without explaining the conclusion, or why the conclusion is cause for elimination of the technology. The next sentence: No matter how it is installed, relying heavily on PV greatly increases the total cost a/meeting state renewable energy and GHG targets. Again, there is no explanation of the' greatly increased cost'. There is no way to evaluate the validity of the conclusion. And with no economic analysis of either technology, there is no way to compare.
- Manufacturing Scaleup, and the final paragraph in the Rationale for Elimination section The discussion says the technology is increasing rapidly, and that PV manufacturing is ramping up fast. There must be something good going on here. The FSA makes no attempt to discover, or participate. Money and materials has to grow fast. Page 4-66: the availability of financing and raw material supply would need to increase proportionally to match an increased demand. This is far from an insoluble problem. New, viable technologies very often ramp up fast to satisfy demand. Often the result lowers manufacturing costs and expands supply to meet more than demand, further lowering costs. We should not ignore such efficiencies.

Response: *The following summary of information regarding the potential for distributed solar to be a viable alternative to the proposed ISEGS project was provided by the Energy Commission, from the Opening Brief on April 1, 2010.*

The Center for Biodiversity (CBD) provided testimony that the FSA had incorrectly dismissed distributed solar photovoltaic (DPV) generation as a feasible alternative. (Exh. 939 [Testimony of Bill Powers, P.E.].) This testimony contends that there is the feasible potential to site 400 MW of DPV in California at a cost that is lower than ISEGS, that Staff used obsolete numbers overstating the cost of DPV, and that the entire renewable "gap" for meeting a 33 percent Renewable Portfolio Standard (RPS) requirement by 2020 might feasibly and economically be met with DPV. (Ibid.) By implication, the testimony appears to contend that no additional central station power is required in California, and that DPV should be sufficient for all future electric generation needs.

The CBD testimony is serious and well-informed, but decidedly optimistic. The RPS requirement is a very aggressive one: that the state's utilities provide 33 percent of all

electric energy generation from renewable sources such as solar, wind, and geothermal by 2020. California is currently far from achieving that goal; the renewable "net short" for meeting the RPS requirement is estimated to be between 45,000 and 75,000 gigawatt hours (GWh), depending on assumptions made for electricity demand as well as energy efficiency, rooftop solar, and various other assumptions. (2009 Integrated 24 Energy Policy Report (IEPR), p. 187.) RPS is based on a utility's retail sales, so "behind the meter" renewables such as roof top solar are not counted in the 33 percent requirement (although its contribution does reduce the overall requirement by reducing retail sales). (2008 Integrated Energy Policy Report Update, p. 18.)

The contribution from DPV, however defined, shows great future potential, but fairly paltry concrete contributions thus far. The IEPR cites the same enormous DPV potential that CBD cites, but notes that this potential has been "largely untapped." (2009 IEPR, pp.198-199.) The IEPR reports a total of 560 MW of installed DPV, much of it not eligible for RPS, and reports that the IOUs have "over 180 MW of projects 20 MW or smaller . . . [which is] less than two percent of IOU RPS contracts." (Ibid.) CBD's witness agreed that the current total contribution of DPV is roughly 500 MW. (01/12/10 Tr., p. 285.)

Applicant provided rebuttal testimony raising additional problems with CBD's DPV alternative testimony. Applicant's testimony was provide by Arne Olson, who is currently advising the California Public Utilities Commission on its Long Term Procurement Planning Process and particularly on integrating DPV generation to meet RPS needs. (Exh. 85, p. A-7.) That testimony pointed to the logical fallacy of arguing that any 400 MW of DPV was an alternative to ISEGS, as the purpose of ISEGS is to satisfy an RPS goal that requires more than an order of magnitude more generation than ISEGS (or a 400 MW alternative) would provide. (Exh. 85, pp. A-9, 10.) It makes no sense to reject all solar thermal facilities (or in fact, all wind or natural gas facilities) merely on the supposition that someone could provide 400 MW of DPV somewhere else.

To meet its RPS goals, California will need renewable generation from a variety of sources, for thousands of MWs. DPV will not likely be sufficient to fill the entire "net short" for RPS. (Ibid.) Staff's cost estimates for DPV were reasonable. (Id., at pp. 16-19.) Feasibility issues arise for interconnecting larger and larger amounts of DPV. (Id., at pp. 14-16.) Moreover, from the system operator's perspective, DPV "masks" electricity demand and requires ready dispatchable backup because of its intermittency. (Id.,at p. 22.)

Recommendations for Alternative to be Selected

Comment ISEGS-1-1: Therefore we recommend the No Action alternative to avoid these impacts.

Comment ISEGS-1-31: Because of these significant cumulative impacts to the visual quality of the popular California Desert recreation area, the No Action alternative should be considered.

Comment ISEGS-1-51: While the use of solar energy can be a clean technology, it is not environmentally responsible unless it is sited properly. Because solar energy requires so much space to produce the desired amount of energy from any given project, it will have a massive footprint if it is placed on relatively undisturbed land. The BLM lands in the area of the project site are preserved for multiple use activities, but giving away so much land for energy development only conforms to one user group, energy developers. There are alternatives to this kind of “energy sprawl”.

This project will not mitigate any climate change impacts to the species present in Ivanpah Valley. No desert species of plant or animal would be helped by building this project, as large intact habitats are needed for species movement, gene flow, and adaptation during any climate change occurrences. Maintaining large desert ecosystems as they are under protective management will be a much better alternative to reducing the local and global impacts of climate change.

Human management intervention to help tortoises should not be in the form of building large development projects on habitat, such as the ISEGS project, which have doubtful climatic benefits, but rather conservation biology would recommend removing disturbances from the desert ecosystem, managing for maximum genetic connectivity, and increasing carrying capacity by preserving large, contiguous, intact natural landscapes.

Even if the project could reduce the amount of climate change by a small amount, it would be very difficult to counter the loss of large blocks of healthy mature ecosystems and desert tortoise habitat. Loss of habitat is a crucial factor in elevating the level of protection given to a species. Preserving intact ecosystems is the best way to conserve listed species, rare plants, ecological interactions such as plants and their pollinators, and migration corridors. For many reasons, we support the No Action Alternative.

Comment ISEGS-1-50: In addition to the Ivanpah Valley proposed developments, including solar, wind, train, and other projects, more renewable projects are proposed for the California Desert. In a recent phone conversation with CEC, we were told that ISEGS is "the tip of the iceberg." In the California Deserts the current dozen or so solar thermal projects with applications in represents a mere 4% of the coming applications. That would mean more than 200 industrial-scale solar thermal projects are looking to built on the Mojave and Colorado Deserts in the state. And that does not include large photovoltaic projects on valley floors and utility-scale wind projects on hills and ridges.

We request that BLM carefully consider the cumulative impacts on desert tortoise, bighorn sheep, other wildlife, rare plants and plant communities, water and soil resources, visual resources, and recreational multiple use of both Ivanpah Valley (including Nevada), and the California Desert Conservation Area. Very significant industrialization of scenery, habitat degradation and fragmentation, reduction of soil and vegetation carbon sequestration, water use, loss of tourism dollars, and loss of multiple use on lands outweighs any small benefits of adding a few renewable energy jobs and

reducing carbon emissions by a small amount. The large footprint on multiple use land and very small amount of electricity actually generated leads us to request the No Action alternative, giving stakeholders more time to discuss better siting of these power plants.

Comment ISEGS-8-19: In summary, the direct, indirect and cumulative impacts of this project on desert tortoise, rare plants, and visual resources are so great that adequate mitigation will be impossible to achieve unless the BLM considers making major changes to its management of the North Ivanpah Valley. If the BLM is not prepared to do so it must deny the right-of-way application.

Comment ISEGS-2-46: 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.

Comment ISEGS-2-1a: 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.

Comment ISEGS-12-1: It is our considered recommendation that the Bureau of Land Management (BLM) should reject BrightSource Energy's applications for four ROW grants to construct its Solar Electric Generating System (ISEGS) on 4,073 acres of public land in the Ivanpah Valley. While we recognize that solar power facilities are an allowable use of Multiple Use-Class L lands as classified in the California Desert Conservation Area (CDCA) Plan of 1980, as amended, the BLM should select the "No Project/No Action Alternative" … for the sufficient reason that the ROW applications fail to satisfy the fourth Decision Criterion in the Energy Production and Utility Corridors Element in Chapter 3 of the CDCA Plan to "avoid sensitive resources wherever possible" (1999, 93). Specifically, the Proposed Action Alternative fails to avoid significant and adverse impacts to the Northeastern Mojave Desert Tortoise Recovery Unit of the Federally listed Mojave desert tortoise…. Whether ISEGS jeopardizes the survival of the Mojave desert tortoise or one of its distinct population segments must, therefore, be an primary consideration of the BLM's in its decision on the BrightSource Energy ROW applications…. The Biological Assessment emphasizes that the proposed site is located within the southeastern portion of the planning area boundary of the Northern and Eastern Mojave Desert Management Plan (Biological Assessment 2009,

p. 3-1). While an accurate statement geographically, the key consideration for the BLM must be that the construction of ISEGS will directly, indirectly and cumulatively impact the Northeastern Mojave Desert Tortoise Recovery Unit.

Comment ISEGS-12-4a: The No Project/No Action Alternative should be selected because the Applicant's proposed relocation/translocation plan, if implemented as specified in Attachment D of the Biological Assessment (2009), will jeopardize both the relocated/translocated and the host populations of desert tortoise.

Comment ISEGS-4-11: The Project would result in numerous direct and indirect impacts on the desert tortoise population. It is my professional opinion that there has not been adequate mitigation to reduce these impacts to a level considered less-than-significant. As a result, the BLM must reject BrightSources's ROW application.

Comment ISEGS-39-1: The Council, based in its review of the Final Staff Assessment/ Draft Environmental Impact Statement (FSA/DEIS), believes that the construction of the proposed Ivanpah Solar Electric Generating System (ISEGS) would conflict with the goals of the *Desert Tortoise Recovery Plan* (1994) to conserve and recover the Mojave Desert Tortoise and would contribute to the likely extirpation of the Northeastern Mojave (NEMO) Desert Tortoise Recovery Unit in the Ivanpah Valley. The Desert Tortoise Council recommends, therefore, that the California Energy Commission select the "No Project/No Action alternative" with respect to the Application for Certification from BrightSource Energy.

Comment ISEGS-39-7: Simply stated, the future of the Ivanpah Valley desert tortoise population is at risk. The Desert Tortoise Council, therefore, recommends that the California Energy Commission select the "No Project/No Action alternative" with respect to the BrightSource Energy Application for Certification.

Response: *BLM appreciates the recommendations in support of selecting the No Action Alternative as the Preferred Alternative. Although it was not chosen as the Preferred Alternative in the FEIS, comments in support of the No Action Alternative were considered, and will be further considered in the ROW grant decision in the Record of Decision.*

3.0 PURPOSE AND NEED

3.1 Scope of Purpose and Need

Comment ISEGS-6-8b: For NEPA purposes, the ISEGS DEIS indicates "alternatives identified must be consistent with BLM' s purpose and need for the action under consideration, which include consideration of the applicant's objectives" (at p. 4-4). For reasons stated earlier, EPA believes BLM's current Purpose and Need statement is too narrow. Further, the Applicant's objectives were ultimately synthesized into the three previously mentioned objectives, which EPA believes unduly constrain the viability of alternatives.

Comment ISEGS-10-1: Consideration of alternatives is crucial to ensuring that any renewable projects permitted by the BLM on public lands are not only on appropriate sites, but also that they are configured in appropriate ways. NEPA's alternatives analysis is "the heart of the environmental impact statement." 40 CFR § 1502.14. Under NEPA, BLM is required to "rigorously explore and objectively evaluate" a range of alternatives to proposed federal actions. See id. §§ 1502.14(a) and 1508.25(c).

It is well-established that an agency must look at all reasonable alternatives to the proposed action, Northwest Envtl Defense Center v. Bonneville Power Admin., 117 F.3d 1520, 1538 (9th Cir. 1997), including more environmentally protective ones, as well as that an actual range of options must be considered, see e.g., City of Tenakee Springs v. Clough, 915 F.2d 1308, 1310 (9th Cir. 1990). While this range is dictated by the nature and scope of the proposed action, NEPA precludes an agency from "defin[ing] the objectives of its action in terms so unreasonably narrow that only one alternative ... would accomplish the goals of the agency's action," rendering the EIS "a foreordained formality." Friends of Southeast's Future v. Morrison, 153 F.3d 1059, 1066 (9th Cir. 1998). Regrettably, that is exactly what the BLM has done here.

Comment ISEGS-10-2: TWS and NRDC urged careful consideration of alternative configurations of the proposed projects in addition to alternative sites in our comments on the Preliminary Staff Assessment prepared by California Energy Commission (CEC) staff as did others. See, e.g., DEIS at 4-53. The Sierra Club submitted its own alternative, the "'1-15 Alternative" that was rejected, in an effort to avoid some of the projects worst impacts. See, e.g., id. at 4-49. But, rather than analyzing a range of reasonable alternatives, the BLM considered none: not a smaller project, not a phased project, not a project at a different site or different area of the ROW application.

The BLM considered only the "no action alternative" and approval of the project as proposed by the proponent. See, e. g., at 4-1 ("the only alternatives that are within the agency's [BLM's jurisdiction, and that meet the purpose and need for the proposed project, are approval of the right of way ... and denial of the right of way .... "). The proffered rationale for this patent disregard for NEPA's most important mandate is, as indicated, the unreasonably narrow purpose that the BLM has adopted - i.e., "to approve, approve with modifications, or disapprove ROW applications filed by" Ivanpah's proponents. Id. at 2-7. Numerous alternatives that were "potentially feasible technically and economically," were developed, id. at 4-1, and are described in the DEIS, but they were all "eliminated from further consideration by BLM" because none "would meet the purpose and need for the proposed action, id. at 4-3. This purpose and need is focused almost entirely on the proponent's purpose without consideration of "the BLM's purpose and need" - even though such consideration is required by the BLM's own NEP A Handbook. Department of the Interior, Bureau of Land Management, National Environmental Policy Act Handbook at 35.

Comment ISEGS-5-4a: According to the DEIS' stated purpose, the BLM was required to determine "whether granting the requested ROW is in the public interest." DEIS at 2-

7. As for the Project's need, the DEIS cited several federal orders and laws covering renewable energy development. DEIS at 2-7, 2-8. The three cited authorities promote approval of renewable projects on federal land. For example, the DEIS cited state and federal goals to produce 10% of the nation's electricity from renewable sources by 2012 and 25% by 2025; and approving 10,000 MW of non-hydropower renewable energy projects on public lands by 2015. Id. Importantly, the cited authorities did not waive environmental protection in order to meet renewable energy goals. On the contrary, Executive Order 13212 requires development of renewable energy in an expeditious, safe and environmentally sound manner. Similarly, Secretarial Order 3285 mandates development of renewable energy in an "environmentally responsible" way, and there is nothing in the 2005 Energy Policy Act that preempted federal environmental laws. Environmental protection is express in any BLM public interest determination, and implicit in the cited authorities. Therefore, protection of natural desert resources is part of the Project's stated purpose and need.

By simply including a Project and No Project option, it appears the BLM failed to fully consider the environment in its environmental impact statement. Worse, the BLM completely discounted any possibility of allowing renewable generation to go forward at the site in a less environmentally damaging way. Because protection of biological resources and promotion of new renewable generation are both by definition project objectives, a full range of Project alternatives that avoided or reduced impacts on the environment and allowed some measure of generation was required. City of Carmel-by-the-Sea v. U.S. Dep't of Transportation, 123 F.3d 1142, 1155 (9th Cir. 1997) (stated project goal necessarily dictated the reasonable range of alternatives, thus agency cannot define its objectives in unreasonably narrow terms).

Comment ISEGS-7-3: Additionally, the FSA/DEIS fails to analyze a reasonable range of alternatives, narrowly defining the project's objectives in such a way as to preclude assessment of many viable alternatives on private and degraded land. Defenders would ultimately like to see this project's impacts avoided if possible or mitigated to the greatest extent practicable. To that end, we offer the following comments.

Comment ISEGS-7-6: In addition to properly defining the purpose and need of an agency action, agencies must consider a range of reasonable alternatives to the agency action in the EIS. Agencies must "study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources." 42 U.S.C. § 4332(2)(E). NEPA requires that an EIS must discuss alternatives to the proposed action, "to provide a clear basis for choice among options by the decision-maker and the public." 40 C.F.R. § 1502.14; see also 42 U.S.C. § 4332(E); C.F.R. §§ 1507.2(d), 1508.9(b). The purpose of this requirement is "to insist that no major federal project should be undertaken 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." Environmental Defense Fund v. Corps of Engineers, 492 F.2d 1123, 1135 (5th Cir. 1974); Methow Valley Citizens Council v. Regional Forester, 833 F.2d 810 (9th Cir. 1987), rev'd on other grounds, 490 U.S. 332 (1989) (agency must consider alternative

sites for a project). NEPA documents considering a no-action alternative along with “two virtually identical alternatives,” have been faulted for “fail[ing] to consider an adequate range of alternatives.” Muckleshoot Indian Tribe v. U.S. Forest Service, 177 F.3d 800, 813 (9th Cir. 1999).

As a result of arbitrarily limiting the purpose and need, the BLM only analyzed two alternatives: the proposed action and the no action alternative. Such a truncated alternatives analysis violates the agency’s duty under NEPA to fully review “all reasonable alternatives.” The EIS must analyze project alternatives including (1) project modification; (2) private land development on disturbed lands; and (3) alternatives outside the jurisdiction of the BLM.

Comment ISEGS-2-36b: 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...

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. Furthermore, even if an alternative is outside of BLM's jurisdiction that does not mean that it should not be 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.

Comment ISEGS-2-9a: 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. S; 1502.5; Metcalfv. 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. US. Dept. of Transportation, 123 F.3d 1142, 1155 (9th Cir. 1997); Muckleshot Indian Tribe v. US. 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 11 55. 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 "[as 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 FSA/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...

Comment ISEGS-6-4: The DEIS does identify three project objectives that are intended to reflect the Applicant's objectives and BLM's stated Purpose and Need of the Project (at pg. 2-7). These three objectives are: 1) to safely and economically construct and operate a nominal400-MW, renewable power generating facility in California capable of selling competitively priced renewable energy consistent with the needs of California utilities; 2) to locate the facility in areas of high solarity with ground slope of less than 5 percent; and, 3) to complete the impact analysis of the project by the first quarter of 20 10 so that, if approved, construction could be authorized in 2010 and beyond. The DEIS indicates that these objectives were considered in the comparison of alternatives as required under NEPA. EPA believes the purpose or objectives for this

Project should not be limited, at the outset, to potentially preclude reasonable alternatives from being evaluated in the future. Rather, an appropriately defined Purpose Statement should ultimately inform the range of alternatives and subsequent analysis and demonstrate the need for the project itself. The SDEIS should revise the Project's objectives to not restrict the Project to a specific energy output or time line, and to allow for a full evaluation of other alternatives.

Recommendation:

- Revise the Project's objectives to allow for a full evaluation of other alternatives in the SDEIS. For example, the objectives should not be so narrow as to be limited to a specific megawatt output or timeline.

Comment ISEGS-6-3: EPA believes the discussion in the DEIS regarding the purpose and need for the ISEGS Project should be expanded. As we indicated in our scoping comments, the purpose of the proposed action is typically the specific objectives of the activity, while the need for the proposed action may be to eliminate a broader underlying problem or take advantage of an opportunity.

Building upon the comment above, the Purpose and Need for a project shonld be broad enough to cover the full breadth of a reasonable range of alternatives, regardless of what the future findings of an alternatives analysis may be. It is critical that the Purpose and Need should not prescribe a solution, nor should it imply a predetermined solution, such as a specific type of renewable energy plant in a specific location that generates a specific amount of power. The Purpose and Need should focus on the underlying problems to address (e.g., lack of capacity to
serve an increasing demand for energy, or the need to develop sufficient renewable energy to meet State renewable portfolio standards) and the reasons a project is considered, and should not be written in a way that includes the solution itself. A solar thermal power plant may be an integral component of the potential solution to the problems identified in a Purpose and Need discussion; however, the Purpose and Need should allow for the analysis of a full scope of alternatives in the SDEIS, including alternative off-site locations, environmentally preferable onsite alternatives or other modes of renewable energy generation.

The ISEGS DEIS eliminates 22 alternatives from further evaluation and ultimately only analyzes the No Project and Proposed Action Alternatives in the DEIS. Such a narrow range of alternatives is, in part, influenced by the Bureau of Land Management's (BLM) narrowly defined Purpose. According to the DEIS, BLM's purpose for the ISEGS proposed action is "to approve, approve with modifications, or disapprove Rightof- Way (ROW) applications filed by (the Applicant)" (at p. 2-7). EPA understands the rationale in considering the "federal" Purpose and Need for the Project; however, EPA recommends that the SDEIS further characterize the "project" Purpose and Need as part ofBLM's statement of purpose. BLM's purpose statement should be broad enough to allow for a reasonable range of alternatives, including environmentally preferable alternatives. It is our understanding that BLM has considered otherpotential areas for future renewable

energy development, including other BLM sites, private lands and previously disturbed sites; however, BLM's purpose statement appears too narrowly focused on the potential ISEGS site, and this unduly limits the alternatives carried forward for further analysis in the DEIS.

Recommendation:

- The SDEIS should reflect a broader purpose and need statement for BLM that allows for a full evaluation, in the SDEIS, of other alternatives, including off-site locations and other environmentally preferable on-site alternatives. BLM should also consider evaluating an alternative that combines on and off site locations in the SDEIS.

Comment ISEGS-7-5: In specifying their EIS obligations under NEPA, federal agencies must "specify the underlying purpose and need to which the agency is responding in proposing the alternatives including the proposed action." 40 C.F.R. § 1502.13. Agencies may not "contrive a purpose so slender as to define competing 'reasonable alternatives' out of consideration (and even out of existence)." Simmons v. U.S. Army Corps of Eng'rs, 120 F.3d 664, 665 (7th Cir. 1997). Nor may agencies "define the objectives of its action in terms so unreasonably narrow that only one alternative . . . would accomplish the goals of the agency's action, and the EIS would become a foreordained formality." Citizens Against Burlington v. Busey, 938 F.2d 190, 196 (D.C. Cir. 1991) cert. denied 503 U.S. 994 (1991).

Rather than presenting a purpose and need statement that reflects the larger goal of providing for the development of solar energy, and then evaluating different means to achieve that goal, BLM has instead defined the Ivanpah SEGS project and other infrastructure construction itself as the goal. See FSA/DEIS at 4.5 ("to . . . construct and operate a nominal 400-MW, renewable power generating facility in California . . . in areas of high solarity with ground slope of less than 5 percent . . . [and] to complete the impact analysis of the project by the first quarter of 2010"). By so radically narrowing the scope of the project's purpose, BLM has impermissibly constricted the range of alternatives considered. See Carmel by the Sea v. U.S. DOT, 123 F.3d 1142, 1155 (9th Cir. 1995)

Indeed, the FSA/DEIS considers only two "alternatives" – the proposed action and the no action alternative. Other viable methods to effectively develop solar projects while minimizing impacts to sensitive wildlife populations and habitat, including development on private lands with lower quality wildlife habitat, development on degraded land, reductions in the size, or changes in the configuration of the Project, were not considered as alternatives in the FSA/DEIS. Because the purpose has been defined as requiring the project to be of a certain size, configuration, slope, and location, the BLM has ensured that no alternative courses of action would be considered, regardless of whether such alternatives would also meet renewable energy goals without significant environmental impacts.

Comment ISEGS-10-3: While we submit that the unreasonableness of BLM's actions here should have been obvious to many agency officials and staff, including the agency lawyers who presumably reviewed at least one administrative draft, it was made crystal clear when, less than a week after the draft's release, the Ninth Circuit handed down its opinion in National Parks Conservation Assn v. BLM, 586 F.3d 735 (9th Cir. Nov. 10,2009). In this case, the Ninth Circuit found that BLM's purpose and need was unacceptably narrowly drawn where the announced need was broader than in the Ivanpah DEIS, including "meet[ing] long-term landfill demand," and the agency considered five alternatives in addition to noaction. Id., 586 F.3d at 735.

Since release of the DEIS more than three months ago, our groups, and especially NRDC, have repeatedly urged BLM as well as the project proponent to remedy this fatal flaw through release of a supplemental EIS. We have repeatedly pointed out that the failure to even acknowledge this flaw undermines public participation in this process as well as public confidence in its eventual outcome. We remain extremely distressed that the BLM apparently intends to proceed on the basis of this unacceptable rejection of NEPA's plain language.

Comment ISEGS-33-2: Page 2-7 of the FSA/DEIS states the need for the action is based in Federal orders and laws that:

- require government agencies to evaluate energy generation facilities
- facilitate development of renewable energy sources.

Three authorities are cited:

- 'Executive order 13212 ... which mandates ... ' Please note that the order includes the clause: .. . while maintaining ... environmental protections.'
- The Energy Policy Act of 2005 (EPAct), which requires ... 10,000 MW of renewable energy ... 'The language of the act, however, treats this as a Sense of Congress, not a requirement. It should not be listed as a need for the action:...

The two valid authorities are very specific about environmental protection. Since the proposed project would essentially destroy 4000 acres of desert environment, the project is out of compliance with the orders.

Comment ISEGS-33-9: Page 4-4 states: "Eight objectives are set forth by BrightSource in its AFC.' They are then listed. Missing is the basic and fundamental underlying BrightSource objective, company profit. Without profit, BrightSource would not be here. Profit to BrightSource should be listed as an objective.

Response: *BLM has reviewed the comments regarding the Purpose and Need for the Proposed Project in the DEIS, as well as additional case law information received since the publication of the DEIS in November, 2009. In response, BLM revised the Purpose and Need text in the SDEIS to remove the constraint placed on the output of the facility. The SDEIS also added a detailed evaluation of two alternatives, including one (the*

Modified I-15 Alternative) that would require a revision to the ROW application and Plan of Development filed by BrightSource. Although BLM can sign a ROD approving a ROW grant for a project area that is not contained in the original ROW application or Plan of Development, no construction or surface disturbing activities could occur without a revised ROW application or Plan of Development. This alternative is also added to allow for a comparison of impact levels, and thus provide a better understanding of the impacts associated with the proposed project and Mitigated Ivanpah 3 Alternatives.

3.2 Consideration of Experimental Nature of Proposed Project

Comment ISEGS-2-9b: 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 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...

Comment ISEGS-1-16d: There exist many high-risk problems and assumptions associated with the project design. No power tower has ever been built on this scale, and the location presents several unresolved problems for operation and maintenance. Parts of the project are experimental and little tested. In Ivanpah 3 with five towers, saturated steam transferred in very long pipes is experimental. A 6 MW pilot project in Israel would be used to simulate ISEGS 100 MW and 200 MW plants, and this is very risky for the public to support, on public land and with taxpayer subsidies.

Comment ISEGS-1-29a: BLM and CEC recommend mitigation and minimization measures that they hope will alleviate these worries, but they pose too many risks to a healthy, functioning ecosystem and valuable recreational resource to risk. This is a very bad location to test an experimental power plant design, and the project should not be approved.

Response: *Solar technology, including power tower technology, has been tested and operates commercially on dozens of site throughout the world and in the U.S., although not at this scale. In any new technology, implementation of larger scales of development to achieve efficiency will be required, and the first of these, in all cases, will have uncertainties associated with it. What can be done is to identify where uncertainties exist, ensure that the project is monitored to obtain data regarding the uncertainty, and provide for response actions to respond to unexpected problems.*

Although not discussed within the Purpose and Need Statement, several sections of the EIS acknowledge the uncertainties associated with the fact that no solar project of this scale has ever been constructed in the U.S. Examples include the evaluation of potential stormwater damage to the facility, and the effect of power tower and heliostat glare on drivers on Interstate 15. In cases where uncertainties exist due to the lack of previous operational experience, mitigation measures have been developed that require monitoring of impacts, and response to impacts, if needed.

3.3 Inclusion of Timeframes in Purpose and Need

Comment ISEGS-2-9c: 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.

Response: *The Purpose and Need statement in the DEIS, and as revised in the SDEIS, do not specify timelines for the environmental review. The timeline discussed as a BLM objective in the alternatives section was never used as a rationale for eliminating any alternative – therefore, it has been removed from the list of BLM objectives that affect the alternative selection in the FEIS.*

3.4 Climate Change Strategies as Part of Purpose and Need

Comment ISEGS-2-9d: 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.

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. Sitting 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.

Comment ISEGS-20-3: With regard to the long-term future of our state, renewable energy generation and the protection of critical biological resources go closely hand in hand. The greatest long-term threat to plant and animal life of all kinds – especially in the desert – is the risk of fundamental, non-reversible climate change. This threatens to eradicate entire species. If we hope to combat this effectively, we have no choice but to build clean energy sources as quickly as possible, while also increasing our energy efficiency.

Response: *As stated in the Purpose and Need statement in the DEIS, the Department of the Interior has been directed, in the Energy Policy Act of 2005 (EPAct), to approve at least 10,000 MW of renewable energy on public lands. While climate change issues have driven both Federal and State of California energy policies to encourage solar energy development, it is not the purpose of the site-specific analysis of a single solar application to evaluate these policies. Therefore, an evaluation of whether solar energy, as a whole, will achieve the renewable energy objectives of the Federal government, are outside of the scope of this EIS, and this has therefore not been added to the Purpose and Need Statement.*

Although the Purpose and Need statement has not been expanded to include a general evaluation of solar energy, the specific comments regarding the net greenhouse gas emissions of the facility are applicable. The DEIS included estimates of greenhouse gas emissions associated with the facility as an attachment to the section on air quality. In response to these and other comments, this section has been made into a stand-alone section, and revised in the FEIS to address other specific factors that impact greenhouse gas emissions.

3.5 Need for Power as Part of Purpose and Need

Comment ISEGS-6-5: Additionally, as indicated in our scoping comments, this section of the SDEIS should discuss the proposed Project in the context of the larger energy market that this Project would serve. While the DEIS states that the proposed Project "could help meet the explicit policy goals of the State of California and the Federal goals" (at pg. 2-7), the DEIS does not contain a discussion of the specific portion of Federal, State, or individual utility power provider needs that this Project would meet. We note the DEIS includes references to state and Federal renewable energy goals, highlighted by Executive Order 13212, the Energy Policy Act of 2005 and Secretarial Order 3285, as drivers for renewable energy projects such as the ISEGS. While the DEIS indicates the need for the proposed action has its basis in these Federal orders

and laws that require government agencies to evaluate energy generation projects and facilitate the development of renewable energy sources, EPA does not believe the current Purpose and Need section fully describes the specific Federal, State, and individual utility power provider renewable energy targets, timelines, and underlying needs to which BLM is responding.

Based on our review of available information, it is our understanding that BLM has received over 470 renewable energy project applications, to date, with a projected capacity of 97,000 megawatts (MW) of electricity. As the DEIS points out, the Energy Policy Act of 2005 requires the Department of Interior to approve at least 10,000 MW of renewable energy by 2015. Given that roughly 300 of the renewable energy applications BLM has received are for project locations in Region IX, EPA recommends that the SDEIS discuss whether all the applications, in total, may exceed the demonstrated Federal need for energy in 2015, 2020, and 2030, and how the ISEGS Project fits into this context.

Similarly, the SDEIS should also discuss how this Project fits into California's energy needs. We were pleased to see the discussion of state renewable goals and load growth in Appendix Air-l - Greenhouse Gas Emissions. We also note that the renewable energy projects identified in the Cumulative Scenario (at pg. 5-11) may not all be approved for reasons described on page 5-3. The discussion of Project need in the SDEIS should build upon these discussions and include the latest estimates of renewable energy needs in California and the portion this Project would fulfill. The recent estimates included in Governor Schwarzenegger's December 29, 2009 press release indicated California has 244 proposed renewable energy projects that could produce up to 70,000 MW of clean energy annually. Of the 244 projects, up to 53 are expected to apply for American Recovery and Reinvestment Act (ARRA) funding and to break ground by the end of2010. Twenty-two of these projects could generate power at utility-sized levels of larger than 200 MW, totaling more than 9,000 MW. The SDEIS should discuss how these figures relate to California's 2010, 2015, and 2020 renewable energy goals and further clarify what proportion of the State's renewable energy targets this Project would help achieve. If the ISEGS may provide power to customers in Nevada, the SDEIS should include a similar discussion of Nevada's Renewable Portfolio Standards, as well. EPA believes this context is imperative for decision makers and the public to have, in light of the large number of projects moving forward.

Presumably, some number of renewable energy facilities will be constructed pursuant to the joint Department of Energy (DOE)IBLM Programmatic Solar DEIS effort as well as the Desert Renewable Energy Conservation Plan (DRECP) process. It would be helpful to know the likely locations, construction timing, and generation capacities of such facilities relative to the proposed Project. Finally, given that Southern California Edison and Pacific Gas and Electric have apparently signed power purchase agreements for 100 MW and 300 MW, respectively (at pg. 4-8), the SDEIS should discuss the overall renewable energy targets and timelines for these utility power providers and how the ISEGS Project fits into this context.

Recommendations:

- Fully describe the specific Federal and State renewable energy targets, timelines, and underlying needs to which BLM is responding, and explain how the Project meets those needs in the context of the many renewable energy project applications in the Desert Southwest and California.
- To the extent practicable, the SDEIS should discuss how many of the total renewable energy applications received by BLM are likely to proceed pursuant to the joint Department of Energy (DOE)/BLM Programmatic Solar DEIS effort and the Desert Renewable Energy Conservation Plan (DRECP) process, and the level of energy production those applications represent.
- Include discussion of the overall renewable energy targets and timeline for Southern California Edison and Pacific Gas and Electric and how this Project would contribute to their renewable energy portfolios.
- Further describe the utility purchases of power and provide a description of how the power would be bought, sold, and used so that the reader can better evaluate the tradeoffs between resource protection and power generation.

Response: *These comments request a general analysis of the full scope of renewable energy developments efforts, including all technologies (wind, solar, wave, geothermal, biomass, etc), and including projects on both public and private lands, to determine which projects are needed to reach the renewable energy objectives of both the State of California and the Federal government. This is outside of the scope of BLM's responsibility to perform a site-specific environmental analysis in response to this particular ROW application. Also, such an analysis would require BLM to make assumptions regarding the specific intentions of individual applicants that would be difficult to determine, especially given the lack of detail provided in many of the current ROW applications. Also, such analysis would only be tentative, and would therefore not provide definitive information that could be used by BLM in making the ROW grant decision.*

4.0 CUMULATIVE IMPACTS

4.1 Eldorado Ivanpah Transmission Project

Comment ISEGS-25-2: In our comment letters (June 6, July 24, and August 28, 2009) on the transmission line project, we also notified the project applicants that Boulder City Ordinances, Nevada State Cactus and Yucca laws and other local and Nevada regulations must be reviewed to determine if the transmission line project as proposed is in compliance with those regulations.

Comment ISEGS-6-7: The DEIS indicates that "in order to accommodate the total anticipated 1,400 MW load generation by ISEGS and five other planned renewable energy generation projects in the region, the California Independent System Operator (California ISO) has indentified approximately 36 miles of transmission line within

California and Nevada that would need to be upgraded from 115 kV to 220 kV" (at pg, 3-13). EPA recommends that the SDEIS describe the current capacity of the existing transmission line. The SDEIS should also include a discussion of the existing transmission capacity compared to the future capacity after the upgrade. If excess capacity exists on the current transmission line, the SDEIS should consider an alternative that does not rely on the upgrade.

Recommendations:

- Demonstrate the independent utility of the ISEGS Project within its current geographic limits as it relates to the need for the Project. If the Project need cannot be met without future planned improvements, the scope of the Project should be expanded accordingly, such as including a full analysis of future improvements to the full extent of the planned Project, including the necessary transmission lines and how it will operate, since these would be considered connected and similar actions (40 CFR 1508.25).
- EPA recommends that the SDEIS disclose: 1) the current available capacity of the existing 115 kV transmission line; 2) the estimated capacity of the 220 kV transmission line in future years; and 3) to what degree the line is capable of accommodating additional renewable energy generated in the Project's vicinity in California and Nevada.
- Discuss whether the 400-MW ISEGS Project or a reduced sized alternative could be accommodated with the existing 115 kV transmission line. If such an alternative is feasible, BLM should include such an alternative as part of the Alternatives Analysis in the SDEIS.

Comment ISEGS-2-10a: 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 [...I or reasonable alternatives" is to consider them together. 40 C.F.R. 51508.25(a)(C). It is important for federal agencies to consider connected actions together in a single NEPA process as opposed to segmenting review. Duly 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.

Comment ISEGS-6-6: The SDEIS should clearly demonstrate the independent utility of the Project within its current geographic limits as it relates to the need for the Project. If the Project need cannot be met without future planned improvements, such as the 36 mile transmission line between the existing Eldorado Substation in Nevada and the proposed new Ivanpah Substation in California (at pg. 3-13), the scope of the Project should be expanded accordingly, since these would be considered connected and similar actions (40 CFR 1508.25). In that case, the NEPA evaluation should include the full extent of the planned Project, including the necessary transmission lines and how it will operate. This broader scope should be applied to the identification and evaluation of project alternatives that may be less environmentally damaging. EPA believes this is the most effective way to address indirect and cumulative environmental impacts. The ISEGS DEIS indicates that a separate EIS is currently under preparation for the transmission line project (at pg. 3-13). We were pleased to note the qualitative discussion of resource impacts from the transmission line project in the Cumulative Scenario Chapter; however, if the ISEGS Project cannot meet its Purpose and Need without the transmission line project (thereby qualifying it as a connected action), the SDEIS should address both projects together, Generally, funding or constraints of

project staging and construction should not be used as a basis for segmenting the evaluation of environmental impacts under NEPA.

Comment ISEGS-31-7: During the CEC proceedings, a few commenters expressed concern regarding the application to upgrade the transmission line from Eldorado to Ivanpah (known as the "Eldorado-Ivanpah Transmission Project"), an independent project to upgrade an existing high voltage line that bisects the site, and that was proposed by Southern California Edison on May 28, 2009. The Notice of Preparation (NOP) for that project clearly identifies the project's "Purpose and Need" as follows: "The proposed project would provide the electrical facilities necessary to integrate new solar energy generation development in excess of 1,400 megawatts in the Ivanpah Dry Lake Area." (NOP, p.4.)

The BLM and the California Public Utilities Commission (CPUC) are conducting a review of Southern California Edison's Eldorado-Ivanpah transmission upgrade pursuant to NEPA and CEQA. As stated in BLM's Notice of Intent to Prepare a Joint Environmental Impact Statement and Final Environmental Impact Report for the Southern California Edison, Eldorado-Ivanpah Transmission Project; California, Nevada, the proposed transmission line would handle projected electricity produced from several renewable energy project proposals in and around the Ivanpah Valley. The project's proponent, Southern California Edison, has further noted that the project and would serve to reinforce the east-west transfer of energy, enabling renewable energy to be exported from Nevada to California and enhancing grid reliability.

Based on this information, it is clear that the transmission line upgrade is not a connected action to the ISEGS. While the Eldorado-Ivanpah Transmission Project would facilitate the ISEGS, it is an independent action that will occur regardless of whether the ISEGS is permitted, and is not necessary for the operation of the ISEGS. The ISEGS and the Eldorado-Ivanpah Transmission Project have independent utility; both projects will proceed with or without the other.

Comment ISEGS-25-1: Our program is submitting comments regarding the impacts that the transmission line project would have on mitigation areas and species of concern to the Permittees...The transmission line project as currently proposed includes new and or expansion of Rights of Way and disturbance to areas that we contend are included in and protected by the BCCE agreement...we are also concerned about impacts to the BLM's Piute Eldorado Area of Critical Environmental Concern, which is located south of the BCCE. The Piute Eldorado Area of Critical Environmental Concern, while managed by the BLM, is part of our mitigation reserve portfolio for the MSHCP. The transmission line project as currently proposed may have an impact on the MSHCP via the impacts to our mitigation areas.

Comment ISEGS-25-3: In addition, we have evaluated environmental and land use concerns within the transmission line project area which included analyzing existing information for environmentally sensitive areas, wildlife, and plant species of concern. A list of species that could be found in or near the BCCE is provided below…

Response: *BLM has reviewed the comments provided with respect to the Eldorado-Ivanpah Transmission Project (EITP), and revised the EIS to provide a more detailed description of the EITP project in the Project Description section, and included the action within the analysis of cumulative impacts in the Cumulative Scenario section. The DEIS Cumulative Scenario section included a detailed analysis specific to the EITP project, but this analysis was based only on the limited information available at that time. A joint DEIR/DEIS has now been prepared and published for the EITP project by the California Public Utilities Commission and the BLM. The FEIS for ISEGS provides summaries of the findings contained in the DEIR/DEIS for EITP.*

4.2 Other Future, Foreseeable Projects

Comment ISEGS-7-21a: Therefore, the EIS must analyze the other proposed renewable energy projects in this region, any foreseeable growth in this area, including in Primm, the foreseeable impacts of climate change, and any other reasonably foreseeable future projects.

Comment ISEGS-6-21a: EPA recommends that the SDEIS follow the guidance developed by the California Department of Transportation (Caltrans), the Federal Highway Administration (FHWA), and EPA for cumulative impact analysis, as it can be applied to non-road projects. The SDEIS and all future environmental analyses related to renewable energy, transmission, and transportation projects in the region should provide a comprehensive description of the associated elements of all foreseeable future actions. Specifically, the SDEIS should disclose to the public the cumulative impacts that are anticipated, when the impacts of the Project are considered along , with those of all of the energy projects (e.g. the 1,000 MW Cogentrix Solar Services project, the 700 MW combined NextLight solar trough projects, the 500 MW natural gas Ivanpah Energy Center, the two 125 MW Wind Energy power plant projects) and transportation projects (e.g. the DesertXpress High Speed Train System, California-Nevada Interstate Maglev Train, proposed Ivanpah Supplemental airport and its associated road network) in the Project vicinity. "Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time" (40 CFR Part 1508.7). Even if impacts from the Project, itself, are considered insignificant, the SDEIS and FEIS must address whether there are "collectively significant actions" when multiple, reasonably foreseeable projects are considered together.

Comment ISEGS-6-21b: The SDEIS should provide a substantive discussion of, and quantify where possible, the cumulative effects of the project when considered with other past, present, or reasonably foreseeable projects, regardless of what agency or person undertakes those actions (see 40 CFR Section 1508.7).

Response: *BLM has reviewed the comments provided with respect to cumulative impact analysis in the DEIS and SDEIS, including the temporal and geographic scope of other projects that may contribute to cumulative impacts, the means of performing the impact analysis, and the mitigation proposed to address cumulative impacts. The*

Cumulative Scenario section has been revised , and the cumulative impact analyses, which had previously been included in the resource-specific sections, have been combined into the revised section. By including the identification of other projects, and all resource analyses into a stand-alone section, the FEIS addresses the difficulty in tracking the projects through the DEIS.

4.3 Cumulative Analysis Methodology

Comment ISEGS-6-21c: While we acknowledge the identification of the reasonably foreseeable projects mentioned in the DEIS and the qualitative discussion of cumulative impacts in each resource chapter, the DEIS does not fully assess and quantify cumulative impacts associated with the Project, and does not adequately link the Project's effects to the health of the affected resources. Cumulative impacts are defined in the CEQ NEPA regulations as the impact on the environment that results from the incremental impact of the action when added to the other past, present, and reasonable foreseeable future actions, regardless of what agency (Federal or non-Federal) or person undertakes such actions (40 CFR 1508.7).

Comment ISEGS-6-21d: Further, according to the DEIS, the cumulative impacts associated with the proposed Project are "a substantial contributor to the cumulative loss of Ivanpah Valley's native Mojave Desert plant and wildlife communities, including the threatened desert tortoise and other special status species" (at pg. 6.2-71). The cumulative impacts discussion in the Biological Resource chapter does not quantify the cumulative effects to, for example, desert tortoise habitat from reasonably foreseeable projects. The joint Caltrans, FHWA, and EPA guidance recommends the use of quantitative data and analysis, especially when impacts to aquatic or biological resources are involved, because such data can be critical to identifying avoidance and mitigation measures and preparing permit applications.

Comment ISEGS-6-21e: Recommendations:
Conduct a thorough cumulative impact assessment for the SDEIS. EPA recommends using the California Department of Transportation Indirect and Cumulative Impacts Analysis, which is co-authored by EPA and is applicable to impact analyses for both road and non-road projects. This guidance can be found at [http://www.dot.ca.gov/ser/cumulative_guidance/purpose.htm] and http://www.dot.cagov/ser/Growthrelated_IndirectImpactAnalysis/gri_guidance.htm). The guidance will assist in identifying cumulative impacts and preparing an analysis that is sound and well documented. The results of this analysis should be summarized in the revised Cumulative Impacts Chapter.

Comment ISEGS-27-10a: The County is interested in securing a steady source of renewable energy for its constituents, but that must be balanced with a full analysis and adequate mitigation for project impacts. Our concerns regarding the rush of renewable energy projects include a need to gain a full understanding of the cumulative picture. We do not believe the DEIS provides this.

Response: *BLM has reviewed the comments provided with respect to cumulative impact analysis in the DEIS and SDEIS, including the temporal and geographic scope of other projects that may contribute to cumulative impacts, the means of performing the impact analysis, and the mitigation proposed to address cumulative impacts. The Cumulative Scenario section has been revised , and the cumulative impact analyses, which had previously been included in the resource-specific sections, have been combined into the revised section. The revised section is included as Section 5 of the FEIS, and includes additional quantitative analysis of cumulative impacts.*

4.4 Mitigation for Cumulative Impacts

Comment ISEGS-7-21b Finally, the cumulatively significant impacts of the project, or its contribution to cumulative impacts, must be mitigated. The FSA/DEIS concedes that without mitigation the Ivanpah SEGS project would be a substantial contributor to the cumulatively significant loss of Ivanpah Valley's biological resources, including the threatened desert tortoise and other special-status species (FSA/DEIS, page 6.2-95). However, the FSA/DEIS does not address which existing measures would address the cumulatively significant impacts of the project, or whether additional measures are necessary to deal with the project's contributions to cumulative impacts.

Comment ISEGS-11-6a The cumulative impacts of the proposed ISEGS project combined with other proposed energy projects in Ivanpah Valley represent a scale of impact on functional habitat that is unprecedented in its range and pace. Cumulative impacts identified in the FSA/DEIS for the proposed project will have cumulatively considerable adverse effects to the Ivanpah Valley ecosystem as the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects. The FSA/DEIS concludes that the cumulative effects of these proposed actions to the biological resources in the Ivanpah Valley will have significant, unmitigable impacts to rare plants, but falls short of requiring meaningful mitigation to address these cumulative impacts.

Comment ISEGS-6-21f: The document should also propose mitigation for all cumulative impacts, and clearly state the lead agency's mitigation responsibilities and the mitigation responsibilities of other entities.

Comment ISEGS-11-6d: 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. In addition, as noted above, the provisions for "nesting" mitigation do not ensure that the loss of the individual plants and the cumulative impacts from those losses will in fact be adequately compensated.

Response: *BLM has reviewed the comments provided with respect to cumulative impact analysis in the DEIS and SDEIS, including the temporal and geographic scope of*

other projects that may contribute to cumulative impacts, the means of performing the impact analysis, and the mitigation proposed to address cumulative impacts.

In the DEIS, the mitigation measures proposed in each resource section were developed to address not just the direct impacts, but also the indirect and cumulative impacts associated with that resource. In addition, by combining the cumulative impacts analyses in the revised Cumulative Scenario section, the FEIS also specifically evaluates whether additional mitigation measures are required.

Reduction of cumulative impacts to biological resources was also a substantial issue in BLM's decision to analyze the Mitigated Ivanpah 3 and Modified I-15 Alternatives in the SDEIS.

4.5 Growth-Inducing Impacts

Comment ISEGS-7-21c: The EIS should include a discussion of the foreseeable growth from the workers associated with this project in terms of increased housing and traffic.

Comment ISEGS-8-16a: The FSA/DEIS fails to adequately identify and analyze the cumulative impacts and the growth inducing impacts of the project which in this instance are closely tied together. While review of the Optisolar application has yet to begin, the high cost of the Eldorado-Ivanpah transmission upgrade provides a compelling economic incentive for approval of the Optisolar project, virtually ensuring yet another solar power project on prime desert tortoise habitat in the northern Ivanpah Valley. Arguably, neither project alone could amortize the cost of the proposed Eldorado-Ivanpah upgrade, which involves the construction of 35 miles of high voltage lines from California into Nevada and separate telecommunications pathways. The cumulative impacts from these two projects on the northern Ivanpah Valley are not adequately assessed and the grown inducing impacts from the approval of one project on the entire area is not adequately assessed or analyzed.

Comment ISEGS-11-6b: The FSA/DEIS fails to adequately identify and analyze both the cumulative impacts and the growth inducing impacts which in this instance are closely tied together. While review of the Optisolar application has yet to begin, the high cost of the Eldorado-Ivanpah transmission upgrade provides a compelling economic incentive for approval of the Optisolar project, virtually ensuring yet another solar power project with rare plant occurrences in the northern Ivanpah Valley. Arguably, neither project alone could amortize the cost of the proposed Eldorado-Ivanpah upgrade, which involves the construction of 35 miles of high voltage lines from California into Nevada and separate telecommunications pathways. The cumulative impacts from these two projects on the northern Ivanpah Valley are not adequately assessed and the grown inducing impacts from the approval of one project on the entire area is not adequately assessed or analyzed.

Comment ISEGS-11-6c: Cumulative impacts will convert the Northern Ivanpah Valley into a de-facto solar zone and industrial zone. The cumulative impacts to species across the zone and across the stateline into the eastern Ivanpah Valley are not adequately addressed as well as 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 FSA/DEIS states that building the proposed ISEGS 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).

Comment ISEGS-2-35: 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 a11 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. FSAIDEIS 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.

Comment ISEGS-2-5a: The FSADEIS 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.

Response: *The revised cumulative analysis presented in the FEIS estimates the direct, indirect, and cumulative impacts that would occur assuming that all of these proposed projects are implemented. Although this may over-estimate the impacts that will actually occur, it presents a conservative analysis, based on an assumption that the ISEGS and EITP projects will increase the likelihood of the other solar projects being developed*

4.6 Format of Cumulative Sections in EIS

Comment ISEGS-31-6a: The FSA/DEIS discusses in detail the cumulative effects of the proposed action and other past, present, and reasonably foreseeable future actions. In addition to information discussed in the FSA/DEIS, considerable additional data were developed during the CEC hearings regarding cumulative effects. As noted above, the applicant has continued its efforts to reduce to the extent practical the environmental impacts of the project, thereby reducing its cumulative effects. The Mitigated Ivanpah 3 proposal would substantially reduce impacts to the most sensitive biological areas by reducing the footprint of Ivanpah 3 by 433 acres and avoiding a portion of the northernmost site that is considered to be the most biologically sensitive. The Mitigated

Ivanpah 3 proposal would therefore further reduce the already insignificant cumulative effects associated with the project. Although the cumulatives analyses are well considered, rather than being collected in a single cumulatives analysis section they are presented at the end of the analysis of each class of impact that is analyzed. The Applicant recommends that either a separate cumulative section is presented in the Final Environmental Impact Statement, or that a guide to the location of each cumulative analysis is provided in an appendix.

Comment ISEGS-6-21g: Incorporating this thorough analysis as part of this Project will help provide the context necessary to evaluate project related impacts into the future. This analysis should be summarized as part of the Cumulative Impacts Chapter so decision makers do not have to piece together elements of the analysis from different sections of the 1,200 page DEIS.

Response: *In the DEIS and SDEIS, the analysis of cumulative impacts was separated from the Cumulative Scenario section. This led to difficulty in tracing the other existing and reasonably foreseeable future projects to their resource-specific impacts. In response, the cumulative impacts analyses that were located within the individual resource sections in the DEIS and SDEIS have been moved to a revised Cumulative Scenario section in the FEIS.*

4.7 Additional Information to Include

Comment ISEGS-31-6b: The CEC testimony, in conjunction with information presented in the FSA/DEIS, clearly defines the direct and indirect effects of the proposed action and identifies the resources, ecosystems and communities that are affected. While the cumulative effects analysis concludes that the various energy development and projects will have cumulative impacts on the environment, those effects have been fully and adequately considered in the FSA/DEIS and the records. Those effects are not substantial, particularly considering the countervailing significant energy and environmental benefits of the ISEGS. The final Environmental Impact Statement should incorporate the information developed during the CEC hearing process into the overall cumulative effects analysis.

Response: *The CEC hearing process has included a large amount of data, all of which is publicly available, but some of which may not be relevant to BLM's NEPA process. BLM will use the information that was specifically provided as part of comments made on the DEIS. The comment does not provide specific direction to which information they would like included from the CEC hearing process.*

4.8 Project-Specific versus Programmatic Analysis

Comment ISEGS-10-4: The DEIS concludes that the cumulative impacts of this project, when combined with these other projects would be significant. See, e.g., id. at 6.5-21. See also id. at 6.5-1 ("Impacts of the ISEGS project would combine with impacts

of present and reasonably foreseeable projects to result in a contribution to cumulative impacts in the Ivanpah Valley area related to land use which would be significant .... "). It does not, however, acknowledge that the net effect of approval of these proposed projects will be the creation of a de facto solar energy zone in the Ivanpah Valley and across the border with Nevada. We note with concern that the BLM did not propose all or even the California part of this area as a solar energy study area (SESAs). It did not do so even though California's Renewable Energy Transmission Initiative (RETI) had designed a competitive renewable energy zone (CREZ) in the area and even though other RETI CREZs served as the basis for a number of BLM SESAs in California. While our organizations strongly support the concept of zoning public lands for solar (and other renewable energy) development, zones that are created by accident will realize few if any of the benefits of those that are the result of a careful deliberative process. The cumulative effects of the creation of a de facto energy zone should have been analyzed. Instead and at best they were summarized very briefly.

Comment ISEGS-2-34a: The DEIS also fails to consider all reasonably foreseeable impacts in the context of the cumulative impacts analysis. See Native Ecosystems Council v. Donzbek, 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 Ctv. 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.

Comment ISEGS-2-5b: 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 sitting solar energy plants on various land use designations may be revisited in the PEIS." FSAIDEIS 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.

Response: *These comments generally request that the project-specific Ivanpah SEGS EIS either be addressed in an overall planning level context, delayed pending completion of the Programmatic Solar EIS, or be expanded to partially serve the purpose of the Programmatic Solar EIS. In general, it is BLM's preference to develop Programmatic NEPA documentation, and use it as a basis for site-specific projects, which is why the process for the Programmatic Solar EIS is occurring. However, at the same time, BLM has a responsibility to perform a timely environmental review in response to individual applications. Although the Programmatic Solar EIS has not been completed, the Ivanpah SEGS EIS has benefitted from the Programmatic process because many of the reviewers on the BLM review teams are involved with both the site-specific EIS and the Programmatic.*

5.0 CDCA PLAN AMENDMENT

5.1 Scope of Amendment

Comment ISEGS-1-32: An amendment to the California Desert Conservation Area Plan of this size should undergo its own extensive alternative review.

Comment ISEGS-8-17: The governing land use plan for the project area is the CDCA Plan as amended by the 2002 NEMO Plan Amendment.

The NEMO Plan's mitigation for Category III habitat applies to projects of less than 100 acres. NEMO at 2.27. The proposed project is over forty times the maximum acreage for projects covered under the NEMO Plan. The NEMO Plan did not address California State interests in the Northeastern Mojave desert tortoise population. The NEMO Plan does not even list CDFG as one of the agencies consulted (See NEMO Plan Chapter 7). Like the FSA/EIS, the NEMO Plan failed to address impacts to California's population of Northeastern Mojave desert tortoises. The BLM must therefore fully address impacts to the Northeastern Mojave ESU and to California's interests in the EIS.

BLM Handbook 1745 - Introduction, Transplant, Augmentation, and Reestablishment of Fish, Wildlife, and Plants - requires that "Decisions for making introductions, transplants, or reestablishments should be made as part of the land use planning process (see BLM Manual Section 1622). Releases must be in conformance with approved RMPs. A Land Use Plan Amendment must be prepared for proposed releases if management direction is not provided in the existing Land Use Plan (see BLM Manual Section 1617, emphasis added)." The proposed project and the other projects proposed for the project area will

result in large-scale movement and translocation of desert tortoises. There is no consideration in the
California Desert Conservation Area Plan as amended by the NEMO Plan for desert tortoise translocations on this scale. Therefore, a plan amendment is required to comply with BLM policy.

In addition, BLM Handbook 1745 at .1.12A requires that the activity plan be site-specific and include “Site-specific and measurable vegetation/habitat population objectives which are based on existing ecological site potential/condition, habitat capability, and other important factors. (See BLM Manual Sections 1619, 6780, and 4120).” As we discussed above, the DEIS does not adequately describe existing ecological conditions nor does it address the capability of the habitat at the translocation sites to support additional tortoises.

The BLM must adhere to its own policy and prepare an EIS that proposes and analyses an amendment to the CDCA Plan that provides the required management direction with respect to desert tortoise translocation prior to considering this project. It could then use that guidance to develop a translocation plan for desert tortoises in the project area that includes the required site specific analyses to comply with BLM policy, FLMPA, and NEPA.

Comment ISEGS-2-2: 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.

Comment ISEGS-2-3b: 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-I. 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 FSAIDEIS 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.

Comment ISEGS-2-4a: 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. 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.

Comment ISEGS-33-8: The title page identifies the document as: Final Staff Assessment and Draft Environmental Impact Statement and Draft California Desert Conservation Area Plan Amendment. I was unable to find the Draft California Desert Conservation Area Plan Amendment.

It is not in the table of contents. Page 2-8 states that a plan amendment is required, but does not show the amendment. Please identify its location or provide the text.

Response: *The CDCA Plan Amendment associated with the Ivanpah SEGS project was presented in the Introduction of the DEIS, along with a discussion of the process required to amend the Plan.*

The NEMO Plan amendment considered inclusion of the project area within the Ivanpah DWMA, and also considered Clark Mountain Grazing Allotment alternatives, and ultimately rejected the DWMA and elimination of grazing on the Clark Mountain Allotment. Analysis of a DWMA alternative would require assessment within the context of the NEMO Planning unit as a whole, and would only be considered in light of the availability of new supporting data.

6.0 GENERAL FLPMA/NEPA ISSUES

6.1 Inventory of Resources

Comment ISEGS-2-6: FLPMA states that "[the Secretary shall prepare and maintain on a continuing basis an inventory of all public lands and their resource and other values," and this "[this 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. 5 1711(a). FLPMA also requires that this inventory form the basis of the land use planning process. 43 U.S.C. 5 1701(a)(2). See Center for Biological Diversity v. Bureau of Land Management, 422 F.Supp.2d 11 15, 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 plat1 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.

Comment ISEGS-2-7: 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. $5 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. 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 decision-making process" or show that it had "balanced competing resource values").

Response: *In support of this EIS, BLM has worked with the applicant to conduct the full scope of resource inventories necessary to support consultation with respect to biological and cultural resources for a Federal project. In addition, BLM has required the applicant to collect additional data and perform other site-specific analyses that are not required for formal interagency consultation, but that BLM deemed necessary to allow for a full evaluation of potential impacts in all resource areas. As part of the review of the public comments on the DEIS, BLM considered each specific item to determine if such an inventory was required, or would support the impact analysis in a way which could result in a clear distinction among alternatives. As a result of this review, BLM determined that the inventory of resources associated with the proposed project was sufficient to satisfy regulatory requirements and to allow for full resource impact evaluation.*

6.2 Impact Analysis

Comment ISEGS-2-8: 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)." FSNDEIS 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., FSAIDEIS 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.

Comment ISEGS-2-12a: 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 I,. Thomas, 137F.3d 1146, 1150-52, 1154 (9" 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. 51502.22; see National Parks & Conservation Ass'n v. Babbitt, 241 F.3d 722, 733 (9th 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.")

Comment ISEGS-5-1: As an initial matter, we found the DEIS confusing, poorly organized and missing key information necessary for the public and decision makers to understand and respond to what it is the BLM is proposing to do. The agency failed to explain the analytic route it traveled from the impacts identified to the conclusions drawn. NEPA requires that an EIS be well-organized and easily understood by both “governmental decision makers and by interested nonprofessional laypersons likely to be affected by actions taken under the EIS.” Oregon Environmental Council v. Kunzman, 817 F.2d 484, 494 (9th Cir. 1987). The ISEGS DEIS fails on these points, and necessitates a revision and recirculation.

The requirement that the BLM would issue a comprehensive and understandable NEPA document is
fundamental to the statute itself because NEPA is the “basic national charter for the protection of the environment.” 40 C.F.R. § 1500.1. Congress enacted NEPA “[t]o promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man; [and] to enrich the

understanding of the ecological systems and natural resources important to the Nation." 42 U.S.C. § 4321 (emphasis added). To accomplish these purposes, NEPA requires all federal agencies to prepare a "detailed statement" that discusses the environmental impacts of, and reasonable alternatives to, all "major Federal actions significantly affecting the quality of the human environment." 42 U.S.C. § 4332(2)(C). This statement is commonly known as an environmental impact statement ("EIS"). See 40 C.F.R. Part 1502.

The EIS must "provide full and fair discussion of significant environmental impacts and shall inform decision-makers and the public of the reasonable alternatives which would avoid or minimize adverse impacts or enhance the quality of the human environment." 40 C.F.R. § 1502.1. This discussion must include an analysis of "direct effects," which are "caused by the action and occur at the same time and place," as well as "indirect effects which . . . are later in time or farther removed in distance, but are still reasonably foreseeable." 40 C.F.R. § 1508.8. Most relevant to these comments, an EIS must "rigorously explore and objectively evaluate all reasonable alternatives" to the proposed project," because the alternatives analysis is the "heart of the environmental impact statement." 40 C.F.R. § 1502.14.

Comment ISEGS-31-2: As part of the process required for approval by the CEC, the Applicant has submitted a wealth of data and analysis relating to the technical aspects of the project, as well as reasonably foreseeable environmental impacts of the project. Much of the information submitted to the CEC was in response to specific data requests issued as part of the CEC application process. The Applicant has provided the Bureau with a copy of portions of the hearing record of the CEC proceedings, which includes relevant information submitted by the Applicant and CEC staff as part of those proceedings, under separate cover. The Applicant believes that this information provides relevant and useful data and analyses that should be incorporated by the BLM into its administrative record.

Comment ISEGS-2-1b: 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 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.

Comment ISEGS-2-1c: 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 ("ESP), the Federal Land Policy Management Act ("FLPMA"), the California Desert Conservation Act ("CDCA"), and other laws, ordinances, regulations and standards.

Response: *The analysis of impacts in the EIS has identified many resource areas in which direct, indirect, and cumulative impacts were disclosed. These include biological resources, soil and water resources, visual resources, and traffic, among others. In each case where an impact was identified, BLM evaluated and proposed mitigation measures that would eliminate or reduce the magnitude of the impact. BLM also evaluated more than 20 potential alternatives, and performed a resource-by-resource evaluation of several of them to determine if they were likely to result in reducing impacts.*

BLM has also reviewed the above comments, as well as all of the specific technical comments made on the resources sections, to determine if changes would be appropriate. In all cases, the comment and the associated text was reviewed, and in many cases, revisions were made to the text in the FEIS to make corrections or provide clarification. These changes have improved the impact analysis in the EIS, and the comments are appreciated. However, none of these changes in the FEIS has resulted in a substantial revision of the impacts, as they were discussed in the DEIS and SDEIS.

7.0 FEDERAL, STATE, AND LOCAL REGULATIONS

7.1 Compliance with Regulations

Comment ISEGS-30-17: The EIS should address how the project will fully comply with County, State, and Federal laws and regulations.

Response: *The discussion of the applicability of, and conformance with, Federal, State, and local regulations is provided within each resource-specific section in the DEIS.*

7.2 Scope of Regulations

Comment ISEGS-30-18: We request that the California Desert Protection Act of 1994 (CDPA) be added to the list of Laws, Ordinances, Regulations, and Standards (LORS) that are used to determine federal, state and county compliance with established law. This pertains to all applicable sections, but specifically to Mitigation and Cumulative Impact, Visual Resources, and Air Quality.

Response: *The California Desert Protection Act does not apply to BLM's environmental review and administration of the proposed action and alternatives.*

7.3 Coordination with Local Agencies

Comment ISEGS-27-10b: The County should always be included where the applicant is required to submit materials and documentation.

Response: *BLM has reviewed the Mitigation Measures, and verified that the County is listed as a recipient on all documentation for which the County has a permitting role.*

8.0 MITIGATION MEASURES

8.1 Associated Analysis

Comment ISEGS-2-26a: 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. 5 4332(C)(ii), is an understanding that an EIS will discuss the extent to which adverse effects can he 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 ("[without 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.

Comment ISEGS-2-12b: 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).

Comment ISEGS-8-1b: The DEIS fails to identify, document and analyze specific mitigation measures. Based on our review of the BLM's DEIS, it seems unlikely that the general mitigation measures proposed would reduce the environmental impacts of the proposed action to less than significant.

Comment ISEGS-33-7: The FSA has many references to the Energy Commission Compliance Project Manager (CPM). I cannot find in the FSA where this position is defined. Is it missing, or did I miss it?

Response: *In response to these and other public comments, BLM reviewed the manner in which mitigation measures were identified and proposed in the DEIS and SDEIS. In the DEIS, these were generally identified jointly as CEC Conditions of Certification/ BLM Mitigation Measures (except in a few instances where it was specifically stated that a requirement was specifically proposed to address only a Federal or State law or policy). The DEIS proposed more than 135 of these individual mitigation measures, including several that were very detailed in their requirements. An additional six mitigation measures were identified as part of the biological resources analysis in the SDEIS – these additional measures would be applicable to the proposed project, as well as the alternatives evaluated in the SDEIS. Also, BLM did not fail to evaluate mitigation for issues that had uncertainties – in contrast, several of the measures (see SOIL&WATER-5 and TRANS-4) were specifically developed because uncertainties existed, and the agency developed a mitigation measure intended to monitor the potential impact. For each impact identified, the text of the DEIS either proposed a specific mitigation measure, or explained why no mitigation of the impact was possible.*

Where specific public comments have made specific suggestions on how a proposed mitigation measure could be improved, or where an additional measure could be warranted, and the agency has concurred that the recommended modification would be effective and reasonable, the agency has modified the text in the FEIS. However, based on the review of the measures already proposed, we conclude that the development of mitigation measures was sound.

8.2 Nesting

Comment ISEGS-2-26b: 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 may be required in order to properly mitigate for the loss of other resources of these public lands that the proposed project will affect.

Comment ISEGS-1-36a: Mitigation: The compensatory mitigation plan for tortoises relies on so called “nesting” to provide compensatory mitigation for loss of habitat and individuals for multiple plant and animal species. Because the plan described in the FSA/DEIS only addresses desert tortoise habitat, it may in fact be inadequate to provide for the mitigation needs of the many other species that will be impacted by the project. We believe that the Energy Commission and BLM must revisit this issue and explain how the so-called “nesting” of mitigation actually provides for compensatory mitigation for each species of rare or sensitive plant and animal, including listed species as well as Gila monster, burrowing owl, nesting bird species, badger, and Nelson bighorn sheep.

Response: *The only BLM mitigation measure that required compensation by land acquisition and management is that specified within the NEMO Plan amendment, which is the 1:1 compensation for Category 3 desert tortoise habitat. Requirements for*

compensation for other species and Waters of the State are the responsibility of the State of California.

9.0 PROJECT SCHEDULE

Comment ISEGS-1-14: Due to the outstanding unresolved issues that this project has instigated, we would like to request that the deadline for the FSA/DEIS be extended into April, 2010.

We believe it is unwise for the BLM to be using "fast tracking" seemingly to expedite approval of this project. We feel that there are enough outstanding unresolved issues that make approval and construction of facilities by fall of 2010 a very unrealistic goal. We would like to request that this project be removed from the fast track list in order to provide us with more time to examine the issues. We think a more realistic goal for the EIS process should extend into the year 2012, so more comprehensive biological and cultural site surveys can be conducted.

Comment ISEGS-31-8: The Applicant requests that the comments set forth above be addressed in the NEPA review for the ISEGS project. Timely completion of the NEPA process will determine whether this project can be approved and developed in accordance with the ARRA deadlines and the Secretary's policy objective for renewable energy development. The Applicant appreciates BLM's efforts to complete a timely review of the ISEGS application, and stands ready to provide additional information regarding the proposed project.

Response: *BLM appreciates that all parties have an interest in the timing of the completion of the FEIS and BLM's ultimate decision regarding granting of a ROW. Because this environmental review was conducted, at least partly, as a joint process between BLM and the CEC and cooperatively with the Department of Energy, the individual schedule needs of the three agencies, the applicant, the intervenors, and other interested parties has created continual schedule pressures, and in contradictory directions.*

The development of this particular EIS has been an iterative process in which the agencies have reviewed the applicant's plans, the applicant's plans have been revised as part of their preliminary project design efforts and to develop means to reduce impacts, and then agency reviews have been conducted again. The EIS has been a part of the joint review process with the CEC, and then de-linked from it again. Given these complications, the completion of the FEIS has been timely, and also allowed for full evaluation of the proposed project and alternatives.

10.0 MOJAVE NATIONAL PRESERVE

Comment ISEGS-9-2: We understand that the BLM is contemplating preparing a supplement to the current DEIS to address the lack of sufficient alternatives. We think such a step is warranted. It also presents a means for the bureau to fully address the potential impacts associated with the project on Mojave National Preserve and options for mitigating those impacts.

We recommend that the bureau does so through the inclusion of a separate section dedicated to the park in the supplement. Impact topics that need more analysis include: the potential loss of tortoise habitat and how that loss affects the recovery actions in the recovery unit located in the park; air quality; bighorn sheep seasonal migration routes from the park to Clark Mountain for lambing; invasive species; plant species; soundscapes; night skies; management of displaced livestock, including potential impacts to the park; and cumulative impacts on the park from this project and other reasonable foreseeable projects in the vicinity of the park. We would like to work closely with the bureau as it carries out the park related analysis in the supplement. We have both park and nationally recognized subject matter experts that can be of assistance.

Comment ISEGS-30-3: Impacts to Mojave National Preserve have not been fully explored within the DEIS process. NPCA requests that an amendment be issued that determines both the individual and cumulative impacts to Mojave National Preserve.

Comment ISEGS-9-1: We commend the Bureau for its cooperative approach with the State of California to jointly evaluate the environmental implications of the Ivanpah Solar Electric Generating System. The document contains a lot of helpful information. However, it lacks an adequate analysis of potential impacts to Mojave National Preserve and options for mitigating those impacts, including possibly shifting site locations of the various phases of the development to avoid and/ or reduce impacts to the park. For example, the document appears to fully evaluate the implications of the project on the local golf course and the nearby town of Primm, Nevada, but does not apply a similar level of analysis to the preserve, which is a nationally recognized and protected treasured landscape.

In establishing Mojave National Preserve in 1994 as a park unit, Congress specifically directed that it be administered in accordance with the laws applicable to the National Park System. The Congress also noted that the new park unit "possesses outstanding, natural, cultural, historical, and recreational values ... " As a result, protecting the resources and values of the preserve needs to be fully examined in the document along with ways to mitigate impacts.

Comment ISEGS-30-11: Cumulative impacts from loss of grazing acreage. Will the loss of grazing acreage for burros, cattle, and wild horses force those species onto the Clark Mountain area of Mojave National Preserve? Will this diminish available resources for herbivores, including desert bighorn sheep? We request that cumulative impacts including updated DesertXpress train routes be considered in the cumulative analysis

on the impact to Clark Mountain exclave by the loss and fragmentation of cattle, wild horse, and burro acreage adjacent to Clark Mountain.

Comment ISEGS-30-2: When considering these recent planning developments, along with the environmental costs of ISEGS' preferred alternative, cumulative impacts to the Ivanpah Valley, and impacts to Mojave National Preserve, the question must be asked—is this project sited in the right place?

NPCA requests that the BLM consider the impact of approving the first large-scale solar project in California sited outside of an identified Solar Energy Study Area and in a pristine, biologically diverse location that will degrade the federally protected resources of Mojave National Preserve.

In reviewing available information relating to ISEGS, NPCA has determined that processes associated with the construction and the operation of ISEGS are incongruous with the protections awarded to the adjacent Mojave National Preserve. These include ISEGS disrupting Mojave National Preserve's scenic viewshed, the import of light pollution, disruption of the natural soundscape, blocking or limiting access to recreation in Clark Mountain exclave, diminishing wilderness and national park experiences for Mojave National Preserve visitors, adverse impacts to federally listed wildlife species and to critical wildlife habitat, adverse impacts to air quality, and continued water drawdown in the already over-allocated Ivanpah Valley.

NPCA is aware that the DEIS process represents the final opportunity to present alternatives and correct staff and consultant analysis made in this process. NPCA requests that the following issues be thoughtfully considered and addressed though the EIS process. Amendments should be offered where appropriate.

Response: *Throughout the DEIS, SDEIS, and FEIS, BLM has included the evaluation of receptors within the Mojave National Preserve in its impact analyses. This has included wildlife within the Preserve which might enter the proposed project property, air emissions from the facility, and visual and recreational impacts to persons within the Preserve. That analysis has concluded that, in some cases, impacts will occur. Although most of these impacts can be mitigated, others, such as visual impacts to hikers within certain portions of the Preserve, cannot be. BLM has considered these impacts in its selection of a Preferred Alternative in the FEIS, and looks forward to continuing our dialogue with the Preserve as we develop a final decision on the ROW grant.*

In response to this comment, BLM considered moving the discussions of the impacts to receptors within the Preserve to a stand-alone section. However, this would result in dissecting the existing analyses – for instance, some biological analyses would be in the Biological Resources section, and some would be in the Preserve section. The same thing would happen with visual resources. It is possible that a stand-alone section could be provided to summarize the Preserve impacts in a single location, while keeping the resource discussions intact – however, this would result in taking the impact discussions out of context, which presents its own risks.

After considering the pros and cons of developing a stand-alone section, BLM determined that the impacts to the Preserve are best presented within the resource sections.

11.0 AIR QUALITY

11.1 Air Quality

Comment ISEGS-9-5: Section 6.1 - Air Quality -- The DEIS includes an air quality analysis that evaluates emissions from project construction, operation and overlap time periods. The analysis also includes an AERMOD dispersion modeling run for each of these emission scenarios. However, the NPS is concerned that the analysis does not evaluate the air quality impacts to sensitive resources such as Mojave National Preserve. Because the project is so close to the Preserve, the modeling analysis should have included AERMOD receptors in the park and reported the concentration impacts at these receptors in the document . The document also should have included visibility and deposition modeling analyses. Fugitive dust emissions and primary pollutant emissions from construction equipment and point sources have the potential to impact visibility at the park.

The near-field visibility screening model, VISCREEN, should have been run to evaluate visibility effects in Mojave National Preserve. Further, recent studies evaluating the effects of nitrogen deposition in both Mojave National Preserve and nearby Joshua Tree National Park indicate that nitrogen deposition may be causing negative effects to these ecosystems. These effects include changes in species composition and exacerbation of increased growth of non-native exotic species due to the additional atmospheric nitrogen inputs. Further, studies at Joshua Tree NP found that the nitrogen deposition related increases in non-native vegetation significantly increase risk of more frequent wild fires, beyond historical fire return intervals for these systems. For this reason, the air quality section should include a deposition analysis for Mojave National Preserve. The newest EPA approved regulatory version of AERMOD (version 09292) now includes deposition algorithms . The NPS also provides guidance on how to conduct visibility and deposition analyses in our Federal Land Managers Air Quality Related Values Workgroup (FLAG), and our Deposition Analysis Threshold (DAT) guidance documents. We recommend that the analysis is updated to include visibility and deposition impacts at Mojave National Preserve following the NPS provided guidance. Additionally, while we are pleased that the analysis included modeling results using the EPA approved regulatory model for short range transport, we believe the analysis is lacking significant documentation of the assumptions that were used to develop emission estimates and modeling inputs. These concerns are outlined in detail below.

Response*: We understand the NPS concern regarding the Mojave National Preserve, but there are a number of reasons why visibility modeling were not performed for the analysis of project impacts, including the following:*

- *The project is a minor source and does not trigger Prevention of Significant Deterioration (PSD) permitting and associated visibility modeling analysis requirements, and there are no other regulatory requirements to perform visibility modeling.*
- *Even if the project were a major source triggering PSD permitting there are no Class 1 Areas located within 100 km of the site, the Mojave National Preserve is not a listed Class 1 Area, so again visibility modeling would not be triggered.*
- *The facility's maximum permitted stationary source emissions of NOx, PM, and SOx are less than 12, 6 and 2 tons per year; the predominate wind patterns in the site area are directly away from the Mojave National Preserve; and the maximum project impacts all occur well east and outside of the portion of the Clark Mountain portion of the Preserve and north of the project site well away from the main portion of the Preserve, which when considered together are enough to conclude that the Mojave National Preserve will not be significantly impacted from the ISEGS project.*

Considering these regulatory and technical issues a visibility modeling analysis for the Mojave National Preserve is not considered necessary.

Also, please see the responses to Comment ISEGS-9-6 and ISEGS-9-7 below.

Comment ISEGS-9-6: Page 6.1-3, Table 6 - This Table depicts the estimated emissions for project construction, both on a daily basis and on an annual basis. More information should be provided on the assumptions used to derive these estimates, particularly for PM10, NOx and VOCs due to the nonattainment issues for these pollutants in the region. For instance, were estimates of acres disturbed, miles of road, level of activity, soil characteristics, etc. used to develop PM10 emission estimates for fugitive dust? What types of construction equipment were assumed, what emission factors (i.e. AP-42) were used for the various types of equipment? The document should disclose the specific data sources and assumptions that went into developing these estimates. Further, it is unclear how the annual emission estimates were derived from the daily maximum estimates. For instance, if one assumes 365 days in a year, the annualized emissions reported in Table are much lower than what would be anticipated based on the daily emissions (52 tons / year for PM10 vs. 24.5 reported in Table 6). If the analysis assumed that construction emissions would not occur each day of the year, the document should also disclose these assumptions.

***Response**: The emission estimate methods and assumptions documentation is included with the AFC materials and data response materials available on the California Energy Commission website at the following address:*

http://www.energy.ca.gov/sitingcases/ivanpah/documents/index.html

The SA/DEIS provided explicit reference sources under the emission estimate tables and the SA/DEIS reference list included the reference names, docket numbers, and dates of receipt for parties to be able to find and review this information.

Specifically, the methodology, data and assumptions used by the applicant to develop emissions estimates for the construction phase of the project are presented in Appendix 5.1F, Attachment 5.1F-1 of the AFC, and Data Response, Set 1D (Air Quality Data Requests 8 and 9). The types (e.g., bulldozer, scraper, water truck, pick-up truck, etc.) and number of equipment by month over the proposed construction schedule for ISEGS 1, 2 and 3 are presented along with estimates on the level of activity and emission factors. Maximum short term emissions estimates are based on the equipment mix and activity levels during Month 12. Annual emission estimates are based on the average equipment mix during the peak 12-month period out of the overall project construction period. Per Attachment 5.1F-1, annual emissions were calculated from average daily emissions assuming construction activities would occur 255 days per year.

Comment ISEGS-9-7: Page 6.1-13 - This page states that the "onsite fugitive dust emissions estimate may be underestimated given the amount of activity on the site and appropriate level of control for the applicant's proposed mitigation measures (specifically unpaved roads)." If the staff has reason to believe that the emissions for this important pollutant have been underestimated, how can it be certain that the proposed mitigation measures are effective in reducing emissions below the conformity de minimums levels, or that the modeling analysis adequately reflects impacts to the National Ambient Air Quality Standard for PMI0 in the region? This should be clarified in the analysis.

Additionally, no specific information on the AERMOD modeling analysis was provided . For example, the extent of the modeling domain was not identified, how far did it extend from the project area? Were discrete receptors included in sensitive areas such as Mojave National Preserve to evaluate the impacts to these places? The modeling inputs for emission sources, meteorological data sources, etc. were not described in detail. While modeling inputs for the point sources, such as stack parameters, were identified in the document, this information was not provided for the area source emissions, such as emissions from construction. More information should be provided identifying how emissions from construction activities were input into the model. Finally, the document does not specify what results are reported in Tables 9, 10 and 11. Are these the maximum concentrations modeled for the domain, or are they the high second high concentrations? Where do these impacts occur relative to the project area? This information should be disclosed in the document.

***Response**: Part 1. In the SA/DEIS it was noted that the applicant's estimate, with the specific control assumptions assumed by the applicant, may underestimate emissions. However, it was also indicated that with BLM's recommended mitigation measures, specifically the use of soil stabilizers on any unpaved roads and inactive construction areas, the overall emissions estimated for the project are reasonable. Considering the overall length of the construction schedule and recommended mitigation measures it is clear that the annual PM10 emissions would not exceed the general conformity de*

minimus level of 100 tons per year from construction or operation. The modeling analysis also indicates that the project impacts would not cause new exceedances of the federal PM10 standards.

Part 2. The air dispersion modeling methods and assumptions documentation is included with the AFC materials and data response materials available on the California Energy Commission's project website at the following address:

http://www.energy.ca.gov/sitingcases/ivanpah/documents/index.html

The SA/DEIS provided explicit reference sources under the modeling result impact tables and the SA/DEIS reference list included the reference names, docket numbers, and dates of receipt for parties to be able to find and review this information.

The specific information describing the AERMOD modeling methods and assumptions is provided in the AFC and Data Response Set 1D (Air Quality Data Requests 8 and 9). The details on the air quality modeling inputs and analyses are presented in Appendices 5.1D, 5.1F and 5.1I. The modeling domain (i.e., receptor grid) extended a minimum of 5 kilometers in each direction from the project fence line. The receptor grid did not include any receptors in the main part of the Mojave National Preserve which is over 5 kilometers south from the project site, but did include receptors approximately 1.6 kilometers into the eastern boundary of the small Clark Mountain portion of the Preserve. The applicant used hourly surface meteorological data from Jean, Nevada located 16 miles from the project site and upper air data from the Desert Rock, Nevada station located 70 miles from the project site. Appendix 5.1F presents the details for the construction emissions. The applicant grouped the construction emission sources into three categories: exhaust emissions, construction dust emissions and windblown dust emissions. The exhaust and construction dust emissions were modeled as volume sources. The windblown dust emissions were modeled as an area source. The project impacts in Tables 9, 10 and 11 are the maximum modeled impacts. In general, due to the relative low release heights for the modeled sources, the maximum modeled impacts occur at the project fence line.

Comment ISEGS-9-8: Pages 6.1-21, 6.1-24 and 6.1-25 - This section states that "[t]he modeling analysis shows that, after implementation of the recommended fugitive dust mitigation measures, the project's construction is not predicted to cause violations of the NAAQS. Therefore, no significant NEPA impacts would occur after implementation of the fugitive dust mitigation measures." It is unclear whether the results in Tables 9, 10 and 11 reflect these additional recommended mitigation measures, or if this information is omitted from the document. This should be clarified, and if necessary, any results of additional modeling which reflect mitigation options should be included. Conversely, if the modeling results for the tables reflect impacts after applications of the additional mitigation options, the results without these mitigations should also be disclosed in the document.

The analysis evaluates emissions related to construction, project operation and overlap periods where project operation and construction are ongoing simultaneously. It is unclear whether the project operation and overlapping analyses considered ongoing fugitive dust emissions related to wind erosion of disturbed area, access and maintenance vehicles and other continued sources of dust emissions. This should be clarified in the document. Further, if ongoing fugitive dust emissions beyond the construction phase were not considered in the analysis, the modeling analysis should be rerun, with these emissions included.

***Response**: The SA/DEIS specifically notes the following:*

> "Staff has recommended additional mitigation measures, specifically the use of soil binders on unpaved roads and other inactive disturbed surfaces during construction, so that the applicant's fugitive dust emissions estimate and associated impact analysis will be reasonable for this project."

It was BLM's determination that the recommended fugitive dust mitigation, specifically the use of soil binders, would provide a control efficiency equivalent to that assumed by the applicant in their construction emission calculations. This means that the applicant's estimates, which for fugitive dust emission are clearly mitigated emission estimates, are considered valid and the associated modeling impact analysis are based on a reasonable mitigated emission estimate for the project.

As noted previously the specifics of the applicant's emission estimate are available in the AFC and data response documents available on the California Energy Commission website at the following address:

http://www.energy.ca.gov/sitingcases/ivanpah/documents/index.html

Comment ISEGS-30-4: Deterioration of air quality within the Clark Mountain enclave and other points within Mojave National Preserve. Poor air quality can adversely affect the health of outdoor recreational users, decrease and diminish visual resources, reduce and diminish night sky viewing opportunities, and adversely affect ecosystems, encouraging the spread of invasive plants.

***Response**: The impact analysis did not find significant localized impacts, so impacts to areas more removed than the local air dispersion modeling domain, used to determine maximum project pollutant concentration impacts, would be much lower than the maximum project impacts.*

Comment ISEGS-2-30: The FSA/DEIS fails to adequately address several air quality issues including but not limited to PM10. 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.

***Response**: The EIS proposes three mitigation measures (AQ-SC3, AQ-SC4, and AQ-SC7) that provide a detailed list of BMPs to address fugitive dust, with the stated objective of preventing all fugitive dust plumes from leaving the project. By necessity, these plans must be developed in parallel with the applicant's detailed project design, and will likely require revision as lessons are learned during project construction. The mitigation measures specify the objectives, general procedures, and standards to be met.*

Comment ISEGS-1-22: Without adequate fugitive dust mitigation, the project would have the potential to exceed the General Conformity PM10 (particulate matter) applicability threshold during construction and operation, and could cause potential localized exceedances of the PM10 levels during construction. This potential exceedance of federal air quality standards would be considered a direct, adverse significant impact under NEPA.

What long-term effects will removing 4,000 acres of topsoil have on the air quality of the region? Erosion from clearing is likely to substantially increase the amount of particulate matter that will be airborne during strong wind events. How much water will be used to control dust during construction? Over-runs of estimated water use because of excessive dust is a potential problem.

Comment ISEGS-22-4: During construction and later (all ground cover will be scraped away) dust will be a problem, even greater than it is now. I have seen walls of dust for hours in that area without any surface disturbance projects. This project will make it worse. And the wind does blow, hence all the wind turbines plan in the area.

***Response**: The air quality evaluation performed by the applicant, and used to support the DEIS, assumed a worst-case scenario in which all vegetation would be removed, and the entire site graded. The applicant has changed that plan, and now intends to minimize grading and cut vegetation rather than remove it. In addition, the applicant proposes to follow mitigation measures from the South Coast Air Quality Management District CEQA Guidelines, which have been incorporated into Mitigation Measures AQ-SC1 to AQ-SC-5 in the DEIS. In addition, the agency has required implementation of Dust Control Plans during both construction and operations phases.*

Comment ISEGS-2-22: The proposed project is located in the Mojave Desert Air Quality Management District area, and is already in nonattainment for PM-10 particulate matter. 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 C02 uptake through photosynthesis. 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.

***Response**: Mitigation Measures AQ-SC3 and AQ-SC4 in the DEIS provide significant construction phase fugitive dust control requirements, well above those required by the rules and regulations of the local air quality district, and AQ-SC2 requires an onsite air quality mitigation compliance manager who will assure mitigation is performed to meet the required performance standards. The agency has also required implementation of a Dust Control Plan (AQ-SC7) during the operations phase that has equivalent performance standards to those required during construction. Also, the air quality evaluation performed by the applicant, and used to support the DEIS, assumed a worst-case scenario in which all vegetation would be removed, and the entire site graded. The applicant has changed that plan, and now intends to minimize grading and cut vegetation rather than remove it.*

The consideration of soil crusts, physical or biotic, was included during the evaluation of potential project fugitive dust impacts and was a major factor in the requirement to use soil binders both during construction and operation (Mitigation Measures AQ-SC3 parts a and b, and AQ-SC7) that will mitigate the loss of dust control from the disturbance of the natural soils crusts. Please also see the response to Greenhouse Gases and Climate Change comments in Section 11.2.

Comment ISEGS-6-16: EPA commends BLM for incorporating fugitive dust control measures to limit particulate matter (PM 10) impacts. We agree with the statement on page 6.1-28 that a solar renewable energy project with a 30 to 40 year life located in an ozone and PM10 nonattainment area, and just upwind of other ozone and PM10 nonattainment areas, should address its contribution to the potentially ongoing nonattainment of the PM 10 and ozone standards. For these reasons, we support the additional mitigation measures to address ozone precursors that are discussed on page.6.1-28. We also were pleased at the inclusion of mitigation measure AQ-SC2 which would require the development of an Air Quality Construction. Mitigation Plan (AQCMP) as well as engine requirements for diesel equipment specified by mitigation measure AQ-SC5.

EPA supports incorporating mitigation strategies to reduce or minimize fugitive dust emissions as well as more stringent emission controls for PM and ozone precursors for construction-related activity. All applicable state and local requirements and the additional and/or revised measures listed below should be included in the SDEIS in order to reduce impacts associated with PM and toxic emissions from construction-related activities:

Recommendations:

Due to the serious nature of the PM10 and 8-hour ozone conditions in the Mojave Desert Air Basin and in neighboring Clark County, EPA recommends that the best available control measures (BACM) for these pollutants be implemented at all times and that the SDEIS and the FEIS incorporate the Construction Emissions Mitigation Plan. These measures should also be incorporated into the ROD. We recommend that all applicable requirements under local rules and the following additional measures be incorporated into a Construction Emissions Mitigation Plan.

Fugitive Dust Source Controls:

- Stabilize open storage piles and disturbed areas by covering and/or applying water or chemical/organic dust palliative where appropriate. This applies to both inactive and active sites, during workdays, weekends, holidays, and windy conditions.
- Install wind fencing, and phase grading operations, where appropriate, and operate water trucks for stabilization of surfaces under windy conditions.
- When hauling material and operating non-earthmoving equipment, prevent spillage, and limit speeds to 15 miles per hour (mph). Limit speed of earthmoving equipment to 10 mph.

Mobile and Stationary Source Controls:

- Reduce use, trips, and unnecessary idling from heavy equipment.
- Maintain and tune engines per manufacturer's specifications to perform at California Air Resources Board (CARB) and/or EPA certification, where applicable, levels and to perform at verified standards applicable to retrofit technologies. Employ periodic, unscheduled inspections to limit unnecessary idling and to ensure that construction equipment is properly maintained, tuned, and modified consistent with established specifications. CARB has a number of mobile source anti-idling requirements. See their website at: http://www.arb.ca.gov/msprogitruck-idlingitruck-idling.htm
- Prohibit any tampering with engines and require continuing adherence to manufacturer's recommendations
- If practicable, lease new, clean equipment meeting the most stringent of applicable Federal or State Standards.
- Utilize EPA-registered particulate traps and other appropriate controls where suitable, to reduce emissions of diesel particulate matter and other pollutants at the construction site.

Administrative controls:

- Identify all commitments to reduce construction emissions and incorporate these reductions into the air quality analysis to reflect additional air quality improvements that would result from adopting specific air quality measures.
- Identify where implementation of mitigation measures is rejected based on economic infeasibility.
- Prepare an inventory of all equipment prior to construction, and identify the suitability of add-on emission controls for each piece of equipment before groundbreaking. (Suitability of control devices is based on: whether there is reduced normal availability of the construction equipment due to increased downtime and/or power output, whether there may be significant damage caused to the construction equipment engine, or whether there may be a significant risk to nearby workers or the public.) Meet CARB diesel fuel requirement for off-road and on-highway (i.e., 15 ppm), and where appropriate use alternative fuels such as natural gas and electric.
- Develop a construction traffic and parking management plan that minimizes traffic interference and maintains traffic flow.
- Identify sensitive receptors in the project area, such as children, elderly, and infirm, and specify the means by which you will minimize impacts to these populations. For example, locate construction equipment and staging zones away from sensitive receptors and fresh air intakes to buildings and air conditioners.

Response*: Mitigation measures AQ-SC1 through AQ-SC7 and TRANS-1 include specific control measures that are identical to, as stringent as, or more stringent than the BACM identified by USEPA. Technical feasibility and effectiveness rather than cost was the primary factor in the selection of the air quality mitigation measures.*

Comment ISEGS-6-21h: For example, the DEIS acknowledges that the Project, in combination with the present and future projects, would result in cumulative air quality effects, but concludes that the Project would not substantially contribute to the cumulative air quality impacts after implementation of staff's recommended mitigation measures (at p. 6.1-33). The analysis is insufficient, however, in that it did not discuss the cumulative localized contributions to air emissions from concurrent construction or operations of the multiple projects described in the cumulative impacts analysis. The localized cumulative air quality impacts of such a scenario should be considered reasonably foreseeable and the SDEIS should discuss the impacts of multiple construction projects overlapping.

Response*: Additional information regarding overlap of construction has been added to the text in the revised cumulative impact analysis in Section 5.*

11.2 Greenhouse Gases and Climate Change

Comment ISEGS-15-3: Ivanpah will also avoid more than 13 million tons of CO2 emissions over its 30-year lifecycle, as well as 85 percent of the air emissions from an equally-sized natural gas plant.

Comment ISEGS-19-3: In addition to the economic benefits, the project generates numerous environmental benefits as well. lvanpah will avoid more than 13 million tons of C02 emissions over its 30-year Iifecycle, as well as 85 percent of the air emissions from an equally-sized natural gas plant.

Comment ISEGS-38-3: The Ivanpah project will avoid more than 13 million tons of C02 emissions over its 30 year lifecycle, as well as 85 percent of other air emissions, compared to an equally-sized natural gas plant.

Response*: Although BLM does not agree with the values presented in these comments it does agree with the general findings regarding the western states' regional air quality and global GHG environmental benefits of the proposed ISEGS project. These environmental benefits have been considered in the selection of the Preferred Alternative in the FEIS, and will be considered in the decision whether or not to issue the ROW grant.*

Comment ISEGS-6-17: EPA commends BLM for including a substantive discussion on greenhouse gases as well as estimates of carbon dioxide emissions from the construction of the proposed Project. We recommend that the SDEIS discuss the potential impacts of climate change on the Project as well as any mitigation measures that could reduce the Project's air emissions.

Recommendation:

- Identify specific mitigation measures needed to 1) protect the Project from the effects of climate change, 2) reduce the Project's adverse air quality effects, and/or 3) promote pollution prevention or environmental stewardship.

Response*: BLM considers these issues to be adequately covered in the SA/DEIS as follows:*

- *1) The potential effects of climate change in the project area is unknown, and the project design already considers reasonable worst-case weather events, so there is no mitigation required to protect the Project from effects of Climate Change.*
- *2) and 3) The project already has a number of mitigation measures to reduce criteria pollutant emissions from construction and operation, which will also reduce GHG emissions, and no other mitigation measures are needed for this type of renewable energy project that will cause a large net reduction in GHG emissions. Additionally, the BLM or the California Energy Commission will be requiring a number of other mitigation measures, such as HAZ-1 through HAZ-6*

and BIO-1 through BIO-20, to promote non-air quality/GHG related pollution prevention and environmental stewardship.

Comment ISEGS-11-1b: Furthermore, the project will fundamentally alter the functional integrity of the landscape, and reduce the desert landscape's unique ability to sequester atmospheric carbon dioxide (a greenhouse gas) 24-hours per day.

Comment ISEGS-30-13: A more comprehensive study of the carbon impacts of ISEGS would be appropriate for this project, considering its purpose and need statement. This should account for the projected carbon budget required to build component parts, to transport parts to the site, to construct and disassemble the site, and to operate using natural gas during non-solar production conditions. This budget should also account for the release of sequestered carbon into the atmosphere by destruction of desert habitat and soils, the short-term loss of carbon absorption from vegetation on site, and the projected long-term success of revegetation at the site, providing the net loss of carbon absorption associated with that success.

Comment ISEGS-2-32a: 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. 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.

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 CO2 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 MTC02E, with 25,458 MTC02E 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 CO2 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' (C02e) basis, and a temporary PSD significance level for GHG emissions of between 10,000 and 25,000 tpy C02e.").

Comment ISEGS-1-46: Living soil crusts also store C02 and their removal may contribute to a lack of organic offsets anthropogenic greenhouse gas emissions. It would be a wise idea for BLM to calculate the amount of C02 that the removal of 4,000 acres of soil crust and vegetation would offset.

Comment ISEGS-1-21: Scientific studies have revealed that desert vegetation and biological soil crusts in the ecosystems, as well as soils, have the ability to store C02 gases (Have Desert Researchers Discovered a Hidden Loop in the Carbon Cycle? Richard Stone: Science 13 June 2008: Vol. 320. no. 5882, pp. 1409 - 1410 DOI: 10.1126/science.320.5882.1409).

How much C02 storage capability would be replaced by development? If the goal is indeed to reduce greenhouse gases, is it wise to remove this much carbon storing living crust? Please provide a detailed analysis on the amount of GHG that would otherwise be offset by an intact arid ecosystem.

Carbon balance is not discussed as a section in the FSA/DEIS, but we want to point out some discrepancies about utility-scale industrial renewable energy as an offset for the burning of carbon. CO2 will be emitted as trucks drive around hours a day, every day, washing mirrors and doing maintenance chores. We question how much greenhouse gases will be cut by the project when this is factored in. Not an idle issue, the same problem was brought up at a workshop for Tessera's Solar 1 Stirling engine solar project near Barstow, California: Tessera agreed to look into using alternative fuel or even electric trucks for washing at the 8,230-acre site to reduce carbon emissions (Transcript of September 16, 2009, Data Request and Issues Resolution Workshop in Barstow.

We would also like to know where each part is going to be made (will the mirrors be built in Europe?), and how much carbon will be released shipping these parts to the project site?

No Sulfur Hexafluoride (SH6) minimization is discussed regarding transmission line upgrades. SH6 is colorless and very powerful greenhouse gas used primarily in electrical transmission and distribution systems and as a dielectric in electronics. The EPA calls SF6 a "High Global Warming Potential gas." From www.epa.gov: "Electrical Transmission and Distribution. The primary user of SF6 is the electric power industry. Because of its inertness and dielectric (nonconductive) properties, SF6 is the industry's preferred gas for electrical insulation, current interruption, and arc quenching in the transmission and distribution of electricity. SF6 is used extensively in circuit breakers, gas insulated substations, and switchgear. The U.S. inventory report provides detailed descriptions on SF6 emissions from electrical transmission and distribution and how

they are estimated (see the Chapter entitled “Industrial Processes"). EPA has also established a voluntary program, called the SF6 Emissions Reduction Partnership for Electric Power Systems, which works with the electric power industry to reduce SF6 emissions."

SF6 is 24,000 times as potent as CO2 in it’s global warming impacts. The Environmental Protection Agency has declared “that the electric power industry uses roughly 80% of all SF6 produced worldwide“. Ideally, none of this gas would be emitted into the atmosphere. In reality significant leaks occur from aging equipment, and gas losses occur during equipment maintenance and servicing. With a global warming potential 23,900 times greater than CO2 and an atmospheric life of 3,200, one pound of SF6 has the same global warming impact of 11 tons of CO2. In 2002, U.S. SF6 emissions from the electric power industry were estimated to be 14.9 Tg CO2 Eq. (http://www.epa.gov/electricpowersf6/basic.html).

Please provide a detailed analysis of the amount of SF6 gases that would be released by this project.

Comment ISEGS-2-31: 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.

Comment ISEGS-11-2b: Renewable energy projects, including the proposed ISEGS project, are elements of a national climate change mitigation strategy to reduce greenhouse gas emissions. Several California state, national, and international climate

change reports describing climate change adaptation strategies underline the importance of protecting intact wild lands and associated wildlife corridors as a priority adaptation strategy measure.

The FSA/DEIS fails to identify and analyze the loss of carbon sequestration that will occur under the proposed project. Desert vegetation types are able to sequester atmospheric carbon dioxide (greenhouse gas) 24 hours/day, unlike other vegetation communities that are able to sequester CO2 only during daylight hours. Not only will the project, as located, adversely affect a number of rare species it will also adversely impact the diverse photosynthetic productivity of the region. The rich species composition of the site is unique in that all known photosynthetic pathways are represented. The photosynthetic activities of cool weather C3 plants, the warm weather C4 plants, and the nocturnal CAM (crassulacean acid metabolism) plants are significant. The loss of the density and diversity of cactus species would contribute to the carbon dioxide imbalance that green energy is purported to fix. CAM photosynthesis is found in cactus and succulent plants and is the most efficient photosynthetic process for fixing carbon dioxide of the three represented pathways present on site. This issue demands that a location that has already been disturbed should be the primary choice for energy development. Since this is one of many energy projects anticipated within Ivanpah Valley, and indeed throughout the CDCA, it needs to set a rational precedence and needs to be adequately analyzed in the cumulative effects section of the environmental document.

***Response**: The discussion of greenhouse gases and global warming in the DEIS has been revised to include the following:*

- *An analysis of natural CO_2 uptake loss due to the project.*
- *An analysis of the energy payback time for thermal solar projects.*

Please note that the secondary CO_2 uptake effects of the project are extremely minor in nature and are overwhelmed by the reduction in CO_2 that that project's near zero CO_2 energy provides. Additionally, the energy payback time for thermal solar projects is on the order of a few months, which clearly demonstrates that the project will cause a reduction in CO_2 emissions.

BLM disagrees with comments that the project's GHG emissions are significant. This is a renewable energy project, that is defined by its very nature as a project that reduces GHG emissions. Increasing renewable energy is one of the major policy goals toward the reduction of GHG emissions, both within the State of California and nationwide. Additionally, the PSD tailoring rule was recently adopted and the thresholds were increased to 100,000 tons for new projects, this project's operating emissions would be well under the PSD tailoring rule threshold and would not be subject to PSD permitting for GHG emissions.

An emission estimate of all direct GHG emission sources, including truck and employee travel and SF6 was included in the GHG analysis as shown in Tables 5.2-1, 5.2-2, and

5.2-7. The CO2e emissions of SF6 and operating vehicle use were found to be minor in comparison with the other project operating emission sources, and are negligible in comparison with the indirect emission reductions from this renewable energy project.

The construction and operation emission GHG emission estimates were determined through information available in the AFC and data responses, as cited in the SA/DEIS table sources, and further correspondence with the applicant. As noted the GHG emission estimates were based on the latest California Air Resources Board emission factors. The AFC, data responses, and additional applicant correspondence can be found on the California Energy Commission's website for the project:

http://www.energy.ca.gov/sitingcases/ivanpah/documents/index.html

Comment ISEGS-2-33b: 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 offsets or mitigation that is dependent on conditions outside of its control. See, e.g. Neighbors of Cuddy Mountain v. US. 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 CO2 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.

Comment ISEGS-2-32b: 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.

***Response**: These comments are factually incorrect and appear to show a misunderstanding regarding the significant differences in magnitude between the direct project and indirect GHG emissions increases associated with the project and the indirect project emission reductions from energy displacement. The assumption of renewable energy and its displacement of fossil fuel fired energy and related beneficial impact for GHG emissions is based on verifiable science. The GHG section in large part is based on information provided by the California Energy Commission's Electricity Analysis Office, which has modeled the effects of renewable energy including its verifiable GHG emission reduction impacts. The direct emissions from construction and indirect emission from the loss of carbon sequestration are minor in comparison with the reduction in fossil-fuel based GHG emissions that will occur due to this renewable energy project[1]. GHG is not a short-term problem it is a global long-term problem and this renewable energy project would cause long-term GHG emission reductions.*

Comment ISEGS-2-32c: 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. 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 C02-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 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

[1] These reductions could vary from approximately 1.0 MTCO2e/MWh for displacing coal power plant generation to 0.35 MTCO2e/MWh, which means an indirect reduction of anywhere between approximately 300,000 MTCO2e and 880,000 MTCO2e, which is well over an order of magnitude more than the project's direct annual operating GHG emission rate.

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 C02 equivalent (Greenhouse gas table 2, FSNDEIS at 6.1-64).

***Response**: The boiler's most stringent operational limit would be established in CEC Condition of Certification AQ-SC10, which would limit the boiler's operation to no more five percent of the total annual heat input for the facility. This limit was used to determine the maximum GHG emissions from the boilers. The California Energy Commission has jurisdictional authority for this power facility and will be responsible for enforcement of AQ-SC10.*

Initial commissioning is not exempt from the requirements of AQ-SC10, so emissions during initial commission of the boilers or other equipment are not expected to be any higher than those of other years.

Please also see the responses above for a discussion on the significance of the project's GHG emissions

12 BIOLOGICAL RESOURCES

12.1 Biological Resources - General

Biological Resources - General

Comment ISEGS-7-22: The Ivanpah SEGS project will impact over 4,000 acres of desert tortoise habitat and likely displace over 50 individual tortoises. The project will destroy several rare plant communities, a number of which have a significant portion of their range in the Northern Ivanpah Valley. Finally, many other species may be impacted, including migratory birds and reptiles. Defenders urges BLM to seek avoidance measures, adequate mitigation measures if necessary, and a robust alternatives analysis. A strong EIR will only help this project going forward, as well as the many projects that will follow.

Comment ISEGS-6-19a: Proposed designs for the Project should avoid and minimize impacts to all federally threatened and endangered species, as well as BLM species of concern and State species of concern. In addition to desert tortoise, the site of the proposed Project includes sensitive species such as bighorn sheep, the American badger, and the golden eagle, among others. Any mitigation measures that result from consultation with the US Fish and Wildlife Service to protect sensitive biological resources should be included in the FEIS and, ultimately, the ROD. While the DEIS describes mitigation measures for potential impacts to sensitive species, it does not provide a clear commitment to implement these measures. The FEIS should also clearly articulate under which alternatives sensitive biological resources, including the desert

tortoise, bighorn sheep and American badger, would be least impacted and to what extent impacts can be mitigated.

Comment ISEGS-21-2: Moreover, the FSA determines that unmitigable damage will be done to rare plant assemblages and species by this project. If the staff determines that something as important as biological resources cannot be mitigated, then the project should not be allowed to proceed. Additionally, important habitat for the burrowing owl, golden eagle, loggerhead shrike, and badgers will be lost due to this project. All of the biological resources threatened by this project are a signal that it should not proceed.

Comment ISEGS-2-11b: 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.

Comment ISEGS-9-9: Biological Resources, Page 6.2-1 - Paragraphs 2 and 3 on this page state that "[the Ivanpah Solar Electric Generating System (ISEGS) project 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. Approximately 4,073 acres of occupied desert tortoise habitat would be permanently lost and a minimum of 25 desert tortoises would need to be translocated west of the ISEGS project site." "Other special-status wildlife species potentially impacted by the project because of loss of breeding and/or foraging habitat include burrowing owl, loggerhead shrike, Crissal thrasher, golden eagle, and American badger. The project would also affect approximately 2,000 ephemeral drainage segments on the ISEGS site, potentially resulting in direct or indirect impacts to the wildlife functions and values provided by 198 acres of waters of the state . "

Comment ISEGS-8-12: The NEMO Plan set the goal for special status species as “Populations and their habitats are sufficiently distributed to prevent the need for listing” (NEMO Plan at 2-6). The FSA/DEIS fails to fully analyze impacts to gila monsters, burrowing owl, other bird species, bats, and other wildlife or to provide alternatives to avoid impacts, or provide measures to minimize impacts. In doing so, it fails to meet NEPA’s requirements or satisfy the NEMO Plan’s objectives.

Comment ISEGS-7-2: In addition, the FSA/DEIS does not adequately address the significant loss of habitat and cumulatively significant impacts associated with a project that spans more than 4,000 acres of high quality, relatively undisturbed desert land.

Comment ISEGS-30-6a: Thermal plumes have the potential to pose risks for birds, bats, and insects, and these impacts need to be fully analyzed.

Response*: These comments are general in nature. Each item in these comments is also the subject of specific comments, which are summarized and responded to in the following subsections.*

12.2 Biological Resources - Tortoises

Tortoise - General

Comment ISEGS-2-38: 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.

Comment ISEGS-6-18: Up to 4,073 acres of desert tortoise habitat could be permanently impacted by the proposed Project. Long-term impacts may occur as a result of permanent loss of habitat, increased predation, and habitat fragmentation. The DEIS states that a Biological Assessment has been prepared that analyzes the potential impacts, and the U.S. Fish and Wildlife Service (USFWS) is preparing a Biological Opinion (pg. 2-18). Additionally, the DEIS indicates that BLM continues to engage with the California Department of Fish and Game (CDFG), USFWS, the California Energy Commission (CEC), and the Applicant to finalize details of a compensatory mitigation proposal.

Recommendations:

- EPA recommends BLM include the outcome of its consultation with the U.S. Fish and Wildlife Service and the Biological Opinion, if completed, in the SDEIS. Provide analysis of impacts on, and mitigation for, covered species, including:
  - Baseline conditions of habitats and populations of the covered species;
  - A clear description of how avoidance, mitigation and conservation measures will protect and encourage the recovery of the covered species and their habitats in the project area;
  - Monitoring, reporting and adaptive management efforts to ensure species and habitat conservation effectiveness.
- Incorporate complete information on the compensatory mitigation proposals (including quantification of acreages, estimates of species protected, costs to acquire compensatory lands, etc.) and analyze the environmental and economic trade-offs of acquiring the off-site lands versus reducing the size of on-site alternatives for equivalent protection.
- Include discussion of CDFG's ultimate compensation ratio recommendation for this Project and how their recommendation compares economically and environmentally to CEC's and BLM's proposed ratios.

Comment ISEGS-7-12: The proponent has characterized the site as disturbed land with little to no value for wildlife. Defenders recognizes that this project site has been in the Clark Mountain grazing allotment (CA- 690-EA06 26). However, the grazing activity on the site has been nominal. Defenders staff has visited the site and we concur with the assessment in the FSA/DEIS (p. 6.2-29) that "the ISEGS project area provides high quality habitat for this species, with low levels of disturbance and high plant species diversity." The desert tortoise population in the Northern Ivanpah Valley is also unique because it is the highest elevation at which this species is known to reside in the State (FSA, page 6.2-29). Therefore, the area could be very important for desert tortoise survival if the species is forced to seek out higher elevation habitat as a result of climate change and aridification of the Mojave Desert.

Comment ISEGS-8-18a: The NEPA requires the BLM to include appropriate mitigation measures in its environmental analysis. The management guidelines for Category III desert tortoise habitat are to "Limit tortoise habitat and population declines to the extent possible by mitigating impacts" (Spang et al. 1988). The NEMO Plan does not cover projects greater than 100 acres (NEMO Plan at 2.27). The BLM must thus describe in its NEPA document the impacts of the proposed action, explain the specific measures that will mitigate these impacts, and analyze how these measures would reduce impacts to less than significant and thus avoid compromising the NEMO Plan's conservation strategy.

Comment ISEGS-8-10: In summary, the direct, indirect, and cumulatively impacts of the proposed project on the threatened desert tortoise will be severe. Since the Northeastern Mojave population is the most genetically distinct desert tortoise population in California, and the North Ivanpah Valley desert tortoises exhibit behavioral adaptations that may be important for the long-term survival of the species, protection of these tortoises may well be critical to the conservation of the entire listed population in California. We are extremely concerned that the impacts of the proposed project will endanger California's Northeastern Mojave desert tortoise population, and will place the entire Mojave desert tortoise population at risk.

Comment ISEGS-6-19b:

- A clear commitment to implement mitigation measures to avoid and minimize adverse effects to the habitat of the desert tortoise and other sensitive species should be made in the SDEIS and, ultimately, the ROD.
- Mitigation measures that result from consultation with the US Fish and Wildlife Service to protect sensitive

Comment ISEGS-39-2: The construction of ISEGS as proposed by BrightSource Energy will directly contribute to the continued decline of the Mojave Desert Tortoise because 4,073 acres of occupied, high-quality desert tortoise habitat will be permanently lost and because adjacent habitat will be degraded and fragmented.

The ISEGS vicinity is Bureau of Land Management (BLM)-designated Category I Desert Tortoise Habitat, per the "*California Statewide Desert Tortoise Management Policy*" and is more recently recognized at Category I Desert Tortoise Habitat in the BLM's Northern and Eastern Mojave (NEMO) Plan Amendment to the California Desert Conservation Area Plan. While the ISEGS site is not within a Desert Wildlife Management Area (DWMA), the *Desert Tortoise Recovery Plan* identifies habitat outside DWMAs like the ISEGS area as providing corridors for genetic exchange and dispersal of desert tortoises among DWMAs. As early as the Preliminary Staff Assessment for ISEGS, California Energy Commission staff recognized that the non-lakebed portion of the Ivanpah Valley is excellent desert tortoise habitat and that the "…ISEGS project area provides high quality habitat for this species, with low levels of disturbance and high plant species diversity" (2008, 5.2-30).

Comment ISEGS-39-4: The importance of the tortoise population at Ivanpah must not be under valued. The annual replacement rate within stable populations of the desert tortoise is estimated to be only about two percent; therefore, adult tortoises must be protected to ensure optimal recruitment of new individuals into the population. This is essential in the northern Ivanpah Valley as the tortoises there are part of the NEMO Desert Tortoise Recovery Unit and this population is declining. The most recent *Range-Wide Monitoring Report* (2009) shows that current densities of tortoise within NEMO – at an average 1.7 animals per square mile – are the lowest among the six Recovery Units recognized in the *Recovery Plan*. It is not surprising, then, that Kevin Hunting of the Department of Fish and Game writes in his letter of October 27, 2009 to the California Energy Commission:

> The Department believes this known population of desert tortoise in its natural habitat within the northern portion of Ivanpah Valley, but outside a DWMA, may be valuable to the recovery of the species for the same reasons stressed in the Recovery Plan.

Response*: The EIS has acknowledged the project's impact to desert tortoises and their habitat, and has developed Mitigation Measures to minimize and compensate for the impacts.*

Tortoise – Issues Regarding Protection Classification

Comment ISEGS-12-2: Given that the Northeastern Recovery Unit is a distinct and evolutionary significant population of the threatened Mojave desert tortoise, the BLM is legally obligated, as Chapter 3 of the CDCA Plan asserts, to "avoid sensitive resources" in granting any ROW.

The importance of avoiding impacts to the Northeastern Desert Tortoise Recovery Unit is underscored by our conviction that the cumulative impacts of ISEGS and the other energy projects proposed for the

vicinity could result in the loss of the Northeastern Mojave Desert Tortoise Recovery Unit as a viable population in the northern Ivanpah Valley…. Direct, indirect and cumulative impacts of the proposed ISEGS project on the desert tortoise include destruction and loss of high quality habitat, take of the population, population fragmentation, and compromised viability.

Comment ISEGS-2-27: 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. 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:...

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 Prirnm). The BLM ignored the fact that although this population of tortoises is somewhat separated from those below 1-15, it is not separated from the tortoise populations to the northeast within Nevada. In fact, connectivity has been maintained under 1-1 5 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, 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:...

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.

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.

Comment ISEGS-8-3: The FSA/DEIS fails to provide crucial baseline information such as the amount of habitat in the Northeastern Mojave Recovery Unit in California, and fails to adequately document impacts to this resource. Without an adequate description of the ESU, a full analysis of the impacts of the proposed project is impossible, nor is a

meaningful comparison of alternatives or the development of adequate mitigation measures possible.

Comment ISEGS-7-11: The proposed project site is classified by BLM as Category III desert tortoise habitat, which is the least protective category. The 1994 Desert Tortoise Recovery Plan included the North Ivanpah Valley in the proposed Ivanpah Desert Wildlife Management Area (“DWMA”), recognizing the ecological value of the area and its importance to desert tortoise recovery. Unfortunately, BLM chose to exclude the North Ivanpah Valley from the DWMA in the Northern and Eastern Mojave (“NEMO”) Planning Area amendments to the California Desert Conservation Area (“CDCA”) Plan. The importance of this area is evidenced by the number of tortoises that continue to occupy this site. Surveys completed by the project proponent’s consultants found at least 26 desert tortoises on this site. BLM should expect to find approximately double that number - 52 tortoises - currently occupying the site. The estimated population of desert tortoises occupying the project area is approximately twice the observed number due to variable factors of detectability and above-ground activity. This Northern Ivanpah Valley tortoise population is very significant, particularly because the population there has crashed from a one-time maximum density of 50 tortoises per square mile (Desert Tortoise Recovery Plan, page F13). As discussed above, the proponent’s survey results show that approximately 52 tortoises likely occupy the 6-7 square-mile site (7-8 tortoises per square mile). This is significantly less than the onetime maximum density referenced above.

Comment ISEGS-1-36b: Protection Status: Unless the No Action alternative is taken and cumulative degradation and fragmentation of habitat is avoided, we are concerned that the desert tortoise this northeastern Evolutionarily Significant Unit will be upgraded from Federally Threatened to Federally Endangered.

Comment ISEGS-2-11c: 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). However, the agency failed to include the recommendations of the Desert Tortoise Recovery Plan 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.

Comment ISEGS-8-18b: In the FSA/DEIS, BLM proposes mitigating impacts at the power plant site by acquiring habitat and implementing recovery actions in the Eastern Mojave Desert Tortoise Recovery Unit (FSA/DEIS at 1-19).

This is populated by a different desert tortoise ESU. This will not mitigate impacts to the affected Northeastern Mojave ESU. Because the DEIS has failed to address direct, indirect and cumulative impacts to the Northeastern Mojave desert tortoise population and the significance of this ESU to the conservation of the entire listed population, and because the DEIS fails to present specific mitigation measures it is impossible to determine the adequacy of the mitigation. The primary mitigation mechanism for any large scale project that will permanently destroy and disturb large tracts of desert tortoise habitat must be acquisition of replacement habitat. The location of this replacement habitat is not identified in the FSA/DEIS. However, it is doubtful if sufficient replacement habitat exists within the Northeastern ESU in California to offset habitat loss on this scale.

Comment ISEGS-5-12: The DEIS omitted any discussion the 1994 Final and 2008 Draft recovery goals. NEPA requires that the agency disclose to the public the underlying environmental data from which . . . [an] expert derived her opinion." Ecology Center v. Austin 430 F.3d 1057, 1067-68 (9th Cir. 2005). Here, BLM was required to show, based on facts and evidence, that any federal approvals for the ISEGS Project was consistent with the 1994 Recovery Plan.

The 1994 and 2008 Plan recommend that land managers focus recovery efforts toward tortoise conservation areas; however, the Plans also emphasize that land managers should try to limit the loss of habitat outside conservation areas as much as possible. Id. The Recovery Plans emphasize that activities occurring outside the boundaries of existing tortoise conservation areas can negatively affect tortoise populations. Draft Recovery Plan.

In addition, the DEIS acknowledged that the direct impacts to the tortoise would be immense:...

As discussed below, the mitigation measures set forth in the DEIS are insufficient. As such, these direct impacts would severely impact the desert tortoise, in contravention of the goals of the Endangered Species Act, the Recovery Plans and NEPA. Thus, the DEIS is inadequate.

Comment ISEGS-8-4: In California, the Northeastern Mojave desert tortoises are restricted to the Ivanpah Valley with the boundaries marked by the Clark, Ivanpah, and New York Mountains. The California Natural Diversity Database (CNDDB) estimates the size of the desert tortoise habitat within the Recovery Unit in California at 184,519.6 acres (CNDDB 2009). The CNDDB polygon excludes most of the Ivanpah Dry Lake bed but includes Interstate 15, Nipton Road, Ivanpah Road, Nipton, Ivanpah, the railroad, the Primm golf course, some mountainous terrain and other unsuitable habitat (see CNDDB 2009b for a map showing the polygon). It thus considerably overestimates the

amount of Northeastern Mojave desert tortoise habitat in California. Based on the CNDDB polygon the North Ivanpah Valley accounts for about 24% or almost a quarter of all desert tortoise habitat in the Northeastern Mojave Recovery Unit in California.

In 1988, the BLM began categorizing desert tortoise habitat under its range wide plan for desert tortoise habitat management (Spang et al, 1988). The North Ivanpah area was categorized as category I habitat and was managed as such until the signing of the ROD for the NEMO Plan Amendment in December 2002. The Desert Tortoise (Mojave Population) Recovery Plan included the North Ivanpah Valley within the proposed Ivanpah DWMA (USFWS 1994 at 41). The 1994 Recovery Plan included the North Ivanpah Valley in its proposed Ivanpah DWMA (see USFWS 1994 Figure 9). The NEMO Plan's Desert Tortoise Biological Team recommended consideration of the North Ivanpah Unit by the BLM for desert tortoise conservation in the NEMO Planning Area (NEMO Plan at A3). The 2002 EIS for the NEMO Plan recognized the value of the North Ivanpah Valley for desert tortoise and considered an alternative that included designating the North Ivanpah Unit as an Area of Critical Environmental Concern (ACEC) and part of the Ivanpah DWMA. However, the NEMO Plan's preferred and adopted alternative focused desert tortoise recovery on the Eastern Mojave Recovery Unit to the detriment of the Northeastern Mojave Recovery Unit in California and the North Ivanpah Valley was not included in the Ivanpah DWMA. Under the NEMO Plan, all desert tortoise habitat outside DWMAs was reclassified as Category III. The designation Category III does not mean that the habitat is degraded, contains low tortoise densities, or is unimportant it simply means it is not currently within a designated DWMA. The BLM manages all categorized desert tortoise habitat to protect desert tortoise with the management goal for Category III habitat being to limit tortoise habitat and population declines. The change in designation had no effect on the habitat per se. It remains good quality desert tortoise habitat. The basis for this change in designation was the BLM's focus on the Eastern Mojave ESU – "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 at 1-3.

Comment ISEGS-2-11d: 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.

Comment ISEGS-8-5: Tortoises in the Ivanpah Valley differ from other desert tortoise populations in California (Lamb, 1986; Lamb et al., 1989; Murphy et al., 2007). Northeastern Mojave desert tortoises exhibit the greatest genetic differentiation of the five recognized units occurring in California (Murphy et al., 2007). According to the DEIS, the desert tortoise population in the North Ivanpah Valley is also unique because it is the highest elevation at which this species is known to reside in the state (PSA/DEIS at 6.2-29).

The limited range, overall importance to genetic diversity, and behavioral adaptations underlie the need to conserve this desert tortoise population in California. This is especially important given the threats posed by global climate change. As the USFWS 2008 Draft Revised Recovery Plan notes, “Climatic regimes are believed to influence the distribution of plants and animals through species-specific physiological thresholds of temperature and precipitation tolerance. Warming temperatures and altered precipitation patterns may result in distributions shifting northward and/or to higher elevations, depending on resource availability (Walther et al. 2002). We may expect this response in the desert tortoise to reduce the viability of lands currently identified as “refuges” or critical habitat for the species.” (USFWS 2008 at 133).

The 2002 EIS for the NEMO Plan recognized the value of the North Ivanpah Valley for desert tortoise. It considered an alternative (Alternative 2 “Desert Tortoise Recovery”) that included designating the North Ivanpah Unit as an Area of Critical Environmental Concern (ACEC) and part of the Ivanpah DWMA. However, the NEMO Plan’s preferred and adopted alternative focused on the Eastern Mojave Recovery Unit. Thus the FSA/DEIS cannot simply defer to the NEMO Plan’s analysis since that plan did not address conservation of the Northeastern Mojave desert tortoise ESU nor did it address California State interests in these tortoises.

The 1984 status report tortoise density map of the Ivanpah Valley indicates that tortoise densities in the North Ivanpah Valley ranged from 20-100/sq mile with about half of the habitat (including the area of the power plant footprint) in the range of 50-100/sq mile (Berry et al., 1984 Plate 6-13). The most recent range wide monitoring survey report shows that tortoise densities within the Northeastern Mojave Recovery Unit are the lowest of the six recognized Recovery Units, with an estimated density of 1.7 tortoises/square km or 4.4 tortoises/square mile based on surveys conducted in 2007 (USFWS 2009). However, that estimate does not include the Ivanpah Valley which historically had some of the highest tortoise densities in the Northeastern Mojave Recovery Unit. The USFWS currently includes the Ivanpah Valley within its Ivanpah monitoring stratum; the majority of the stratum is located west of the Ivanpah Mountains in the Eastern Mojave Recovery Unit (see Figure 7 in USFWS 2009). For the 2007

survey, only one of the sixteen transects was within the Ivanpah Valley. Both factors make using the Ivanpah monitoring stratum data problematic for estimating tortoise densities in the Ivanpah Valley. There is a permanent study plot located in the southern end of the valley in an area that was identified as having a high tortoise density in the 1984 status report (Berry et al., 1984 Plate 6-13). The study plot population declined between 1986 and 2002. More recent density estimates are not yet available.

Comment ISEGS-2-13a: 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 Plan was issued in 2008, however it has not been finalized. Current data indicate a continued decline across the range of the listed species 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. 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" indicating that the tortoises within this Recovery Unit are genetically distinct from other Recovery Unit populations. Recent population genetics studies 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.

***Response**: BLM has reviewed the comments, and the associated text in the DEIS and SDEIS. In the FEIS discussion of the affected environment, a more detailed description of the tortoise protection status of this particular property has been added. However, this discussion does not change the conclusion regarding acceptable land uses, mitigation measures, and compensation associated with Category III habitat and MUC-L land use designation.*

Tortoise – Cumulative Impacts

Comment ISEGS-12-3: Should the ISEGS project, the DesertXpress High Speed Passenger Train, the upgrade of the 35-mile Eldorado-Ivanpah Transmission line, and the proposed OptiSolar (First Solar) power project all become a reality, impacts to the habitat supporting tortoises in this recovery unit may be insunnountable and could endanger this distinct tortoise population. These cumulative impacts are even more staggering when the facilities proposed by Nextlight Renewable Power on 7,840 acres of high quality tortoise habitat in the eastern side of the Valley are factored in.

Comment ISEGS-10-5: The lands subject to the NextLight right of way applications in Nevada, see id., Table 3 at 5-17 ("Q" and "Q") are high quality desert tortoise habitat as are those subject to the Ivanpah right of way application, see, e.g., id. at 6.2-29. Both are occupied by intact populations of tortoises. See, e.g., id. at 6.2-51. The analysis of cumulative impacts of to this species is inadequate.

Although the DEIS acknowledges that the project will cause significant impacts to wildlife, including loss of occupied tortoise habitat and fragmentation and disturbance to adjacent tortoise habitat, id. at 6.2-51, as well as the very problematic history of tortoise translocation efforts, id. at 6.2-49, it does not contain a thorough analysis of the likely cumulative impacts of these various activities. Instead it contains simple generalizations about the impacts of past and current actions on wildlife habitat, including tortoise habitat, within the Ivanpah Valley. For example, it states that "past and current actions have significantly reduced and degraded" wildlife habitat in the area and that this project, combined with future proposed projects would also significantly affect a genetically distinct subpopulation of desert tortoise." Id. at 6.2-71. It further states that "[w]hile no precise estimate can be made of the future habitat loss associated with the proposed projects listed above, collectively these projects would remove and fragment tens of thousands of acres of additional habitat" and that "[a]ll of these past, present and future proposed
activities contribute to the significant loss of Ivanpah Valley vegetation communities, wildlife habitat, and species status species." Id. These statements constitute virtually the entirety of the DEIS' treatment of cumulative impacts. While they are undoubtedly true, they do not constitute an analysis of the cumulative impacts of the Ivanpah project when combined with the many other projects proposed for this area.

Comment ISEGS-8-16b: The proposed project in conjunction with other projects in the area will have significant cumulative effects on the areas resources especially to desert tortoise, rare plants, and visual resources.

The FSA/DEIS fails to adequately consider that the population of the Northeastern Mojave ESU desert tortoises the Ivanpah Valley is unique in California and is at high risk of extirpation from the state from the cumulative effects of this project, the Optisolar (now First Solar) power project adjacent to ISEGS, the proposed DesertXpress High Speed Passenger Train, and the upgrade of the Eldorado-Ivanpah transmission line in California alone. The cumulative effect of these projects will be to convert the Northern

Ivanpah Valley Unit into a de facto solar zone and industrial zone which no longer supports multiple use nor provides habitat for desert tortoise and other wildlife.

In addition to ISEGS and Optisolar (First Solar) 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 Nevada (Primm Valley) portion of the Ivanpah Valley. These lands are also high quality desert tortoise habitat with intact and robust populations of desert tortoise. The FSA/DEIS fails to adequately assess the cumulative impacts from these projects and other solar projects on the Nevada side of the border to Northeastern Mojave ESU desert tortoises. The impacts include destruction and loss of habitat, take of tortoises, habitat fragmentation, population fragmentation, loss of connectivity, and loss of viability. The cumulative impacts of these developments severely threatens the long-term survival of the Northeastern ESU desert tortoises in the entire Ivanpah basin and threatens to sever connectivity between this and other Recovery Units thus compromising recovery. Since the Northeastern Mojave population is the most genetically distinct desert tortoise population in California, protection of these tortoises may well be critical to the survival of the four other Recovery Units found in California. The cumulative impacts threaten to endanger California's Northeastern Mojave desert tortoise population, and this places the entire desert tortoise population in California at risk.

Comment ISEGS-2-34b: 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.

Comment ISEGS-39-5: The recent history of the desert tortoise is that entire populations have been extirpated in numerous areas of the Mojave region due to the cumulative impacts of human activities, and the Desert Tortoise Council is deeply concerned that the cumulative impacts of ISEGS and the numerous energy projects

planned for the Ivanpah Valley may lead to the extirpation of the Northeastern Mojave (NEMO) Desert Tortoise Recovery Unit population in the Ivanpah Valley.

The developments that raise our concern are all proposed for construction within the NEMO Recovery Unit, one of the six Desert Tortoise recovery Units designated in the Desert Tortoise Recovery Plan. These populations were previously and appropriately identified based on genetics, behavior, ecology, geographic isolation, and morphology. Since the Recovery Plan was published, a number of studies have compared tortoises between different Recovery Units and confirmed biological differences among the populations. Most recently, "*A Genetic Assessment of the Recovery Units for the Mojave Population of the Desert Tortoise …* " (Murphy, et.al. 2007) presents new evidence that desert tortoises in the Recovery Unit constitute distinct populations, confirming the validity of the 1994 Plan's six Recovery Units. Each of these evolutionary significant population units faces a distinct suite of past and ongoing impacts to tortoises and supporting habitat.

Comment ISEGS-39-6: The potential cumulative impacts to desert tortoises and supporting habitat within the Northeastern Mojave Recovery Unit land area is alarming. Direct, indirect and cumulative impacts of the proposed ISEGS project on the desert tortoise include habitat destruction and loss of habitat, take of the NEMO population, population fragmentation, and compromised viability. Should the ISEGS project, the DesertXpress High-Speed Passenger Train, the upgrade of the 35-mile Eldorado-Ivanpah Transmission line, and the proposed OptiSolar (First Solar) power project all become a reality, impacts to the habitat supporting tortoises in thi recovery unit may be insurmountable and could endanger this distinct tortoise population. These cumulative impacts are even more staggering when the facilities proposed by Nextlight Renewable Power on 7,840 acres of high quality tortoise habitat in the eastern Ivanpah Valley are factored in.

Response*: The DEIS and SDEIS acknowledge and quantify the cumulative impacts to desert tortoises and their habitat as a result of the proposed project, and the other projects referenced in these comments.*

Tortoise – Reported Baseline Information

Comment ISEGS-1-36c: The 2007/2008 protocol desert tortoise surveys found 25 live desert tortoises, 97 desert tortoise carcasses, 214 burrows, and 50 other tortoise sign. Tortoise sign and density was greatest in Ivanpah 1 at the southern boundary of the project site and was less dense as the survey moved towards the Clark Mountains and Ivanpah 3, according to the FSA/DEIS. On several October visits to the sites, we found numerous burrows on the northern part of the site, however.

Survey methodology: We believe that more surveys will need to be conducted to get a more accurate estimate of population density, such as mark-recapture or line-distance sampling. We would like to request surveys be conducted yearly to the fall of 2012.

What type of survey methods were used to declare only 25 tortoises are on the preferred project site? Any biologist will tell you that an estimate like this holds little weight. It could very well be that there are three times that many. How many surveys were conducted? Were they reconnaissance surveys? Was this number only determined by presence/absence surveys? We would like to caution the BLM against accepting these as the final numbers. Additional surveys will be needed for a more accurate estimate.

Comment ISEGS-8-6: The FSA/DEIS is unclear as to how many tortoises will be directly affected by the proposed power plant and cites only the numbers of animals seen in various surveys. Table 5 of the August 2009 survey report (Supplemental Data Response, Set 2I at 9) provides estimates of the adult tortoise densities on the Ivanpah 1, Ivanpah 2 and Ivanpah 3 sites for comparison with the later surveys performed in proposed translocation areas. As was revealed at the recent CEC Hearing that table is incorrect. Based on the corrected data, the estimated abundances are 2.9 tortoises/sq km on Ivanpah 1, 1.7 tortoises/sq km on Ivanpah 2, and 2.6 tortoises/sq km on Ivanpah 3. These values are comparable to or higher than the 1.7 tortoises/square km estimated from surveys of conservation areas within the Recovery Unit conducted during the range-wide line-distance sampling effort (USFWS 2009). The estimated densities are about the twice the number of adult tortoises encountered during surveys. Thus the estimated number of tortoises on the project site is approximately 50 adults with an unknown number of young. This does not include the unknown number of resident tortoises at the proposed translocation site that may be affected by the translocation nor tortoises that may be impacted by the increased use of roads in the area.

***Response**: The text in the FEIS has been revised to include both the actual number of tortoises identified in the surveys, and an estimate of the actual number based on other estimating methods. In the Biological Opinion for this project the USFWS estimated that approximately 35 or 36 subadult or adult desert tortoises are likely to occur within the 3,520-acre ISEGS project site and associated linears.*

Tortoise – Impact of Hazardous Materials

Comment ISEGS-1-36d: We are concerned that destructive events such as flash flooding will release chemical residues into the ecosystem, thus having the potential to intensify this problem. We would like to request a study on the impacts of hazardous materials and other toxins potentially released by the proposed project would have on desert tortoise populations relating to the disease cutaneous dyskeratosis.

***Response**: The hazardous materials to be used, and the potential for their release, was evaluated in the Hazardous Materials section of the DEIS and SDEIS. The potential for stormwater damage to the areas where hazardous materials would be used and stored was evaluated in the Soil and Water section of the DEIS and SDEIS. These analyses concluded that release of these materials outside of the project boundaries is highly*

unlikely, and therefore analysis of the impact of such an unlikely event on tortoises downstream of the facility is not reasonable.

Tortoise - Connectivity

Comment ISEGS-1-36e: Habitat Quality and Connectivity: The applicant dismisses the project site as a category three habitat and claims that the project site is not essential to maintenance of viable populations. We would like to remind BLM and the applicant that protection of the tortoise does extend outside of just critical habitat or DWMA's. The project site is located in a topographically favorable region with excellent habitat. This region of the project site is important to maintain as undeveloped because it provides connectivity between and within recovery units of the desert tortoise.

Comment ISEGS-8-8: Fragmentation of occupied desert tortoise habitat results in smaller, isolated desert tortoise populations that become increasingly susceptible to negative effects. Fragmentation is particularly problematic when population densities are low. Fragmentation decreases viability and results in isolated "pockets" of desert tortoises that are at greater risk of extirpation from stochastic events. The FSA/DEIS mentions fragmentation of habitat but does not quantify the degree of fragmentation nor does it provide an analysis of the viability of the fragmented desert tortoise populations. The proposed ISEGS site bisects the North Ivanpah Valley and will directly fragment the existing breeding population. Indirect effects of the proposed project such as increased use by vehicles and "improvement" of dirt roads will lead to further fragmentation.

The Ivanpah Valley desert tortoise population is threatened with isolation from tortoises in the rest of the Northeastern Mojave Recovery Unit by existing and proposed developments in the Primm Valley in Nevada. The proposed project will contribute to the fragmentation effects of these proposed and existing developments. These cumulative fragmentation effects must be considered and addressed.

Comment ISEGS-8-7: Connectivity between desert tortoise populations is essential to maintain gene flow and genetic heterogeneity. The FSA/DEIS mentions connectivity but provides no discussion or analysis. The FSA/DEIS at 6.2-57 states that connectivity "will be discussed in more detail below". Connectivity is then included in the list at FSA/DEIS 6.2-72 but no further detail, discussion or analysis is provided.

According to the Draft Revised Desert Tortoise Recovery Plan (at 46), connectivity between the Northeastern Mojave and Eastern Mojave desert tortoise ESUs is provided by the Mountain Pass area in California. Disruption of this connectivity poses a threat to the genetic diversity of the Mojave population as a whole. Because the proposed project will impact tortoises in the area identified as providing connectivity, impacts to connectivity between the tortoises in the Northeastern Mojave Recovery Unit and the adjacent Eastern Mojave Recovery Unit must be considered and fully addressed.

The Ivanpah Valley desert tortoise population is threatened with isolation from tortoises in the rest of the Northeastern Mojave Recovery Unit by existing and proposed developments in Nevada's Primm Valley. The BLM must also consider connectivity between the Ivanpah Valley desert tortoise population and the rest of the Northeastern Mojave ESU.

Comment ISEGS-30-15: Fragmentation of habitat should be viewed regionally and cumulative impacts to the region and to Mojave National Preserve should be addressed. The connectivity of habitat is critical to any adaptation strategy seeking to address the effects of global climate change on species. An analysis of the project's immediate impact to connected habitat, and its contribution to cumulative impacts to regional connectivity should be made.

Response*: The impact of the proposed project on the connectivity of tortoise habitat was evaluated in the DEIS, and was one of several reasons that the Mitigated Ivanpah 3 and Modified I-15 Alternatives were evaluated in more detail in the SDEIS. The FEIS describes mitigation measures (fencing I-15 and enhancing undercrossings, habitat restoration and reclamation of closed routes in the DWMA) that would enhance connectivity for desert tortoise within the Northeastern Mojave Recovery Unit and offset project impacts to connectivity.*

Tortoise – Potential Mitigation (other than Land Acquisition)

Comment ISEGS-8-18c: The DEIS does not address mitigating impacts to connectivity at all. The principle underlying acquisition of compensation habitat is that that replacement habitat can be enhanced with additional short-term measures to compensate for the habitat that is lost. Potential enhancement actions for impacts to the Northeastern Mojave desert tortoise population in California's Ivanpah Valley include erecting tortoise barrier fencing along major roads. Fencing reduces tortoise loss, reduces road kill (and thus foraging opportunities for ravens), and effectively increases habitat available for use by tortoises. Other potential enhancement actions include removing livestock grazing and formally protecting habitat by changing its land use designation. The BLM should consider plan amendments to (a) allow buyout and retirement of grazing allotments, including the Clark Mountain Allotment; (b) reduce vehicle routes and OHV activity; and, (c) expand the Ivanpah DWMA. Including the North Ivanpah Valley within the Ivanpah DWMA and thus protecting the remaining habitat there is the only foreseeable way that the cumulative effects of the project could be ameliorated.

Response*: The EIS acknowledges that enhancement, both in the local project area and in the acquired lands, is a valuable tool in mitigation. However, consideration of changes to land use designations and/or tortoise protection status are outside of the scope of this analysis of a single ROW application. The FEIS describes mitigation measures (fencing 50 miles of roads in tortoise habitat and enhancing undercrossings, habitat restoration and reclamation of 50 closed routes in the DWMA) that would*

enhance connectivity for desert tortoise within the Northeastern Mojave Recovery Unit and offset project impacts to connectivity.

Tortoise – Monitoring of Mitigation Requirements

Comment ISEGS-33-6: This incident is an example of why compliance monitors and biologists must be completely independent of the contractor, the BLM, and managing agencies. BIO-5, p 6.2-101, gives substantial authority to the Designated Biologist and Monitor.

The CM must be able to act independently when violations occur, without fear of job loss or other retribution. Complete independence is required. In addition, there must be a sufficient number of independent monitors to handle the workload demanded by such a large project.

Instead, BIO-1 of the FSA (p.6.2-98) requires no more than one Designated Biologist, assigned by the project owner. The mitigation measures, p.6.2-98, talks of Biological Monitors. I could not find in the FSA a specification of how many Biological Monitors are required, or qualifications, or a statement that they would be working solely under the supervision of the biologist. Please identify these, if I missed them in the documentation. Problems:

- One biologist is completely inadequate for this six square-mile project with as many as 1000 workers at a time, potentially working multiple shifts.
- It appears (BIO-1, p.6-2.98) that the biologist will be selected by and work for the contractor. This invites, does not avoid, conflict of interest. Instead, for complete avoidance of conflict of interest, and so the biologist can perform duties completely independently of the contractor, the contractor must have no part in selection of biologists. If the contractor pays for the biologist, the contractor must have no control over the biologist's continued employment or timely payment for services.
- There is no specification for Biological Monitors (that I found) .

Response*: BLM has reviewed Mitigation Measure BIO-1, and provided additional specificity regarding the number and roles of the monitors. The agency agrees that more than one Designated Biologist and Biological Monitor will be required to monitor mitigation measures, but nothing in BIO-1 precludes the project owner from hiring as many Designated Biologists and Biological Monitors as needed. The Designated Biologist must comply with explicit reporting requirements to the BLM Authorized Officer on implementation of the mitigation measures, and the Authorized Officer retains independent authority to stop construction or operations if needed.*

Tortoise - Translocation – General

Comment ISEGS-4-2: The DEIS states the proposed project would result in the permanent loss of approximately 4,073 acres of occupied desert tortoise habitat, and that a minimum of 25 desert tortoises would need to be translocated off the project site. In addition to direct loss of habitat, the project would fragment and degrade adjacent habitat, and could promote the spread of invasive non-native plants and desert tortoise predators such as ravens. Based on these factors, the DEIS concluded the proposed project would result in impacts that would be significant with respect to NEPA significance criteria in 40 CFR 1508.27.

The DEIS proposes translocation as a mitigation measure for Project impacts to desert tortoises. However, translocation itself is known to have a significant impact on desert tortoises. The risks and uncertainties of translocation to desert tortoises are well recognized in the scientific community, and they were acknowledged in the DEIS. The Science Advisory Committee of the Desert Tortoise Recovery Office has stated desert tortoise translocation is fraught with long-term uncertainties. The high level of mortality associated with the recent Ft. Irwin translocation efforts highlights the need to refine mitigation strategies for impacts to desert tortoise. In the meantime, impact avoidance remains the only reliable strategy to maintaining viable desert tortoise populations.

Given the dangers translocation poses to desert tortoises, the California Department of Fish and Game (CDFG), U.S. Fish and Wildlife Service (USFWS), and other wildlife experts have expressed concern regarding the outcome of proposed desert tortoise translocations for the Project. Wildlife agencies and experts have requested that BLM address these concerns as part of any translocation plan approved for the Project. The DEIS provides no information on how the Project will reduce the risks and uncertainties associated with translocating desert tortoises. Despite repeated requests by wildlife agencies, the applicant has not yet provided a Desert Tortoise Translocation Plan acceptable to the CDFG and USFWS. Without details on how the translocation plan will differ from other plans (which resulted in high levels of mortality), or even the locations where tortoises will be released, translocation cannot be considered a viable form of mitigation.

Comment ISEGS-2-44: 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.

Comment ISEGS-2-39: 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 "taken 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. 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. 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 he 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 area) was not identified. 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. 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.

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.

Comment ISEGS-12-6: Further, the FSA/DEIS seriously underestimates the probable desert tortoise mortalities as a result of relocation/translocation…. The relocation/translocation of desert tortoises - even if done well - will contribute little to the long-term survival of the desert tortoises in the northern Ivanpah Valley because the habitat surrounding the ISEGS site and the relocation/translocation sites will be severely fragmented as a consequence of ISEGS. Finally, the relocation/translocation plan does not require long-term monitoring and study of the relocated/translocated desert tortoises. BrightSource Energy will simply dump the tortoises under the current plan.

Comment ISEGS-5-13a: Still, the DEIS acknowledged the dangers of translocation: “[c]apturing, handling, and relocating desert tortoises from the proposed site after the installation of exclusion fencing could result in harassment and possibly death or injury.” DEIS 6.2-48. And, according to the DEIS, once a tortoise is moved outside of its home range, it will likely try to make its way back. DEIS 6.2-49. Indeed, “translocation is

fraught with long-term uncertainties, notwithstanding recent research showing short-term successes, and should not be considered lightly as a management option." Id.

Comment ISEGS-5-13b: Second, the BLM was required to disclose the adverse impacts associated with translocation itself. For example, successful translocation activities are considered to have approximately a 20% mortality rate. Recently, however, a large-scale translocation was attempted near Fort Irwin. Of the approximately 600 tortoises moved, at least 250 of them died. In reality, that mortality estimate is low, as tortoises are currently in hibernation and the full impact of the translocation efforts on the tortoise population remains to be seen. Failure to examine and disclose the recent Fort Irwin experiment violates NEPA's "hard look" requirement for the proposed mitigation measures. See Seattle AudubonSoc. V. Espy, 998 F.2d 699, 704 (9th Cir. 1993) (court found that forest service failed to take a hard look where it did not address in any meaningful way reports concluding that the spotted owl was declining more substantially and quickly then had been thought.)

In short, the Project's disclosed impacts, combined with the undisclosed impacts associated with translocation show that the Project's effects on Desert tortoise in the Ivanpah Valley could be catastrophic.

Comment ISEGS-1-36f: Translocation site: Recent translocations of tortoises at Ft. Irwin, California, however, failed and were halted, as coyotes began finding and killing large numbers of tortoises after they were moved to new locations. The California Department of Fish and Game (CDFG) and US Fish and Wildlife Service (USFWS) have concerns about the outcome of proposed desert tortoise translocations for the ISEGS project, and have requested that those concerns be addressed in any relocation/ translocation plans approved for the ISEGS project. Please address this.

Comment ISEGS-7-14a: The BLM must also consider the substantial risks posed by the Ivanpah SEGS translocation program. The U.S. Army suspended its Desert Tortoise translocation program at Fort Irwin when at least 15% of the translocated tortoises died, mostly due to predation1. Some unofficial estimates have now placed the Fort Irwin desert tortoise mortality rate at nearly 30%. Other impacts to tortoises must be fully analyzed and addressed, such as new water sources that attract predators, impacts to tortoise water sources from proposed groundwater pumping, impacts from roads, and impacts from vegetation management. For example, if additional water sources will be placed on site, it could increase raven populations within the surrounding area. A raven monitoring plan would need to be included, as ravens can have a very detrimental impact on tortoises. In addition, while the project will obviously involve roads and a great deal of traffic (particularly during construction), the project application fails to consider the use of fencing to avoid impacts to the tortoise. Roads lead to direct and indirect impacts on desert tortoise including roadkill mortality, destruction of burrows, dispersion of invasive plants, predators, development, recreation, and possibly disease (Boarman 2002). Roads and highways tend to fragment wildlife habitat and reduce the movement of animals through the landscape (Tsunokawa and Hoban 1997, Evink 2002). Road kill is the greatest human-caused source of direct mortality to vertebrate wildlife in the

United States with an estimated one million vertebrates killed per day on roads in America (Forman and Alexander 1998, Kline and Swan 1998). The cumulative impact of habitat fragmentation on desert tortoise is exacerbated by roads and the amount of habitat that they degrade (Boarman 2002).

Comment ISEGS-2-13b: 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 "[bloth short- and long-term effects" in order to determine the significance of the project's impacts. 40 C.F.R. 5 1508.27(a) (emphasis added). BLM has clearly failed to do so in this instance with respect to the impact to the tortoise.

Comment ISEGS-22-2: The project will have significant impacts on the Mojave Desert. Addressing these impacts is vague language that speaks to "protect and enhance offsite populations or some other form of compensatory mitigation". The Desert Tortoise is an example of a population that will have to be "translocated" when the 4000 acres is scraped to clear all existing plants, and then regularly sprayed to keep anything from growing. Removing the Desert Tortoise is a complex undertaking, if they are to survive. The Fort Irwin translocation showed how difficult, high mortality rates and high predation rates. The translocation rate from Las Vegas to Primm had a mortality rate close to 50%. And yet with previous problems, there is no plan, only language that says, "The applicant will develop a Desert Tortoise Translocation Plan". All the planning needs to be done first, which includes predation reduction details so the conditions of the Fort Irwin translocation are not repeated.

Comment ISEGS-37-1: This project is yet another land grab as this proposal would be responsible for the zeroing out of the last remaining wild burro herd in the Clark Mountain area and would have equally devastating consequences for the threatened Desert Tortoise, 26 of whom would be displaced from their habitat to make room for a project that should be moved to a less sensitive area that does not compete with native wildlife. Remember last year's disastrous relocation of 600 tortoises from their desert habitat to BLM land to make room for expanded training operations at Fort Irwin during which close to 100 animals perished. The loss of America's iconic wild burros and desert tortoises are unacceptable losses. The eradication of OUR endangered wildlife on OUR public lands for the sake of special interests must be stopped. A solar plant can be relocated. Extinction is forever. Please reconsider this most harmful proposal.

Comment ISEGS-28-11: The DT relocation plan is also wholly unacceptable as these are a Threatened Species that demand appropriate management to protect them from extinction. The recent Fort Irwin mortality rates of translocated tortoises are a clear indication that this “tool” is wholly unacceptable for species preservation of the DT’s. The damage to the desert ecosystem through grading of the soil is unacceptable as is the lifelong use of herbicides on the desert floor – especially in light of the fact that this will be occurring in environmental proximity to the Ivanpah Desert Tortoise ACEC.

Comment ISEGS-39-3: The construction of ISEGS would further conflict with the Desert Tortoise Recovery Plan goals because the project is likely to result in the death of any number of tortoises in conjunction with the relocation and translocation of animals form the proposed site. At least 38 percent of the monitored tortoises in the 2008 Fort Irwin translocation, for instance, expired. As the Desert Tortoise Scientific Advisory Committee concluded at its meeting of March 13, 2009. "… translocation is fraught with long-term uncertainties … and should not be considered lightly as a management tool." Even small-scale translocation have had mortality rated in excess of 20 percent.

Response*: BLM agrees that translocation poses risks for the translocated and resident desert tortoise, and are aware of the outcome of large scale translocation efforts at Fort Irwin and elsewhere. A detailed discussion of the risks and the uncertainties associated with translocation was provided in the FSA/DEIS. BLM considers translocation to be a minimization measure for desert tortoise rather than mitigation for project impacts. The applicant is currently revising their translocation plan with guidance from CDFG and USFWS, and no translocation plan will be implemented until it meets the approval of those agencies.*

Tortoise – Translocation – Lack of Plan

Comment ISEGS-5-13c: Here, the DEIS completely failed as an information document concerning plans to relocate or translocate Desert tortoise. The DEIS completely omits a translocation plan for the public and decision makers to review:...This reliance on a state agency to analyze a Project's impacts on federally endangered species and then propose mitigation for that species violates NEPA on two grounds. First, the DEIS does not even disclose where the "satisfactory translocation site" is located in relation to the Project. Failure to provide any information on the relocation plan, the principle mitigation scheme, is per se a violation of NEPA.

Comment ISEGS-7-15a: The BLM is constrained by specific policy guidance in implementing translocation programs. According to BLM Manual 1745, a site-specific activity plan is required prior to the introduction, transplant, and reestablishment of plants or animals on public lands. Additionally, decisions for making introductions, transplants, or reestablishments should be made as part of the land use planning process, and include a land use plan amendment (BLM Manual 1745). BLM has not included an activity plan or land use plan amendment in the FSA/DEIS or the Biological Assessment. This documentation will be required before a decision is made on the translocation.

Comment ISEGS-8-9a: The proposed project and the other projects proposed for the project area will require the large-scale movement and translocation of desert tortoises within the North Ivanpah Unit. Translocation of desert tortoises is highly controversial as witnessed with the BLM's withdrawal of its "Environmental Assessment for the

Translocation of Desert Tortoises onto Bureau of Land Management and Other Federal Lands in the Superior-Cronese Desert Wildlife Management Area, San Bernardino County, California Bureau of Land Management Environmental Assessment" (CA-680-2009-0058) immediately following the close of the public comment period. There is no consideration in the CDCA Plan for large scale desert tortoise translocation. Therefore, the BLM must include a detailed translocation plan for the project in its NEPA documentation.

No final translocation plan has been made available for to the public to review. The BLM must make this available for public comment prior to issuing its decision. The project applicants have identified four sites west of the proposed project as possible translocation sites. However, the northernmost of these is within the footprint of the proposed railway line and would not appear to be suitable for that reason alone.

***Response**: As part of the docket 07-AFC-5, BrightSource submitted a draft Desert Tortoise Translocation/Relocation Plan (Relocation Plan) to the California Energy Commission on March 19, 2009, with subsequent revisions on May 27, 2009, and August 13, 2009. The document was reviewed by the California Energy Commission, California Department of Game and Fish, BLM, and USFWS. Comments to the draft Relocation Plans were provided to BrightSource on April 28, 2009 and July 15, 2009. The revised plan was submitted as an appendix to the Biological Assessment from the BLM to the USFWS. Proposed relocation locations can be found within the applicant's submittals on the CEC website: http://www.energy.ca.gov/sitingcases/ivanpah/documents/applicant.*

Mitigation Measure BIO-9, the desert tortoise translocation condition, requires the development of agency-approved final plans prior to construction or operation of the proposed project.

Tortoise - Translocation – Protections for the Translocation Area

Comment ISEGS-2-45: 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 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.

Comment ISEGS-7-15b: Additionally, BLM must ensure that the translocation lands are preserved in perpetuity. BLM must not allow right-of-way applications on areas that effectively become surrogate desert tortoise habitat due to a translocation program.

Comment ISEGS-8-9b: Desert tortoises may make long-distance movements following relocation (FSA/DEIS at 6.2-50). Because of this, it is critical that fencing along I-15 be in place prior to any tortoise translocations being are undertaken because translocated or relocated tortoises may make long distance movements. This must be specified in the translocation plan component of the EIS.

Response: Any changes to the protection status in the translocation lands would require analysis within the context of the NEMO Planning unit as a whole, and would only be considered in light of the availability of new supporting data. In the interim, BLM cannot guarantee protection of the translocation lands..

Tortoise - Translocation – Suitability of Translocation Area for this Purpose

Comment ISEGS-11-8: Plant Surveys were performed in July/August 2009 to determine whether habitat quality of proposed desert tortoise translocation areas were of equal or greater quality than the habitat quality at the project site. This comparison used measures of perennial shrubs and succulent species abundance, richness, and diversity as surrogate indicators of desert tortoise habitat quality. The survey rationale, design, methods, and analysis contain flaws that call into question the validity of conclusions presented in the report, Vegetation Surveys for Potential Relocation and Translocation Areas (in Applicant's Supplemental Data Response, Set 2I, August 10, 2009).

An accurate assessment of desert tortoise habitat quality must take into account the quantity and quality of food sources available. Highest quality food for desert tortoise are native annual plants, whose protein and water content provide the optimum opportunity to rehydrate and flush salts concentrated during hibernation from their bladders, and to accumulate the energy necessary to mate successfully (Pavlik 2008). The surveys were conducted in the middle of summer when few annuals are present.

The report does not provide a rationale for the number of sampling sites chosen, or whether the sites were chosen at random. No statistical test was performed to compare similarities/differences between project and proposed translocation sites, so conclusions cannot be confirmed to any level of significance.

Comment ISEGS-4-6: At the request of the CDFG and the CEC staff, the applicant conducted vegetation sampling at several sites proposed for desert tortoise translocation. Results of those surveys support the Sierra Club Alternative. Specifically, they indicated that approximately half of the sampling locations in the vicinity of I-15 had plant species richness too low to be viable for desert tortoises (CDFG's criteria for the translocation areas was that they have comparable ecological make up as the habitat where the tortoises currently reside). Therefore, lands adjacent to I-15 lacked enough plant diversity to support desert tortoise.

Comment ISEGS-2-41: Neither the Biological Assessment, 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, the habitat may simply not be able to support a more concentrated 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.

Comment ISEGS-5-13d: According to the Recovery Plans, an integral factor in tortoise recovery "is maintaining the genetic and ecological variability known to exist within and among populations. This variation is necessary to allow tortoises to adapt to changes in the environment over time." 2008 Draft Recovery Plan at p. 30. Also, because Desert tortoises occupy large home ranges, the "longterm persistence of extensive, unfragmented habitats is essential for the survival of the species."
Id. For this reason, translocating or relocating Desert tortoise either adjacent to I-15 or adjacent and west of the Project, will not work. Tortoises would essentially be stuck between two inhospitable habitats, curtailing their range. The DEIS acknowledges the potential dangers, but offers no other alternatives to the Project that would not translocate the tortoises into potentially fragmented habitat.

Comment ISEGS-1-36g: The FSA/DEIS provides little information on the translocation site and survey protocol that was used to determine the feasibility of the site. We are concerned that the applicant did not follow protocol during the surveys of the translocation site. We feel that the following questions deserve an answer and that the applicant should be more cooperative about sharing this basic information. The below issues concerning the translocation plan remain unresolved in our view:

1. Please submit copies of all desert tortoise pre-project survey data sheets.
2. Please submit resumes of Southern Nevada Environmental, Inc (SNEI) surveyors.
3. Please indicate the personnel that had a minimum of 60 days prior field experience searching for desert tortoises and tortoise sign.
4. For surveyors without 60 days prior field experience, provide a discussion of how surveyors were trained and any measures that were taken to ensure they obtained accurate survey results.
5. Please provide dates and times of tortoise surveys. If surveys were not conducted during appropriate seasons (April through May and September through October) as determined by U.S. Fish and Wildlife Service (USFWS) April 2009 Pre-Project Field Survey Protocol (http://www.fws.gov/ventura/speciesinfo/protocols_guidelines/docs/dt/DT_Preproject_SurveyProtocol_2009_FieldSea son.pdf), please explain the reasons. Was

approval granted for any survey work conducted outside the spring and fall seasons by USFWS and California Department of Fish and Game (GDFG)?
6. If surveys were conducted outside recommended USFWS protocol seasons, please discuss how survey numbers would be as accurate as those obtained during optimal activity seasons.
7. Please provide temperature data collected during surveys. Were surveys conducted when air temperatures were above 40 degrees Celsius?
8. Please indicate whether any desert tortoises were handled during Project surveys. If tortoises were handled, please provide documentation of the section 10(a)(1)(A) permit(s) issued by the USFWS authorizing handling.
9. In the ISEGS Supplemental Data Response Set 2J, SNEI indicates that rainfall estimates were not obtained on site, but at higher elevations from Mountain Pass in different habitat, and approximately 50 miles away at Las Vegas. Please discuss how tortoise abundance estimates may be skewed by rainfall estimates that are not on site.
10. In the ISEGS Supplemental Data Response Set 2J, SNEI concludes that drought may be the prime cause for a possible decline in tortoises on the site. Please discuss why other potential causes for this decline were not discussed, such as disease, subsidized predation relating to the interstate highway, and livestock use.

Comment ISEGS-7-14b: The Biological Assessment identifies translocation as a mitigation measure. It is important to note that translocation is not mitigation. Translocation is a minimization measure for the take of desert tortoises on the site. However, the project will result in take of all desert tortoises on the site and cannot be mitigated by translocating individual tortoises. Additionally, the proponent's consultants observed at least 25 desert tortoises on the site during surveys. Based on those surveys, at least 50 desert tortoises are likely to be found on the site. Therefore, the proponent's statement that "the proposed action would likely result in the translocation of 25 tortoises" is incorrect (Biological Assessment, page 5-1). At least 50 tortoises will likely need to be translocated. Finally, surveys of the translocation area were completed in July and August of 2009 outside of the protocol survey season (Biological Assessment, page 4-6). Therefore, the proponent does not currently possess adequate knowledge of the desert tortoise population in the translocation area to develop a sufficient translocation plan.

Comment ISEGS-7-15c: As stated above, Defenders does not believe that translocation, in and of itself, provides mitigation for desert tortoises. Instead, any translocation must be in conjunction with the preservation of habitat. Further, the Translocation Plan should follow the recommendations of the USFWS Desert Tortoise Recovery Plan, including: a) No experimental translocations into DWMAs. b) Translocations should be made to appropriate habitat. The EIS should justify its selected translocation site. BLM should also explain the adequacy of the non-protocol surveys that were completed. c) Areas into which desert tortoises are to be relocated should be surrounded by a desert tortoiseproof fence or similar barrier. The fence will contain the desert tortoises while they are establishing home ranges and a social

structure. d) The best translocations into empty habitat involve desert tortoises in all age classes, in the proportions in which they occur in a stable population. The EIS should discuss the population structure in the proposed translocation area. e) The number of desert tortoises introduced should not exceed the pre-decline density. f) All tortoises identified for potential translocation should be medically evaluated in terms of general health and indications of disease, using the latest available technology, before they are moved. g) If desert tortoises are to be moved into an area that already supports a population - even one that is well below carrying capacity - the recipient population should be monitored for at least 2 years prior to the introduction. Necessary data includes the density and age structure of the recipient population, home ranges of resident desert tortoises, and general ecological conditions of the habitat. Any translocation sites should be isolated by a desert tortoise barrier fence or similar barrier next to the highway or road. The purpose of fencing the highway is obvious - to keep translocated animals from being crushed by vehicles on the road. The FSA/DEIS is unclear about the level and extent of fencing.

Comment ISEGS-8-9c: The tortoise densities on these proposed translocation sites are unknown since adequate surveys have not been performed. However, if the tortoise densities are comparable to those on the project site then translocation is likely to double the densities on the translocation sites. If the tortoise densities on the proposed translocation sites are lower than the project area, the ecological conditions underlying this need to be examined and explained.

The surveys on the translocation sites referenced in the DEIS were performed outside the protocol season (PSA/DEIS at 6.2-50). The USFWS protocol survey relies on using standard values for estimating the proportion of desert tortoises above ground and available for detection (Pa). These Pa values are based on average proportions of transmittered tortoises found above ground from earlier range-wide line-distance sampling surveys conducted during the spring survey season. Tortoise activity is highly seasonal. The proportion of tortoises above ground changes with time and may decrease dramatically in July. Because of this, use of the standard Pa values for surveys conducted outside the season will underestimate abundance. A reasonable estimate of the abundance of tortoises in the relocation areas is essential to evaluate potential impacts to resident tortoises from the proposed relocation. The density of tortoises on the project site and the density of resident tortoises in the proposed relocation and translocation areas should be determined using appropriate survey techniques so that the extent of the impacts can be determined.

The habitat surveys conducted in the relocation areas do not include surveys of the annual plants that tortoises depend upon for their survival (USFWS 1994). The nutritional status of wild tortoises may depend more on availability of plant species of high nutritional quality than on overall amounts of annual vegetation (Oftedahl and Allen, 1996). Without data on the quantity and quality of available forage it is unclear if the current carrying capacity of the proposed relocation sites is sufficient to support additional tortoises. The is important since the 1984 status report tortoise density map of the Ivanpah Valley (Berry et al., 1984 Plate 6-13) indicates that historic tortoise

densities in the North Ivanpah Valley were not uniform and may have been lower at the translocation sites compared to the project site.

BLM Handbook 1745 requires that activity plans for translocations must be site-specific and include “Site-specific and measurable vegetation/habitat population objectives which are based on existing ecological site potential/condition, habitat capability, and other important factors.” The DEIS does not adequately describe existing ecological conditions nor does it address the capacity of the habitat at the translocation sites to support additional tortoises. It has been established that livestock compete with desert tortoises for important food plants (Avery and Neibergs, 1997; Avery, 1998). The BLM must analyze impacts from competition for food plants by cattle on the likely success of translocating tortoises to these sites and provide mitigation for any impacts identified.

***Response**: The Biological Assessment includes an evaluation of impacts to desert tortoises, including those associated with the translocation of individuals. It is the responsibility of the USFWS to review the document and determine, based on their expertise, whether the conclusions reached within the Biological Assessment are valid. If the USFWS agrees with the findings of the Biological Assessment, they will issue a Biological Opinion, which may include additional mitigation or conservation measures. Alternatively, if the USFWS determines there are substantive residual impacts, even with the application of additional mitigation measures, they will issue a jeopardy opinion in the Biological Opinion that would prevent the Project from moving forward as proposed.*

Tortoise - Translocation – Consideration of Disease

Comment ISEGS-2-40: 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.

Comment ISEGS-12-5: There has been no study of the host populations nor will the applicant be required to complete a study of the host populations at the relocation/translocation sites to establish population densities and the health of the host desert tortoises. There is no requirement in the relocation/translocation plan that the desert tortoises be fully inspected for disease, raising the possibility that the relocation/translocation of tortoises from the ISEGS site could spread disease into a healthy host population.

Comment ISEGS-1-36h: Health status: What is the health status of this population? Were any symptoms of Upper Respiratory Tract Disease detected? If so, was this just a visual survey? Will desert tortoise be given the ELISA blood test before they are translocated? We would like to request that the applicant be required to conduct blood work on all tortoise to be translocated. Cutaneous dyskeratosis is a shell disease that has unknown implications on desert tortoise populations. In advanced cases, exposed areas become infected with bacteria, fungus, and exposed tissue and bone may become necrotic. Cutaneous dyskeratosis has been identified on the Ivanpah Desert Wildlife Management Area. Hypotheses for the cause of the disease include autoimmune diseases, exposure to toxic chemicals (possibly from mines, or air pollution), or a deficiency disease (possibly resulting from tortoises consuming low-quality invasive plant species instead of high-nutrient native plants).

Comment ISEGS-8-9d: Environmental stressors may contribute to disease outbreaks in desert tortoise populations particularly Upper Respiratory Tract Disease (Sandmeier et al., 2009). The BLM should require that the health status of resident and translocated tortoises be evaluated so that movement of Mycoplasma infected tortoises can be controlled.

Response*: The potential for disease is a major reason for favoring adjacent locations for translocation. Preliminary guidance from the USFWS is that any tortoise that needs to be moved over 500 meters will be tested prior to being relocated and released. Tortoises moved to the Mojave National Preserve headstart facility will be isolated on site and tested prior to moving to the final translocation area. Resident populations in the translocation areas will also be tested prior to receiving additional tortoises. If an infected tortoise is found in the translocation receiving area, no additional tortoises will be relocated within 500 meters of the infected tortoise.*

Tortoise – Translocation – Standard for Success

Comment ISEGS-2-43: 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.

Comment ISEGS-2-42: 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". 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.

***Response**: BLM has revised the text of the Mitigation Measure BIO-9 to provide for additional monitoring and actions in response to the identification of opportunities to improve success.*

Tortoise – Compensation - Ratio

Comment ISEGS-21-1: First, the Ivanpah SEGS would cause irreparable harm to the threatened desert tortoise and other sensitive animal and plant species. The FSA notes that at least 25 desert tortoises will have to be relocated from the 4,000-acre project site. Some of these tortoises will die from this relocation. Also, this project will hamper the recovery of the desert tortoise because it will destroy more than 4,000 acres of relatively pristine, intact habitat. If this disturbance does occur, Bright Source should be required to mitigate the project at a 5:1 ratio instead of the 3:1 ratio proposed by the FSA. This will not compensate for the tortoises and habitat that will be lost, but it will ensure that the value of intact habitats and landscapes is acknowledged.

***Response**: The NEMO Plan amendment established a 1:1 compensation ratio for Category III habitat. The 3:1 ratio is a state requirement, and is outside of BLM's authority to require.*

Tortoise – Compensation – Location and Suitability of Compensation Lands

Comment ISEGS-12-4b: However, acquisition of habitat in the Eastern Mojave Unit will not mitigate impacts to the Northeastern Desert Tortoise Recovery Unit, the specific segment of the Mojave desert tortoise population that will be adversely affected by ISEGS. Acquiring mitigation lands "as close to the ISEGS site as possible ... " is not scientifically justifiable and would not meet the goals of the Desert Tortoise Recovery Plan. The only acceptable compensatory mitigation for the cumulatively significant loss of the Ivanpah Valley's biological resources would be the acquisition of lands that can be improved, protected and maintained to support a healthy Northeastern desert tortoise population…. The loss of habitat and the loss of one population cannot be mitigated through actions with respect to another Recovery Unit. In the absence of sufficient habitat within the Northeastern Desert Tortoise Recovery Unit within California

to achieve compensatory mitigation - the situation with respect to ISEGS - the only option for the BLM is to select the No Project/No Action Alternative.

Comment ISEGS-27-1a: This 4,073 acre project proposes 12,000 acres to be set aside, at a 3:1 ratio, as mitigation for impacts to the desert tortoise. The set-aside of this 12,000 acres should be specifically identified as to location, and at that scale, requires its own CEQA and NEPA analysis.

Comment ISEGS-30-12: 3:1 Mitigation ratio at a proposed $500.00 per acre does not address the realities of land availability or purchase price of parcels within the Ivanpah Valley and adjacent region. If small parcels are acquired, they will not provide the connectivity or opportunity for recovery for Desert Tortoises. Additionally, the smaller the parcel, the higher the price. An updated figure should be required for mitigation, and impacts to wildlife corridors or migration routes should be mitigated for, or addressed and listed as unable to be mitigated.

Comment ISEGS-8-18d: Desert washes, drainage systems, and washlets are very important habitats for plants and animals in arid lands. Water concentrates in such places, creating greater cover and diversity of shrubs, bunch grasses, and annual grasses and forbs. The topography is often more varied, as are soil types and rock types and sizes, creating diverse sites for burrows, caves, and other shelters. The resulting “habitats” tend to attract more birds, mammals, reptiles, and invertebrates. Desert tortoises, for example, spend disproportionately much more time in wash habitat than they do in “flat” areas (Jennings 1997). Acquired compensation habitat must therefore include comparable acreages of wash habitat. If “nesting” of mitigation is allowed, the provisions must ensure that the loss of rare plant populations and individual plants will be adequately compensated.

Response: *BLM has determined that federal 1:1 tortoise compensation funds will be spent on enhancement projects. The identification of specific, available parcels for acquisition with willing sellers has not been completed, and it is therefore impossible to specifically identify the lands to be acquired at this time. However, the lands proposed for acquisition require the approval of BLM, USFWS, CDFG and the Energy Commission.*

12.3 Biological Resources - Vegetation

Vegetation – Reported Baseline Information

Comment ISEGS-2-15: Several rare plants were found on the proposed project site including the Rusby's mallow which is a BLM sensitive species. 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 Maunal6840.2.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 . . . [ensuring 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] [considering 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 persistence especially in light of global climate change.

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).

Comment ISEGS-2-16a: 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/Sln (DEIS at pg. 566). The GllSl (Global1 State) status rank means that the plant community is considered globallylstate 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.

Comment ISEGS-1-44a: Rusby's desert-mallow is considered by the California Native Plant Society to be especially of concern, and is on its List 1B - Rare, threatened, or endangered in California and elsewhere. Rusby’s Desert-Mallow is a California endemic perennial herb; it is documented globally from less than 30 occurrences in Inyo and San Bernardino Counties in the Death Valley Region and eastern Mojave Desert in the Clark Mountain Range. It has a California Natural Diversity Database state rank of S2 (imperiled). It occurs in the Clark Mountain Range at Ivanpah Springs, on desert slopes and gravelly sandy washes and often in carbonate and limestone substrate, extending into the project area. This plant is also a BLM-sensitive plant species detected on site. This plant would be significantly impacted by the project, its range fragmented and individual plants and seeds in the soil potentially destroyed. Impacts are unmitigable, and therefore the project should avoid this area completely.

Mojave Milkweed is limited to a very small area in eastern San Bernardino County. Currently, it is known from less than 25 occurrences, 16 of which occur in Ivanpah Valley in the project area. Its distribution outside of Ivanpah Valley is limited to a few very old historic collections and only two other populations that have been confirmed extant. This plant also occurs in Arizona, New Mexico, and Nevada but it has a California state rank of S1 (critically imperiled and vulnerable to extirpation from the state due to extreme rarity). Similarly, impacts to this species are unmitigable and the project should avoid this area.

Other rare plants are somewhat more widespread, but taking into account the cumulative impacts of the dozens of other large utility-scale solar applications pending in the desert, this is little comfort: Small Flowered Androstephium (Androstephium breviflorum), Utah Vine Milkweed (Cynanchum utahense), and Desert portulaca (Portulaca halimoides).

Surveys were not carried out in for summer-rain germinating species, and thus several plant types may have been missed or under-represented. Fall surveys should be undertaken, for this summer-rain influenced part of the Mojave Desert.

Comment ISEGS-11-5: Approximately 40% of the plant taxa in Ivanpah Valley flower in late summer/early fall. Of these, 20-25 potential special status plants flower in the summer/fall. All of these plants require ideal conditions for growth. Surveys, no matter how thorough, when performed during seasons and in years in which specific growth conditions are absent may fail to record the presence and/or full range extent of rare plants in desert habitats.

The floristic surveys conducted by the applicant during Spring 2008 were performed well, and by well qualified field personnel. However, floristic surveys for desert rare plants must be performed by qualified botanists over a number of years during both spring and summer/fall flowering seasons in order to maximize the probability of identifying all special status species with the potential to occur on the project site. 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.

Furthermore, the Eastern Mojave Desert is a botanical frontier where in the past few years alone, there have been a number of very significant botanical finds and where more are to be expected. Examples for Ivanpah Valley include, Amaranthus crassipes (near Nipton, new to California (CA)), Oenothera cavernae (Primm to Clark Mountain, new to CA), Muilla coronata (a 70-mile eastern range extension, new to Eastern San Bernardino County), Leptochloa uninervia (from near Nipton, new to the Mojave Desert). The M. coronata was found just west of the proposed ISEGS project area at the base of Clark Mountain in early spring. By the time surveys of the proposed ISEGS site were conducted in late April and May,
M. coronata plants had dried and were not observable during the spring surveys. This later example illustrates how surveys conducted when growth conditions are adequate (as they were in spring of 2008), may be too narrow in their window of timing to detect important rare plant occurrences.

The FSA report's Special-Status Plant Impact Avoidance and Minimization Measure (BIO 18) requires the applicant to conduct pre-construction surveys for both spring and summer/fall blooming taxa but only within the specified project areas. Vegetative structures of some of the spring flowering rare plants occur in localities other than those mapped the previous year. Since the purpose of preconstruction surveys is to quantify each taxon’s occurrence on site, pre-construction surveys should be conducted on all project lands that are undeveloped at the time surveys are performed in order to obtain a full accounting of plant occurrences (e.g., Asclepias nyctaginifolia spreads underground and sends vegetative clones above ground in different locations year after year; Enneapogon desvauxii is an annual grass and so its distribution is ephemeral year to year). Since summer/fall surveys have yet to be performed at the project site, there is

no baseline information on the presence and extent of these taxa. Therefore, summer/fall surveys need to be conducted throughout the entire site before any construction begins in order to obtain a full account of special status species on site.

Comment ISEGS-1-47: The applicant decided that no rare plant communities are present at the site. A cursory look around, however, and comparison with source material, makes us question this finding.

In A Manual of California Vegetation, second edition, by John O. Sawyer, the authors say that for the Larrea tridentata-Ambrosia dumosa Shrubland Alliance (Creosote bushwhite burr sage scrub): "The presence of several non-native plants, particularly Brassica tournefortii, Bromus spp., and Schismus spp., has greatly increased fire frequencies and led to the degradation and destruction of many hectares of this alliance. Long-term, intensive grazing, OHV activity, mining, and military operations have also left their mark.... We need to identify, monitor, and manage areas free of these degrading influences" (page 568).

The Ivanpah Valley fan site is just such a large intact area of creosote-bursage scrub that is relatively free of weeds, has only light (and easily reversible) grazing, almost no off-roading except on three designated tracks, and no other development disturbance. We recommend it be preserved and protected. In addition, the authors state that such associations with Pleuraphis rigida (Big galleta grass), and "those with a diverse shrub layer are G1 S1" (page 566). The G1 S1 (Global 1 State 1) status rank means the plant community is rare and has "fewer than 6 viable occurrences worldwide/statewide, and/or up to 518 hectares" (page 45). The Ivanpah site plant community has galleta grass and a diverse shrub layer and is worthy of more studies to determine its status. A quick check of the California Natural Diversity Database (http://www.dfg.ca.gov/biogeodata/vegcamp/pdfs/natcomlist.pdf) shows other rare communities that could be present on the Ivanpah site: …

Comment ISEGS-7-19a: The FSA/DEIS details impacts to some plant species, particularly the barrel cactus, Mojave yucca, desert pincushion, nine-awned pappus grass, Parish's club-cholla, Rusby's desert mallow and Mojave milkweed. However, the original plant surveys were admittedly conducted during a dry year. Surveys, no matter how thorough, when performed during seasons and in years in which specific growth conditions are absent, may fail to record the presence and/or full range extent of rare plants in desert habitats. Indeed, given the diversity of native plants found on the project site during a dry year survey, we believe that this site contains a large number and extent of rare plants.

Response: *BLM acknowledges the importance of ensuring the long-term survival of sensitive plants and the need to prevent future listings of those species under the Endangered Species Act. BLM and the Energy Commission staff analyzed the direct, indirect, and cumulative effects to special-status plants in great detail in the FSA/DEIS, and the Energy Commission staff concluded that the direct, indirect, and cumulative effects to special-status plants of the State was significant in a CEQA context. This*

concern led the Energy Commission staff to require that the Applicant avoid areas of the highest rare plant density and diversity, and in a way that ensured long-term sustainability and connectivity with adjacent undisturbed populations and the Clark Mountains. Energy Commission staff rejected the Applicant's first mitigation proposal; this ultimately led to the development of the Mitigated Ivanpah 3 proposal, which is similar to the Reduced Acreage Alternative analyzed in the FSA/DEIS. Many other alternatives, both within and outside of Ivanpah Valley, were considered in the FSA/DEIS, including a Private Land Alternative. The Private Land Alternative would have significantly reduced impacts to biological resources, but was eliminated because it could not substantially reduce impacts without creating significant impacts of its own (particularly to archaeological resources).

*The Mitigated Ivanpah 3 avoidance plan, combined with the avoidance, minimization, and compensatory mitigation measures in the revised **BIO-18**, would substantially minimize the Project's direct, indirect, and cumulative impacts to special-status plants. BLM agrees that transplantation has unproven efficacy and rejected earlier proposals involving artificial methods of ex-situ conservation as mitigation; collection of seed and other propagules is included in **BIO-18** only as a remedial action of last resort in the event that the preserved areas fail to meet the minimum success standards.*

The rare plant surveys at the ISEGS site were conducted according to required protocols, were extensive, covered multiple years, and were planned and conducted by an experienced professional botanist in consultation with local experts..

Vegetation - Mitigation

Comment ISEGS-1-44b: We agree with the California Native Plant Society that there are no known techniques to mitigate for the loss of rare plants and their habitat in desert environments. Avoidance is the only mitigation that is appropriate for this site. There is no known method to compensate for the loss of this rare plant habitat. Simple habitat acquisition for the desert tortoise cannot provide adequate compensation for the loss of this high quality rare plant habitat. To be able to find comparable compensation habitat for the rare plants will require an enormous amount of fieldwork to survey private lands that might be occupied. Simple translocation of the adult plants does not perpetuate population structures for long-term productivity and is an unproven mitigation for habitat destruction. The scale of destruction of subsurface ecosystem components and seed banks is impossible to mitigate.

Currently, there are no known mitigation actions that are successful for desert plants and habitats. The only legitimate option is, no approval at this location. If approved for this location, a land compensation ratio should be at least 5:1, especially in light of the massive push for energy development in the desert and the projected cumulative effect generated from similar projects.

Transplantation was brought up, but studies have found that, even under optimum conditions, transplantation was not effective in 85 percent of cases. The California Native Plant Society has an official policy opposing transplantation. Even if avoidance for any rare plants could be achieved, this plan still allows the habitat of these species to be carved up and fragmented, creating islands of habitat isolated from other populations and potentially even pollinators due to the heat created by the project's sun-reflecting and concentrating design. This does not provide adequate minimization to the severe impacts to these populations.

Cacti: We strongly suggest no cacti be sold from the site if the project is approved.

***Response**: The agency agrees that avoidance is the best strategy for mitigation of rare plants and communities. BLM has worked with CEC, the applicant, and the intervenors to maximize avoidance to the extent practicable, and to maximize the effectiveness of transplanting for areas where avoidance is not practicable. However, compensation for rare plants is not within BLM's regulatory authority to require.*

*The Energy Commission staff has proposed Condition of Certification **BIO-18** that includes requirements for special-status plant avoidance and minimization measures, protection goals and monitoring requirements. **BIO-18** led to the applicant's Mitigated Ivanpah 3 proposal that Energy Commission staff believes together can lessen plant impacts to less than significant. BLM and Energy Commission staff worked with intervenors, Applicant, and consulted recognized experts in desert ecology in the development of the Mitigated Ivanpah 3 avoidance plan, which avoids the areas of highest density and diversity in the northern portion of ISEGS 3 and in the Construction Logistics Area, and along the pipeline route. BLM agrees that transplantation should not be relied upon to mitigate impacts, and does not—mitigation is achieved through avoidance and minimization. Seeding and topsoil salvage are included in **BIO-18** only as a last resort remedial action and to minimize impacts in areas where impacts are temporary and restoration is possible (e.g., the pipeline alignment). The Applicant is also required to minimize the width of the work area along the pipeline.*

Vegetation – Invasive Species

Comment ISEGS-2-16b: Additionally, the DEIS recognizes that the proposed project site supports very few nonnative 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). While the proposed Weed Management plan 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.

Comment ISEGS-8-14: The FSA/DEIS fails to fully analyze the project's direct, indirect, and cumulative effects on the spread of invasive weeds and the potential increase in wildfire risks. Water run-off from the washing the mirrors will promote invasive plant growth year-round and increased use of the area will help disperse invasive plant seeds throughout the area. The DEIS does not explain how invasive species will be controlled on the project site.

Comment ISEGS-1-25: Weedy successional growth will most likely grow as mirror wash-water falls to the ground during bi-weekly washing. In cooler seasons this would probably result in the increased growth and spread of invasive Red brome grass (Bromus madritensis ssp. rubens), an annual from Europe that favors disturbed ground, as well as various introduced mustards (Brassica spp.). In the summer it would likely be Arabian splitgrass (Schismus spp.). To take care of this secondary problem, the applicant will carry out a weed management policy and apply "soil binders and weighting agents to minimize dust accumulation on the mirrors and fugitive dust as could occur by wind or vehicle traffic" (page 1-9). What are these soil binders, and are they petroleum products?

What herbicides would be used to remove vegetation from under the heliostats? How will these toxins be prevented from getting into the ground and groundwater? What effects, short-term and long-term would the use of these chemicals have on public health? Will local landowners be at risk? How will these herbicides affect sensitive wildlife and plants? Miles of small roads will be constructed. That has the potential to create a serious weed problem in the area. Invasive plants pose a serious threat to both ecosystem functioning and desert tortoise population viability.

Comment ISEGS-6-19c: • EPA recommends the SDEIS consider alternatives to the proposed vegetation maintenance regime. The current proposal includes mowing to 12-18 inches to provide clearance for heliostat function. This would likely suppress vegetation through carbohydrate starvation, reducing its water use, and discouraging reproduction by seed. Mowing is likely to promote proliferation of non-native invasive weeds.

Response*: BLM agrees that the site currently has a minor weed component and that the project has the potential to increase the introduction and spread of weeds. The agency carefully considered the threat of weeds to special-status plants and natural communities, and the wildfire risks associated with weeds. The analysis was included in the discussion of impacts to special-status plants and impacts to plant communities. The agency concluded that this was a significant indirect and cumulative effect, which led to the development of the draft Weed Management Plan (submitted August 2008), a thorough, detailed 80-page plan that includes: description of the weed management areas; monitoring and reporting methods; weed species descriptions and management strategies; standard operating procedures for herbicide treatment on BLM lands, a list of approved herbicides for use on public lands in California, and sample Pesticides Use Proposal forms and Application Records forms.*

*In response to comments, the agency has carefully reviewed the draft Weed Management Plan. In addition, the text of mitigation measure **BIO-13** has been revised to ensure that the weed management activities that occur are in conformance with BLM's Programmatic Environmental Impact Statement for Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States.*

Vegetation – Cumulative Impacts

Comment ISEGS-11-1c: The proposed ISEGS project and other proposed projects in the Ivanpah Valley, will cumulatively impact the viability of vegetation communities and rare plant populations.

Comment ISEGS-8-16c: 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.

Comment ISEGS-2-34c: 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.

***Response:** BLM has worked with CEC, the applicant, and the intervenors to maximize avoidance of sensitive plant species to the extent practicable, and to maximize the effectiveness of transplanting for areas where avoidance is not practicable. These measures are intended to address the proposed project's contribution to cumulative impacts, as well as its direct impacts.*

Vegetation – Impacts from Development

Comment ISEGS-11-3: Significant populations of rare plants, including Sphaeralcea rusbyi var. eremicola (Rusby's desert mallow), a CNPS List 1B and BLM special-status plant, occur on the proposed project site, as described in the FSA/DEIS report.

The project will deploy heliostats, power towers, associated building structures, pipelines, and roads across approximately 4,000 acres of ecologically intact desert habitat, where naturally functioning ecological processes predominate over recent man-made intrusions. The completed project footprint will fragment 4,000 acres of diverse and intact desert plant communities. This includes rendering large rare plant populations, into fragments of various sizes. The biological affects of ecosystem fragmentation are well documented (Saunders et al., 1991). In general, the fragmentation of rare plant habitat on the project site will lead to two fundamental changes across the landscape; 1) an increasing isolation of remnant populations, and 2) a decrease in the total amount of available habitat for remnant populations. These two phenomena will be repeated throughout Ivanpah Valley, and where rare plants occur within the footprints of proposed neighboring energy projects, and the hundreds of thousands of acres of the Greater Mojave Desert ecosystem in California, Arizona, and Nevada where hundreds of utility-scale wind and solar project applications are being proposed.

To manage for viable rare plant populations on the project site, it will be necessary to identify Project related threats to those populations. Threats include, but are not limited to, altered light regimes due to shading by heliostats, altered hydrological conditions due to intercepted and redirected rainfall patterns and mirror washing, soil compaction during construction and operational phases of the project, altered soil nutrient conditions due to modified nutrient uptake by regularly mowed vegetation, and the introduction and spread of invasive weeds. With so many threats it is difficult to understand how they ultimately affect the viability of specific plant populations or metapopulations, how the threats themselves may interact, and how to come up with effective methods to alleviate them.

Comment ISEGS-7-19b: Impacts to rare plants on the project site would be extensive. To manage for viable rare plant populations on the project site, BLM must identify project-related threats to those populations. Threats include, but are not limited to, altered light regimes due to shading by heliostats, altered hydrological conditions due to intercepted and redirected rainfall patterns and mirror washing, soil compaction during construction and operational phases of the project, altered soil nutrient conditions due to modified nutrient uptake by regularly mowed vegetation, and the introduction and spread of invasive weeds.

Comment ISEGS-7-19c: Finally, we are very concerned about the extent of the impact of the proposed project on the Creosote Bush-White Bursage Barrel Cactus Community Type. With 10,000 acres of this plant community existing in 20 to 30 locations, the project appears to impact more than 1/3 of the community type (Application for Certification, page 5.2-46). Such an impact appears to be very significant and must be fully analyzed and addressed in the EIS.

Comment ISEGS-33-12a: There is some implication in the FSA that plants under heliostats will be trimmed, not removed (by grading or other means). If this is planned,

then the discussion should analyze the expected plant reaction to both trimming and continuous shading, including effects on photosynthesis, pollination and flowering, symbiotic insects, root growth, resistance to disease, shelter for other plant species that grow in the umbrella of creosotes, for instance, and perhaps other plant characteristics that a qualified biologist would consider to be of concern.

Comment ISEGS-11-7: The FSA/DEIS report directs the applicant to implement several measures under "BIO 18" that are generally in agreement with CNPS policies and guidelines on rare plant mitigation requirements (CNPS 1989, CNPS 1998a, CNPS 1998b). Additionally, BIO 18 measures would provide important information on the population dynamics and population viability of the project's six reported special status plant taxa, including Sphaeralcea rusbyi var. eremicola (Rusby's desert mallow), a CNPS List 1B and BLM specialstatus plant. This data could assist in the future management of these taxa both on the proposed ISEGS project and on other projects where they might occur.

The applicant proposes to intentionally manage the "quasi-natural" vegetation under heliostat fields as rare plant refugia by fencing individual plants or groups of plants under mirrors. Efforts to manage heliostat fields as areas for rare plant protection would be experimental in nature, meaning there is no current data that assures, or provides sufficient confidence, for success. Therefore, any management plan to this effect would need to be designed in such a way as to produce results that would better inform future decisions - whether the results are positive or negative; and it would need to have benchmarks for success and for remedial action to buffer against losses that could lead to extirpation or extinction of a species. In terms of rare plant conservation under solar mirrors, there is no foundation of success to point to, but many instances of species failing in response to ecosystem fragmentation, especially when management decisions focus on preserving a population's spatial distribution patterns at the expense of hindering a population's biological processes (Thrall et al., 2000). If the proposed project is built, the opportunity for rare plant conservation, ironically, will be in the knowledge we gain by documenting the loss of populations. For mitigation to occur, at a minimum the applicant must be required to conduct offsite surveys to identify lands with additional occurrences of the special status plants that are to be destroyed by the project, then place the lands where identified plants occur under conservation easement before being allowed to commence construction.

Comment ISEGS-7-19d: The sheer number and extent of the threats make them difficult to mitigate. However, the rare plant mitigation measure proposed in the FSA/DEIS – BIO-18 – is woefully inadequate. Although the proposed avoidance and minimization measures included inBIO-18 may reduce impacts to three impacted species (desert pincushion, nine-awned pappus grass, and Parish’s clubcholla) to less-than-significant levels, impacts to Mojave milkweed and Rusby’s desert-mallow would remain significant (FSA/DEIS, page 1-18). Impacts to these species therefore cannot be fully mitigated. In what appears to be a last ditch effort to mitigate for these species, BIO-18 requires the project owner to conduct floristic surveys for Rusby’s desert-mallow and Mojave milkweed on all lands that will be acquired as part of the desert tortoise

compensatory mitigation requirements. (FSA/DEIS, page 6.2-128). However, compensatory mitigation for these species is not ultimately required, either on lands acquired for desert tortoise or elsewhere. As such, this survey requirement appears to be toothless. Adequate mitigation that addresses the impacts to rare plant populations would require, at a minimum, that the applicant conduct offsite surveys in multiple areas to identify lands with additional occurrences of the affected special status plants and protect those lands through acquisition or conservation easement.

***Response**: The EIS acknowledges that several construction and operational activities, including those mentioned in these comments, would impact plants. In the response to the identification of these impacts, BLM has worked with the CEC, the applicant, and the intervenors to identify measures to maximize avoidance, and to facilitate successful transplants where avoidance is not practicable.*

12.4 Biological Resources – Other Species

Birds

Comment ISEGS-1-7: Water-holding ponds or maintenance outwash basins for the power blocks are not well-described in the FSA/DEIS: "Two concrete-lined holding basins of about 40 feet by 60 feet are included in the power block area. They can serve for boiler commissioning and emergency outfalls from any of the processes" (From: CH2M Hill. 2008. Supplemental Data Response Set 2D. Revised Draft Biological Assessment, pdf at www.energy.ca.gov >>here). Are these still a part of the project design? Any standing open water may attract birds and other wildlife to the dangerous heated solar radiation between the heliostats and receivers. We recommend that any temporary water-holding ponds be covered with nets to exclude birds.

Comment ISEGS-7-20: The proposed project will reroute and fill in a number of existing ephemeral washes that flow into the Ivanpah Dry Lake. The EIS must analyze and address impacts to the Dry Lake and fairy shrimp. Additionally, the EIS must analyze and address impacts to migratory birds from this project. Loss of nesting and foraging habitat for special-status bird species (golden eagle, burrowing owl, loggerhead shrike, Crissal thrasher and Brewer's sparrow) would adversely affect populations of these species within the Ivanpah Valley. According to the FSA/DEIS proposed Condition of Certification BIO-17, the compensatory mitigation plan could offset the loss of habitat for these species and reduce the impact to less-than-significant levels. CDFG noted that this section should be updated to either show that the compensatory mitigation does offset the loss, or other measures may need to be developed that will reduce impacts to less-than-significant levels. Defenders agrees with CDFG's recommendation.

Comment ISEGS-7-19: The project fails to address impacts to the burrowing owl. In addition to its status as a State Species of Special Concern, the burrowing owl is also protected under Fish and Game Code Section 3503.5 and the Migratory Bird Treaty Act.

16 U.S.C. § 703. Impacts to burrowing owls must be addressed in the EIS. The species was detected on the ISEGS site during the 2008 surveys and suitable habitat was identified (FSA/DEIS, page 6.2-22). However, the FSA/DEIS did not identify compensatory mitigation measures for the burrowing owl. Off-site habitat acquisition and enhancement pursuant to BIO-17 is identified as a mitigation measure for the owl in Biological Resources Table 7 of the FSA/EIS. However, that habitat acquisition measure is not explained. BLM must adhere to the following measures in the EIS, as found in CDFG's Burrowing Owl Survey Protocol and Mitigation Guidelines:

a) Occupied burrows should not be disturbed during the nesting season (February 1 through August 31) unless a qualified biologist approved by the Department of Fish and Game determines that the adult birds have not begun egg-laying and the juveniles from the occupied burrows are foraging independently and capable of independent survival.

b) As compensation for the direct loss of burrowing owl nesting and foraging habitat, the project proponent should mitigate by permanently protecting known burrowing owl nesting and foraging habitat.

c) A Burrowing Owl Mitigation and Monitoring Plan should be submitted to the Department of Fish and Game for review and approval prior to relocation of owls describing the proposed relocation and monitoring plans. The plan shall include the number and location of occupied burrow sites and details on adjacent or nearby suitable habitat available to owls for relocation. If no suitable habitat is available nearby for relocation, details regarding the creation of artificial burrows (numbers, location, and type of burrows) will also need to be included in the plan.

Comment ISESG-1-38: All burrowing owls should be passively removed and not actively removed or excavated from their burrow. (Passive meaning wait for the owl to come out). Avoidance of owls and restructuring of the project site may be necessary. California Department of Fish and Game protocols (Burrowing Owl Survey Protocol and Mitigation Guidelines. 1993. Prepared by the California Burrowing Owl Consortium. www.dfg.ca.gov/wildlife/nongame/docs/boconsortium.pdf, accessed November 10, 2009) will need to be implemented. The guidelines recommend that for offsite mitigation, replacement of occupied habitat with 9.75 acres of occupied habitat per pair or single owl found, or 13 acres of contiguous habitat per pair or single bird, or 19.5 acres of unoccupied habitat per pair or single bird.

Comment ISEGS-1-39: The FSA/DEIS fails to mention several additional state and federal sensitive species that potentially occur on the site: CDFG Species of Special Concern: ….

The FSA/DEIS states that loss of nesting and foraging habitat for the special status bird species would adversely affect populations of these species within the Ivanpah Valley. The "compensatory mitigation plan could offset the loss of habitat for these species and reduce the impact to less-than-significant" (page 6.2-45). The needs of the dozens of

sensitive birds present may not be consistent with the needs of tortoise. A separate mitigation plan should be developed for sensitive bird species.

Another serious problem with this type of solar development, not present in parabolic trough plants, is the superheated beams reflected through the air over the heliostat fields onto the central receiver towers. Migrating or foraging birds have been burned to death flying through these beams.

The paper AVIAN MORTALITY AT A SOLAR ENERGY POWER PLANT, by Michael D. McCrary, Robert L. McKernan, Raplh W. Schreiber, William D. Wagner, and Terry C. Sciarrotta, Journal of Field Ornithology, 57(2): 135-141 (pdf >>here), found that Solar 1 during 40 weeks of study, caused 70 bird fatalities involving 26 species, most from collisions with both heliostats and tower, but thirteen (19%) birds (of 7 species) died from burning in the standby point. Heavily singed flight and contour feathers indicated that the birds burned to death. Six (46%) of these fatalities involved aerial foragers (swifts and swallows) which are apparently more susceptible to this form of mortality because of their feeding behavior. Will any water in ponds attract birds? Even if no ponds are present, birds in the area may fly through the project and be killed.

We have seen Gray vireos in Ivanpah Valley migrate low through creosote bush stands. These species could be significantly impacted by the solar field. Other rare nesting species on Clark Mountain could similarly be affected. How will the applicant mitigate impacts to raremigratory breeding birds on Clark Mountain?

Raptors potentially resident or migratory on the site that could beadversely impacted by towers…

A discussion of how negative affects of collisions and burning by towers during operation will be minimized and mitigated for raptors, migratory species, other birds, and bats flying during the day needs to be included in the FSA/DEIS.

Comment ISEGS-2-18: 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. Regardless of distance, a straight line view of disturbance affects raptors, and an effective approach to mitigate impacts of disturbance for golden eagles involves calculation of viewsheds

using a three dimensional GIS tool and development of buffers based on the modeling. 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.

Comment ISEGS-2-17: 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. In fact, two very rare 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 - 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. 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 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 minors 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 -71 1, 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. 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 DEIS, nor are impacts analyzed or minimization measures identified. 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).

Comment ISEGS-2-34d: 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

***Response**: In response to these comments, BLM conducted additional analysis of impacts to bird and owl species in the SDEIS. This analysis is included in the FEIS.*

Bighorn Sheep

Comment ISEGS-2-14: 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.

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 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 lark 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. 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 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."

Comment ISEGS-7-17: Defenders also urges BLM to assess impacts to Nelson's bighorn sheep, a BLM sensitive species, in the EIS. While the California Natural Diversity Database ("CNDDB") reports the last occurrence of bighorn sheep in this area to be in 1986, there is some evidence showing that bighorn sheep use the project area either as foraging habitat or for wildlife corridors. Therefore, we strongly urge that this project analyze and address impacts to bighorn sheep and their ability to move across the Ivanpah Valley. Construction and operation of the Ivanpah SEGS project could reduce foraging opportunities for bighorn on the bajada and narrow the width of movement corridors between Clark Mountain and the Stateline Hills for this species (FSA/DEIS, page 6.2-47). Furthermore, given the proposed use of groundwater, we strongly recommend that the impacts of this pumping be analyzed and addressed with respect to potential impacts on the desert seeps and springs used by bighorn sheep. Studies have not been completed to determine whether seeps used by bighorn in the Clark Mountains will be affected by groundwater pumping in Ivanpah Valley through hydrological connections. Lastly, the mitigation proposed in the FSA/DEIS is limited to construction of an artificial water source (page 6.2-47). This measure will not mitigate impacts to bighorn sheep foraging habitat and wildlife corridors and may have the negative effect of attracting ravens. Acceptable mitigation requirements are those that avoid, minimize, rectify, reduce or compensate for an impact. 40 C.F.R. § 1508.20. The artificial water source accomplishes none of these benefits in connection with the

potential habitat loss. The EIS should clarify the manner in which water sources will effectively mitigate for habitat loss and justify the absence of habitat acquisition requirements for bighorn sheep.

Comment ISEGS-8-11: The FSA/DEIS fails to fully analyze impacts to bighorn sheep, provide alternatives to avoid impacts, or provide measures to minimize these impacts. The suggested mitigation measure of adding an artificial water source in the Clark Mountain area will not mitigate for the loss of bajada foraging habitat. The FSA/DEIS also fails to identify and analyze the impacts associated with the construction and maintenance of this artificial water source such as facilitating raven presence in the North Ivanpah Valley. The BLM should consider removal of cattle from the Clark Mountain Allotment and locating the project elsewhere as mitigation and avoidance measures.

Comment ISEGS-1-42: There is a potential that bighorn sheep will use this site for winter foraging. How would development of the alluvial fan impact potential desert bighorn winter forage habitat? Bighorn will often cross alluvial fans and desert floors. How would construction of such a large facility impact connectivity of bighorn sheep populations and migration corridors? The FSA/DEIS fails to fully analyze impacts to bighorn, provide alternatives to avoid impacts, or provide measures to minimize impacts. For example, we do not believe building an artificial guzzler would mitigate for the potential loss of springs on the mountain slopes and bajadas due to groundwater pumping. How this mitigation will make up for the removal of bajada habitat used for feeding by bighorn sheep, as well as movement corridors between ranges. How will a guzzler offset loss of forage and habitat? A pre-construction baseline of bighorn sheep use should be established, followed by intensive monitoring during construction and follow-up post construction. We are not convinced that project water pumping will not have an adverse effect on the surrounding springs and seeps that are so precious to the resident wildlife population. Please analyze potential affects to Bighorn sheep springs.

Comment ISEGS-30-14: The proposed mitigation for the loss of desert bighorn sheep foraging habitat does not provide additional habitat for browsing. Providing water resources for desert bighorn does not mitigate the loss of food resources, particularly since the amount of available forage is the limiting factor for population size. NPCA agrees with multiple organizations that have stated that further study of desert bighorn migration corridors, lambing habitat, and seasonal requirements is necessary to determine the immediate and cumulative impacts to this population. The purchase and retirement of adjacent grazing allotments should be considered as mitigation if these leases are available for purchase.

Comment ISEGS-9-10: Page 6.2-25 asserts that "sheep inhabiting desert ecosystems can survive without consuming surface water." We note that proposed construction maps provided do not include existing springs, wells and seeps currently utilized by desert sheep species. A more appropriate level of mitigation would be to fund research addressing the critical resource needs to maintain the sheep population.

Comment ISEGS-2-34e: 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.

***Response**: In response to these comments, BLM conducted additional analysis of impacts to bighorn sheep in the SDEIS. This analysis is included in the FEIS.*

Biological Soil Crusts

Comments ISEGS-1-45: Biological soil crusts are formed by living organisms and their by-products, creating a surface crust of soil particles bound together by organic materials. Crusts are predominantly composed of cyanobacteria , green and brown algae, mosses, and lichens. Liverworts, fungi, and bacteria can also be important components. Crusts contribute to a number of functions in the environment.

Because they are concentrated in the top 1 to 4 mm of soil, they primarily affect processes that occur at the land surface or soil-air interface. These include soil stability and erosion, atmospheric
nitrogen fixation, nutrient contributions to plants, soil-plant water relations, infiltration, seedling germination, C02 offsets and plant growth. Crust-forming cyanobacteria have filamentous growth forms that bind soil particles. These filaments exude sticky polysaccharide sheaths around their cells that aid in soil aggregation by cementing particles together. Fungi, both free living and as a part of lichens, contribute to soil stability by binding soil particles with hyphae. Lichens and mosses assist in soil stability by binding particles with rhizines/rhizoids, increasing resistance to wind and water action. The increased surface topography of some crusts, along with increased aggregate stability, further improves resistance to wind and water erosion. Crusts can alter water infiltration. Studies where crusts greatly increase surface roughness generally have increased infiltration with the presence of crusts. Where crusts do not significantly increase surface roughness, infiltration is generally reduced due to the presence of cyanobacterial filaments. Differences in findings are therefore site specific and also related to soil texture and chemical properties of the soil.

Comment ISEGS-1-5a: Daily driving by trucks will further compact the soils on this delicate desert habitat, and destroy fragile cryptobiotic crusts.

***Response**: The FEIS acknowledges that the cryptobiotic crusts would be damaged by project activities. FEIS text in Section 4.3 discusses the impacts of the construction of maintenance of the project site on cryptobiotic soil crusts and discusses mitigation measures to decrease the consequences of increased dust and other construction impacts.*

Deer

Comment ISEGS-1-43: Deer also occupy Clark Mountain, and we have seen deer traveling through lower-elevation fans and basin edges in creosote-Mojave yucca habitat elsewhere in the Mojave Desert. Please analyze impacts to Mule deer foraging habitat, watering areas, and movement corridors by the project.

***Response**: In response to these comments, BLM conducted additional analysis of impacts to deer in the SDEIS. This analysis is included in the FEIS.*

Gila Monsters

Comment ISEGS-1-37: The FSA/DEIS states that the "compensatory mitigation plan, could offset the loss of habitat for this species and reduce the impact to less-than-significant" (page 6.2-47). The needs of the Gila monster may not be consistent with the needs of the tortoise. A separate mitigation plan should be developed for Gila monster, with separate mitigation land acquired if needed. The California Department of Fish and Game agreed that compensatory mitigation for Desert tortoise used to offset impacts to Gila monsters is inadequate. The Gila monster is a fossorial species that is very difficult to locate. The FSA/DEIS does not explain what kind of surveys were used to look for the species.

The BLM and CEC need to have qualified individuals do more complete surveys of the area for the species before any conclusions are made about population numbers. Populations of this species in the Mojave Desert are fringe populations and could carry unique genetic bottleneck traits that should be researched.

Comment ISEGS-7-16: Defenders strongly urges BLM to include the Banded Gila Monster, listed under CESA as a species of special concern by CDFG, on the list of species to be analyzed and addressed. Recent scientific research has found that Gila monsters appear to use rocky hills and surrounding bajadas as overwintering sites (D.F. DeNardo, et al., 2007 Desert Tortoise Council Symposium Abstract). Thus, the project area could be important habitat for the Gila monster. The project should provide adequate mitigation for impacts to Banded Gila Monster habitat. The FSA/DEIS states that compensatory mitigation for desert tortoise may also offset impacts to Gila monsters. This mitigation measure may not have a tangible benefit for the species on the ground and is therefore inadequate. As CDFG stated in its comments, there must be a plan in place to address impacts to Gila monster should desert tortoise mitigation be insufficient to reduce Gila monster impacts to less than significant levels (CDFG comments on the Preliminary Staff Assessment, October 27, 2009, page 4).

Comment ISEGS-2-19: 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. 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.

Comment ISEGS-2-11e: 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).

***Response**: In response to these comments, BLM conducted additional analysis of impacts to gila monsters in the SDEIS. This analysis is included in the FEIS.*

Bats

Comment ISEGS-1-41: The FSA/DEIS mentions only three sensitive bat species that may occur in the area: Townsend's big-eared bat (Corynorhinus townsendii), Pallid bat (Antrozous pallidus), and Long-legged myotis (Myotis volans). Many other sensitive bat species potentially occur at the site, that are not discussed…

An assessment of project impacts on these species should be done, with a discussion of whether any additional species specific mitigation will be implemented to offset project impacts. The FSA/DEIS says that to minimize risk of avian collisions with the heliostat towers, only flashing or strobe lights shall be installed on these towers. Lower facilities will also have lights that may attract bats. The FSA/DEIS does not discuss affects of night lighting on bats in the area. Insect swarms attracted to lights may lead to bat collisions. Monitoring of impacts to bats, including mortality found on-site, should be discussed with reduction of artificial lighting proposed as a potential.

***Response**: In response to these comments, BLM conducted additional analysis of impacts to bats in the SDEIS. This analysis is included in the FEIS.*

Insects

Comment ISEGS-2-21: 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. 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 and research and consultation with an entomologist familiar with desert insects, rare insect species could occur on site. 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. 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. Foreseeable impacts include attraction of the species to the mirrors and focusing beams, and subsequent insect collisions and incineration.

Response*: The FEIS indicates that insects, like birds, may be subject to heat impacts from focused light beams. Loss and alteration of habitat could result in the loss of individuals and depress local populations of insects, but is unlikely to adversely affect populations at regional level due to high reproductive rates, immigration from surrounding areas, and the relative amount of habitat lost in comparison to the amount of habitat in the region.*

Badgers

Comment ISEGS-2-20: 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 froin 340 to 1,230 hectares. 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.

Comment ISEGS-1-40: The FSA/DEIS states that the project would induce a large loss of Badger habitat and population within Ivanpah Valley. The “compensatory mitigation plan could offset the loss of habitat for this species and reduce the impact to less-than significant” (page 6.2-46). The needs of the Badger may not be consistent with the needs of the tortoise. A separate mitigation plan should be developed for the Badger. No minimization plans are discussed.

The applicant plans to conduct Badger surveys during the desert tortoise clearance survey. If tracks are observed, the applicant would develop and implement a trapping and relocation plan. This plan should be developed now, for public review.

Response*: In response to these comments, BLM conducted additional analysis of impacts to badgers in the SDEIS. This analysis is included in the FEIS.*

General Wildlife Movement/Connectivity

Comment ISEGS-6-20: The SDEIS should indicate what measures will be taken to protect important wildlife habitat areas from potential adverse effects of proposed Project. We encourage habitat conservation alternatives that avoid and protect high value habitat and create or preserve linkages between habitat areas to better conserve the covered species. The DEIS indicates that "CDFG has noted that wildlife corridors are present through and adjacent to the ISEGS site, and have expressed concern that the project could adversely affect bighorn sheep" (at pg. 6.2-26). The SDEIS should address wildlife movement impacts associated with the proposal, and present mitigating measures to maintain wildlife movement at specific locations in the vicinity of the Project site, especially where wildlife movement already occurs.

Recommendations:

- Incorporate goals and objectives developed for the California Missing Linkages Report and the California Essential Habitat Connectivity Project and identify how Project alternatives have been designed to allow for continued wildlife movement:
- Use data developed for the statewide California Wildlife Action Plan and the Nevada Wildlife Action Plan to inform proposed wildlife crossings and mitigation. Identify in the SDEIS the specific design changes proposed to avoid resources. Both wildlife action plans address at-risk species and provides range maps.

Comment ISEGS-30-10: Impacts to wildlife movement and migration corridors. What are the impacts to mammals, birds, and insects that travel between the ISEGS site and the Mojave National Preserve? The DEIS does not consider the impacts on species, such as passerines, raptors, desert bighorn sheep, mountain lion, bobcat, coyote, or gray fox that utilize large home ranges that may include both the project site, and the Mojave National Preserve. The DEIS does not identify whether the ISEGS project will modify, or destroy existing travel or migration corridors for species. The DEIS does not discuss the usage or importance of the project site on annual or seasonal migrations. The DEIS does not address whether the alteration or destruction of migration corridors will trigger mitigation. NPCA requests that this analysis be conducted and included in the EIS, with recommendations for appropriate mitigation, if the impacts can be mitigated. If they cannot be mitigated, the siting of the ISEGS should be questioned in the context of this analysis.

Comment ISEGS-24-1: Impacts to wildlife movement and migration corridors. What are the impacts to mammals, birds, and insects that travel between the ISEGS site and the Mojave National Preserve? The DEIS does not consider the impacts on species, such as passerines, raptors, desert bighorn sheep, mountain lion, bobcat, coyote, or gray fox that utilize large home ranges that may include both the project site, and the Mojave National Preserve. The DEIS does not identify whether the ISEGS project will modify, or destroy existing travel or migration corridors for species. The DEIS does not

discuss the usage or importance of the project site on annual or seasonal migrations. The DEIS does not address whether the alteration or destruction of migration corridors will trigger mitigation. NPCA requests that this analysis be conducted and included in the EIS, with recommendations for appropriate mitigation, if the impacts can be mitigated. If they cannot be mitigated, the siting of the ISEGS should be questioned in the context of this analysis.

***Response**: The analysis of impacts to specific species in the FEIS includes consideration of the impact of the proposed project and alternatives on habitat connectivity.*

13 CLOSURE, REVEGETATION, AND REHABILITATION PLAN

Comment ISEGS-1-8: Within the heliostat fields, 10-foot wide maintenance roads would be established concentrically around the power blocks to provide access for heliostat washing and maintenance. The roads would be established between every other row of heliostats. The applicant estimates that 100 heliostats can be washed per hour with 4 trucks working 10 hours per night at about 0.4 mile per hour. 158,285 linear feet of new heliostat maintenance would be graded into creosote bursage cactus- yucca desert (page 6.2-61). An additional maintenance road would be established on the inside perimeter of the boundary fence. Within each unit, a diagonal dirt road would be established to provide access to the concentric maintenance paths and the power blocks. Some of these would be gravel. How will all these new roads be restored? Will the area become an off-roading area after the power plant is decommissioned?

Comment ISEGS-1-5b: How will BLM insure that the site can be adequately restored after 50 years of industrial use?

Comment ISEGS-33-11: Page 6.2-35 indicates that the applicant had not provided staff with acceptable reclamation plans in time for inclusion in the FSA.

A reclamation plan must include description of fugitive dust control after closure. All machinery will be removed, leave bare ground which will not be revegetated for a very long time. How will dust be controlled?

Comment ISEGS-2-24: 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 Rehabilitation 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.

Comment ISEGS-2-23: Desert lands are notoriously hard to revegetate or rehabilitate and revegetation never supports the same diversity that originally occurred in the plant community prior to disturbance. 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 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". These requirements fail to truly "revegetate" the plant communities to their former diversity and cover even over the long term. The Closure Rehabilitation and Recovery Plan revegetation criteria are even less robust, requiring after 10 years only 12% cover, 0.40 diversity and 10 species richness. Neither the agency's or project revegetation criteria require native annual species as a component of revegetation, despite the fact that native wildlife rely heavily on spring and fall annuals for survival. 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. The 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 reestablishment of late successional species throughout the site.

Comment ISEGS-1-12: In decommissioning, concrete, piping, and other materials existing below three feet in depth would be left in place. We request the applicant remove these materials.

***Response**: As part of the development of the FEIS, BLM has continued to work with the applicant to provide more specificity, establish quantitative standards for success, and otherwise improve the Draft Closure Plan. Revision 3 to the Closure Plan was submitted on July 8, 2010. The revisions associated with the FEIS have included updated information regarding the Closure Plan and its requirements.*

Comment ISEGS-9-11: Page 6.2-40 suggests that transplantation of plant species will not be effective. NPS is aware of a successful plant transplantation project associated with the Viceroy Mine in the Castle Mountains on BLM managed lands We recommend that the DEIS be revised to analyze whether the loss of habitat and translocation of plant and wildlife species would impact the number or survivability of those same species in nearby Mojave National Preserve. Wildlife species that migrate between the Preserve and the project area, or that are interdependent on the resources of the two areas may be adversely impacted. The current analysis appears to limit its scope to the specific project area.

***Response**: In working with the applicant to develop a revegetation plan that has the highest possible opportunity for success, BLM has evaluated and considered a large volume of data from academic and project-specific sources, including the Viceroy Mine information.*

Comment ISEGS-7-13: The Biological Assessment for this project lists the Site Rehabilitation Plan as a mitigation measure (Biological Assessment, page 1-21). The proponent has developed a plan for restoring the site after the 50-year lifetime of the facility. As stated in the Application for Certification (page 5.2- 29), "desert systems are ecologically fragile and it will not be practicable to recreate the lost habitat elements exactly after 50 years of site disturbance…the long-term lapse, more than 50 years, is equivalent to a total loss of this habitat." The identification of site rehabilitation as a mitigation measure is improper. The proponent concedes in its own Application for Certification that the site cannot be rehabilitated to its original state. The site will represent a total loss in terms of its habitat value. The severity of the impacts to the species merits acquisition of habitat as the most feasible mitigation measure. The desert tortoise is known to be present on the site, the habitat is of high quality, and the habitat would be significantly disturbed by the project due to grading and ground disturbance. Additionally, the project affects habitat connectivity because it bifurcates an area located at the juncture of the Mojave Preserve, the Tortoise DWMAs and Federal wilderness areas.

***Response**: Site rehabilitation is only one component of a package of mitigation measures proposed to address long-term impacts to habitat. The EIS acknowledges*

that habitat impacts will be long-term, and also includes acquisition of habitat, as recommended by the comment.

14.0 CULTURAL RESOURCES AND NATIVE GROUP COORDINATION

Comment ISEGS-1-35: What are the concerns of local tribes? The applicant and BLM did a poor job of contacting local tribes, and did not contact others, such as the Shoshone, who also have interests in Ivanpah Valley as part of their homeland. We would like a detailed description of all local Native American Tribal concerns written in the EIS.

The proposed project site lies within the homeland of the Chemehuevi. While the DEIS states that cultural sites are insignificant on the project site, we are requesting that BLM organize a site visit with elders of the Chemehuevi tribe. We would also like to request that BLM consider having the applicant submit a new plan that adequately avoids significant cultural resource sites. The Chemehuevi have expressed concern to BLM over the Ivanpah Solar Electric Generating System. While BLM has claimed that they sent all the relevant information to The Chemehuevi, the Chemehuevi are displeased because they have not been consulted on this project. That is not acceptable. An open line of communication will have to be maintained with the tribes who hold a special interest on this land.

The project area has other tribes that have a cultural history in the area as well. BLM and the applicant should contact them as well and organize site visits.

Comment ISEGS-2-37: 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.

Response*: See the Native American Consultation subsection of the Cultural Resources section (Page 4-12.32 of the DEIS), and Table 6 and Table 7 in the Cultural Resources section of the EIS. These sections provide the consultation information requested in the comments. This information has been updated in the FEIS, to include the additional government-to-government consultation that has occurred subsequent to the publication of the DEIS.*

No concerns were expressed by any of the Tribes consulted. Although information was requested, no sites of traditional or religious use were identified in the area by the Tribes. One Tribal elder from Fort Mojave did note that 'Ivanpah' meant 'good water' in Chemehuevi. The project is within the homeland of the Chemehuevi. The Timbisha Shoshone Tribe was added to the consultation/coordination list in November 2009, at their request. Numerous letters as well as phone calls and face to face meetings occurred with Tribes on this project:

Letters submitted:

Letter #1: October 4, 2007 or December 6, 2007 (for Tribes on NAHC list [*], not on BLM list) and December 2, 2009 for the Timbisha Shoshone

Initiating coordination/consultation with results of archaeological survey

Letter #2: March 5, 2009

Follow-up and results of additional survey

Letter #3: December 16, 2009

Submitting Draft EIS

Letter #4: April 16, 2010

Submitting Supplemental Draft EIS

The Needles Field Office (NFO) Manager and archaeologist had short face-to-face meetings with both Chairman Arnold (Pahrump) and Cara (Chemehuevi Cultural) about ISEGS at an OHV conference at Chemehuevi Reservation, but no concerns were expressed. BLM was contacted by Phillip Smith (Fort Mojave Indian Tribe) on October 21, 2009. The only specific comments he gave were that the Chemehuevi used to live in and use the mountains surrounding the Ivanpah Valley for hunting and collecting, that a spring was named "Ivanpah" meaning 'good water' in Chemehuevi (not near the project area) and that he wanted to be included on future mailings.

There was a contact via phone on 4 May 2010, with Chairman John Valenzuela, San Fernando Band of Mission Indians. He wanted to know if the project lands had been surveyed and if any prehistoric or Tribal sites had been found. BLM assured him that only historic period sites had been identified to date and that BLM would let him know if any were identified. His concern was that prehistoric sites indicating tribal activity might be destroyed.

Chemehuevi Indian Tribe
Colorado River Indian Tribes
Fort Mojave Indian Tribe

Las Vegas Paiute Tribe
Pahrump Paiute Tribe
**Cahuilla Band of Indians*
**Morongo Band of Mission Indians*
**Ramona Band of Mission Indians*
**San Fernando Band of Mission Indians*
**San Manuel Band of Mission Indians*
**Serrano Nation of Indians*
Timbisha Shoshone Tribe

The only site eligible for inclusion on the National Register of Historic Places that will be affected is the transmission line. No prehistoric sites were identified in the project footprint.

Comment ISEGS-1-34: During geoarchaeological studies observers found patches of very stable old bajada, bypassed by flood washes and ground disturbance. "A subfossil piñon log (Pinus monophylla) was found on a more recent bajada surface among recently active ephemeral streams. The log is thought to be anywhere from 1,100–3,400 years old and may date the surface on which it was found to that approximate age. This information and the recent inadvertent discovery of an intact historical archaeological site (Temporary field no. ISEGS-02) approximately 1,700 feet to the east of Ivanpah No. 2... demonstrates that, although the bajada is subject to a geomorphic regime of net erosion, the landform provides enough stable surface patches to preserve a representative sample of the historical archaeological deposits that would reflect historic activity on the bajada" (page 6.3-40 on our hard copy of the FSA/DEIS, and page 4.12-42 on the digital cd version).

This is "old growth Mojave Desert scrub" and we found ancient creosote rings also indicating stable land surfaces. These creosote grow clonally outwards in a ring, and may be thousands of years old. These areas may hold cultural features and artifacts and should be thoroughly surveyed before scraping.

We have found at least one old trail running east-west through the middle of the project. This should be preserved and avoided, as it may be an important prehistoric trail, and may connect Clark Mountain with the geoglyph on the small hill, and other areas.

A strange "enigmatic" geoglyph (ISEGS-01) was found next to the metamorphic hill on a small hill next to the middle of the project site (page 6.3-50 hard copy). If a large industrial development is built so close to this eoglyph, it may be vandalized. Therefore the No Action alternative should be considered, as this area may have important cultural values.

What will happen to cultural sites found on the site? Will they be collected and archived or simply destroyed? We request that the applicant be required to document, and avoid all artifacts and features.

The FSA/DEIS admits: "Construction of the solar and wind projects proposed throughout this region would result in substantial changes in the setting and feeling, and association of the areas in which they are constructed. The current design of these projects would result in a significant cumulative impact to the region. Within the desert region there are numerous traditional use areas, and lands sacred to Native Americans are present. Potential impacts would include physical disturbance or alteration directly as a result of construction activity or diminished visual character of traditional use areas due to the presence of industrial structures. If impacts to traditional use areas would occur at any individual site, mitigation would be implemented to minimize project impacts; however the potential for vast disturbance of the desert would potentially lead to a loss of resources and impacts to visual character, thereby resulting in a significant cumulative impact. (page 4.12-72 in the digital version, page 6.3-71 hard copy). The No Action alternative should be taken so as not to disturb this area and lead to cumulative impacts.

Just because large numbers of lithics have not been found on the fan does not mean it is not a significant cultural area, as people may have used it commonly to hunt lizards and rabbits, collect Lycium berries, which grow commonly on the project site, and other uses which do not preserve well in the archaeological record.

Response*: No prehistoric sites were identified within the project footprint. Only one site within the project boundary (the Hoover Dam-to-San Bernardino transmission line, CA-SBR-10315H) has been determined eligible for inclusion on the National Register of Historic Places. The impacts to this important resource will be mitigated. Sites that have been determined not eligible do not require mitigation.*

15.0 FIRE, SAFETY AND HAZARDOUS MATERIALS

Comment ISEGS-27-2: County Fire respectfully disagrees with CEC Staff's conclusion that hazardous materials impacts would pose no significant threat. It appears that not all State requirements were thoroughly researched and reviewed prior to resultant conclusions. Although the document references the Federal Spill Prevention Containment and Countermeasures Plan, there is no reference to the State Above-Ground Petroleum Storage Act. Conclusions regarding air modeling need further study, particularly with regard to aqueous ammonia and sulfuric acid. Further, there is not enough information to determine if a Risk Management Plan is required for the aqueous ammonia as per the California Health and Safety Code. Appendix A is lacking supporting documentation for several of the chemicals that are referenced in the EIS. Further study on these and other issues are necessary before conclusions can be drawn.

Additionally, the DEIS is lacking any references at all regarding the proper management of routinely generated hazardous wastes, either from a Federal or a State perspective. This needs to be addressed before conclusions can be drawn.

***Response**: The comment has been reviewed, and the FEIS text has undergone revision to add the reference to the State Above-Ground Petroleum Storage Act. No information on aqueous ammonia has been added, as the facility will not use aqueous ammonia. Information on the sulfuric acid to be used was already present in the Hazardous Materials Management section of the DEIS. Information on hazardous wastes was presented in the Waste Management section of the DEIS.*

Comment ISEGS-2-25: Fire in desert ecosystems is well documented to cause catastrophic landscape scale changes and impacts to the local species. 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.

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.

Comment ISEGS-30-7: Potential for the ISEGS or its associated transmission to create a fire hazard on site, or on adjacent lands.

Comment ISEGS-1-24: A fire protection system would be designed to protect personnel and limit property loss and plant downtime in the event of a fire. The primary source of fire protection water would be the 250,000 gallon raw water storage tank to be located in each power block. Approximately 100,000 gallons would be usable for plant process needs and 150,000 gallons would be reserved for fire protection. All fire protection systems would be focused on the power blocks, administration/warehouse building, and other areas of active operations. The project would not include any specific facilities to address potential wild fires. This would put the burden on the counties. How will the applicant address wildfires and increased costs to the county of fire-fighting?

Comment ISEGS- 27-5: The County Fire Department respectfully disagrees with CEC Staff's conclusion that the proposed project will not have impacts on local fire protection services. Review by the County Fire Department indicates that the fire risks at the proposed facility would pose significant added demands on local fire protection

services. Service areas for existing stations are currently far in excess of reasonable demands and are frequently stretched far beyond their capacity. The County Fire Department further disagrees with Staff's conclusion that response times and staffing are adequate for this project. Under perfect conditions, the closest station is barely inside the "golden hour" for successful trauma response and recovery. Routine responses to average weekend traffic incidents can completely deplete staff and resources. Also, inclusion of references to mutual aid with Nevada jurisdictions fails to recognize that mutual aid is voluntary and not compulsory. Further study on these items is necessary. In addition, it would be appropriate for Staff to further investigate Emergency Medical Service impacts that will arise from over 1,000 employees, particularly since Advance Life Support Services (ALS) is just within an hour travel time under perfect conditions regardless of the precautions and conditions taken on-site.

Comment ISEGS-27-6: Financial impacts to fire protection services need further study. Although financial issues may not be a direct environmental impact, if the fire service does not have the financial support for staffing, equipment and facilities to respond to fire, hazmat and other emergencies at the project, then incidents on-site could predictably result in both onsite and even off-site environmental degradation.

***Response**: The potential for facility construction and operations to cause wildfires was addressed on Pages 6.14-11 to 6.14-13 of the DEIS. The potential for transmission lines to cause fires was evaluated on Page 6.11-7 of the DEIS.*

16.0 GEOLOGY/PALEONTOLOGY/MINERALS

Comment ISEGS-27-7: The Ivanpah Fault and Stateline Fault are mentioned but do not seem to be analyzed in sufficient detail as we do not find full discussion of whether (and how) they may be hydrogeological features that may influence groundwater recharge and drawdown models. Further, these faults may be a seismic source as some recent literature suggests, a reference to which we forwarded to your office in our October 15, 2009 letter to Chris Dennis. The seismic safety of the power plant and towers directly relates to worker safety at the facility.

***Response**: Information on the relationship between the faults and groundwater has been added to Section 4.16 of the FEIS. The potential for the faults to create a worker safety hazard was analyzed in detail in the DEIS (see Pages 6.15-12 to 6.15-15).*

17.0 GRAZING

Comment ISEGS-2-4b: 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. 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 "[following 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."

Comment ISEGS-9-16: Livestock Grazing, Page 6.16-4 - This section of the document lacks discussion of impacts from potential livestock displacement within the Clark Mountain Grazing Allotment. The Allotment is shared between the NPS and Bureau of Land Management with the majority of AUMs on BLM managed lands. We recommend that this section of the document address project impacts on grazing and possible herd migration to relatively undisturbed desert habitat. We recommend that it also address whether the allotment will be reduced by the number of displaced livestock.

Response*: The text in the FEIS has been modified to provide the additional clarification requested by the comments.*

18.0 LAND USE

Comment ISEGS-27-1b: In San Bernardino County, 12,000 acres represents a full 12% of the 140,000 acres of potential desert tortoise habitat held in private unincorporated lands under County jurisdiction. This limits future development by setting aside 12% of the possible desert tortoise habitat on private lands. That represents a significant loss of developable land and economic potential, just on a project basis. Considered on a cumulative scale, looking at Table 5: Regional Renewable Energy Projects, fully one million acres may be occupied with renewable energy projects. At a 3:1 ratio, these would require another 3 million acres, for a total of 4 million acres for just these few projects and their mitigation lands. As a reference, there are 3 million acres of San Bernardino County private unincorporated lands in the West Mojave Plan area. The cumulative analysis does not add up the mitigation lands for the foreseeable projects.

Response*: This agency acknowledges that the mitigation, if it takes the form described in the comment, may result in some impact on County tax base. However, it is difficult to quantify based on several uncertainties, including the likely location of some portion of the compensation lands outside of San Bernardino County; the likelihood that some portion of the compensation would be in the form of habitat enhancements projects,*

rather than direct land acquisition; and the uncertainty on what proportion of the existing applications will eventually be actually developed.

Comment ISEGS-1-13: BLM admits that the project would not conform with San Bernardino County's General Plan Conservation and Open Space Elements. How will this be mitigated?

***Response**: The FEIS has been revised to modify the conclusion regarding the non-conformity with the San Bernardino County General Plan. The San Bernardino County General Plan includes a statement to the effect that it is not applicable on public lands. Therefore, the project is not out of conformance with the Plan.*

Comment ISEGS-2-4c: 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, nowhere 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.

***Response**: As stated in the comment, the use of Multiple-Use Class L lands for solar power development was considered in the CDCA Plan, and determined to be acceptable. Also, the FEIS concludes that the proposed project would result in a contribution to cumulative land use impacts, and that these impacts would not be mitigable. The likelihood and magnitude of these impacts have been disclosed in the EIS, and have been considered by BLM in the selection of a preferred alternative. They will also be considered in the decision whether or not to issue a ROW grant for the proposed project.*

Comment ISEGS-1-2: The project will be built on approximately 4,073 acres. But the Final Staff Assessment/Draft Environmental Impact Statement states: "The applicant's proposed increase in heliostat mirror surface area associated with the Optimized Project Design led the applicant to also propose an increase in total ISEGS area of about 300 acres and extension of the project boundaries of the three power plants by 250 feet along each perimeter...a portion of the increased heliostat surface area to be licensed ensures that the project will be able to meet its contractual output requirements even if the solar resource is less than forecasted. The final rows of heliostats may not be necessary. Pending the results of actual performance during plant operation, a decision will be made on whether or not to install the additional heliostats" (page 3-6). And more land: "In addition to use of the proposed right-of-way area, the applicant proposes some project-related activities to occur outside of the project fence, on land not included within the proposed right-of-way area. These would include inspection and maintenance of the fence, underground utility repairs, maintenance of drainage systems, and possible installation of new stormwater drainage systems. In addition to these activities, a roadway would need to be maintained outside of the project fence to allow vehicle and equipment access for these activities" (page 1-6). So after public comments are taken, after the environmental review process, and after the plant is built and begins operation, the applicant wants the option of more public land. The FSA/DEIS does not state whether this would trigger a new environmental review process, or whether this land is cryptically included in the present decision.

Response: *See Mitigation Measure LAND-2 in the DEIS. This Mitigation Measure required the project fence be inset 20 feet from the ROW boundary to allow for maintenance activities on the outside of the fence, and specified the conditions in which such work would require additional NEPA review. Full NEPA review of potential future activities cannot be performed at this time because need, location, and nature of those activities cannot be predicted.*

19.0 NOISE

Comment ISEGS-9-12: Ambient Noise Monitoring, Page 6.6-5 - This section states that "[a]mbient noise monitoring was not required for the ISEGS project, since Energy Commission regulations require such monitoring only when facilities where quiet is an important attribute of the environment would be impacted by the project. The community of Primm, Nevada, 4.5 miles distant, is too far from ISEGS to be significantly impacted by project noise. The Primm Valley Golf Club golf course is considered a less noise-sensitive land use."

The NPS considers the lack of ambient noise monitoring to be a significant failing of the DEIS. The lack of monitoring makes impacts on adjacent lands, such as Mojave National Preserve, impossible to predict therefore the analysis is incomplete. The analysis only addressed noise impacts on the town of Primm, NV and the local golf course. While the DEIS acknowledges the presence of Mojave National Preserve, the analysis fails to disclose impacts on the natural sounds cape and sound dependent

resources of the park. As stated above, without ambient sound monitoring at the project site and in the park, potential soundscape impacts are impossible to analyze or predict.

Comment ISEGS-30-8: Impact to soundscapes. How will the natural soundscape of the Clark Mountain exclave, and other locations within Mojave National Preserve be affected by ISEGS during construction, during operation, and cumulatively considering the multiple proposed projects for the Ivanpah Valley? Considering the level of alteration of the natural soundscape, what are the projected impacts to the lambing success of Clark Mountain and adjacent desert bighorn sheep populations?

Response*: The FEIS text has been revised to add information regarding the impact of noise on the Preserve, and on bighorn sheep populations.*

20.0 PROJECT DESCRIPTION

20.1 Project Description - Site Security

Comment ISEGS-9-4: Section 3.3-Project Description - The general Project Description should include reference to appurtenant project features, specifically transmission lines and telecommunication facilities

Response*: The text of the FEIS has been revised to provide additional information on the transmission system..*

20.2 Project Description – Heliostats

Comment ISEGS-1-4: Without constant cleaning, the Daggett Solar 2 power tower heliostats degraded in quality as the mirrors became sand-blasted. This ended up reducing the efficiency of the system, and it produced less electricity than hoped (Romero-Alvarez, Manuel and Eduardo Zarza. 2007. Concentrating Solar Thermal Power. In, Frank Kreith and D. Yogi Goswami (eds.), Handbook of Energy Efficiency and Renewable Energy. CRC Press: Boca Raton, London, New York.). Developers wanting to build these delicate systems in the harsh desert may not be taking this into consideration.

Response*: The DEIS text on Page 3-15 specifies that the mirrors will be routinely washed.*

Comment ISEGS-1-17a: Will high winds whipping through the desert rip 20-foot wide heliostats off their bases like sails?

Response*: Information on the stability testing of heliostats has been added to the FEIS text.*

20.3 Project Description – Grading

Comment ISEGS-33-12b: It's understood that the amount of grading is perhaps most responsible for and has the most impact on site degradation, in consideration of the complete or near complete or total loss of desert life, and the almost permanent degradation. (The FSA describes this as permanent in several places.) I could not find a specific description of the grading that would be required. I found various places indirectly indicating complete grading would not be needed. Page 4-61, in the section on photovoltaics: ... more severe effect on biological resources than the ISEGS project, which would not require grading over the entire site.

Descriptions of many of the alternatives claim lower acreage requirements for the same power output, but that the acreage would be completely graded.

Reasonable comparison of these alternatives is not possible without knowing the grading characteristics of the proposed technology. Please guide me to the grading description in the FSA, or provide a description. Of course, the primary question is how much surface disturbance. A corollary question is the survival rate of undisturbed or damaged / trimmed plants in the changed environment of less sun and surrounding plants, animals and insects.

***Response**: The DEIS text on Pages 4-56 through 4-62 discusses the grading requirements of various solar technologies. Most solar technologies, such as parabolic trough and photovoltaic, require an almost completely flat site which is completely graded. Power tower technology, on the other hand, does not require substantial grading. As described in Table 1 of the DEIS, the applicant made substantial changes in their proposed project design throughout the environmental review process to reduce the amount of grading required. The Mitigated Ivanpah 3 Alternative would reduce the required grading even further.*

Comment ISEGS-1-6: The applicant claims it has a way of "lightly" impacting the desert, not grading the entire 4,000 acres of all plant life, in a "Low-Impact Development" design. What does this involve? The vegetation that could "interfere with mirror movement to a height of 12 – 18 inches" would be clipped and pulped (page 1-9 in the FSA/DEIS).

Creosote may stump-sprout after cutting, but could die after repeated cuttings. Many other shrubs present on the desert fan are adapted to dispersing by seed, and are killed by cutting at this level. We doubt that this treatment will result in "light" impacts to the Mojave Desert scrub habitat, but will severely alter it and destroy much of it. We are not sure what fire fuel management policy the company has in mind for all this potential dying vegetation.

***Response**: While the applicant has proposed to leave vegetation in place, the EIS acknowledges that the effects of clipping, soil compaction, shading, and modified*

hydrology could impact vegetation anyway. Some of the analyses, such as the agency's stormwater modeling, assumed worst-case conditions, which would include full removal of all vegetation. In general, the EIS analyses of stormwater, weed management, fire, and impacts to vegetation were based on worst-case conditions. Any vegetation that survives as a result of the Low-Impact Development approach would reduce potential impacts.

Comment ISEGS-1-9: What are the details of the grading? What are the acres of vegetation that would be left in place in the heliostat field, and how many acres will be graded? How level will grading be on this sloping fan? How many acres will be scraped of vegetation and compacted by driving, but not graded?

***Response**: The estimates of temporary and permanent ground disturbance were provided in Table 2 of the DEIS..*

20.4 Project Description – Output/Efficiency

Comment ISEGS-1-16e: The applicant may have underestimated the amount of summer cloud cover over Ivanpah Valley, compared to central and western Mojave locations that are not as influenced by the Arizona Monsoon. Two years of weather measurements would not pick up the variation over decades in cloud cover patterns in the area, which would include many El Nino wet events; in addition, some summers over any ten-year period are well above-average for monsoonal activity in the east Mojave Desert. Problems have been encountered with the applicant's pilot project when clouds move over part of the heliostat field and become stationary, causing one side of the tower receiver to heat while the other side cools. This may cause damage to the receiver and necessitate placing the heliostats in the safety position. In addition, the superheater experiences problems when part of the heliostat field is covered with passing clouds, and must be put on standby mode. Twenty-five to 30% of rainfall occurs in the summer in the east Mojave Desert, where Ivanpah Valley is located, compared to 5 to 10% in the west Mojave. This could significantly reduce plant efficiency and negate any benefits to greenhouse gas reduction that ISEGS might provide. In addition, clouds cause a further decrease in any slight dispatch ability ISEGS would have during the sunlit hours. Cloud cover makes the solar field power generation untrustworthy, compared to natural gas. These types of solar thermal power plants will not compete with conventional power plants. Electricity prices from ISEGS may prove to be higher than anticipated.

Comment ISEGS-33-5: The DEIS is missing analysis of the net energy produced. It is impossible to judge if the project balances the environmental cost without knowing how well the project satisfies its basic purpose.

This analysis should compare net usable energy produced against the no-action alternative, which would neither use or produce energy. It therefore should include:

- Energy delivered to the customer, after it has gone through transmission lines.
- Energy required to upgrade or make new transmission lines.
- Energy expended during construction - machinery fuel etc.
- Personnel commuting energy (gas for commuting vehicles), during construction and production.
- Energy to transport the plant machinery to the site.
- Energy to make the mirrors and supports, power plant (turbine, boilers, ..), exclusion fence, and all other facilities. This energy should be compared to the no-action alternative, which would use no materials, and so should include the energy required to mine the materials, through the manufacturing processes to the finished product.
- Construction will advance construction machinery to its eventual end of life. The energy analysis should include the energy needed to either replace worn out machinery, or a percentage of life used. Again, this should include total cost of replacement, from mine to finished product. (Without this project, these costs would be avoided.)
- Parasitic energy during production.
- Energy from natural gas required between periods of operation.
- Energy required for decommissioning at the end of the useful life of the power plant.

Comment ISEGS-1-17b: At over 4,000 acres this plant's nameplate capacity is only 400 megawatts (MW), with a capacity factor of 28% and 7-10% transmission loss that would equal 100 MW. Compare this low efficiency to Southern Co./Georgia Power Co.'s Plant Bowen coalburning power plant which occupies 2,000 acres but puts out 3,160 megawatts maximum at 70-90% capacity. This does not take into account the terrible cost of mountain-top removal mining for coal in the Appalachians, but the question should be asked how solar thermal will replace coal? Desert-top removal is just as bad. For remote solar plants like the Ivanpah project, built hundreds of miles from cities, the cost of upgrading and building new power lines needs to be factored in.

Comment ISEGS-33-1: The facility will generate approximately 110 MW, not 400MW as stated throughout the documentation. This is closely in line with capacity factors for CSP solar generators in general. The 400 MW number is highly misleading, and should be changed to reflect the true output.

The table at the bottom of page 2-2 of the AFC (not the FSA/DEIS) shows 400 MW total 'Capacity, Net (MW)" implying the electricity generated will net out at 400MW. But it also shows the annual production will be 960,000 MWh per year. Since there are 365x24 = 8,760 hours in a year, dividing the 960,000 Wh per year by 8,760 hours per year gets 110 MW, nowhere near the 400 MW used to characterize the facility.

The difference is Capacity Factor, the ratio of the facility's maximum power output to its average over time. Wikipedia has a succinct definition:

> The net capacity factor of a power plant is the ratio of the actual output of a power plant over a period of time and its output if it had operated at full nameplate capacity the entire time.

Capacity Factor is commonly on the order of 25% for CSP solar facilities, due to nights, short winter days, low morning and evening sun angles, cloudy days, etc. The number for Ivanpah works out to 110/400 = 27%, consistent with other solar facilities.

This is a gross, misleading mischaracterization, and must be corrected. The number invites almost all readers to assume the plant will produce almost four times as much as it actually will produce. The misconception carries to media reports and to general public perception. It misleads the public, and probably many working on the project as well.

The difference between the oft-stated 400MW and actual production are not explained in the AFC or the FSA. An extremely small number of people would think to question the 400 MW number. An even smaller number would be able to locate the real output in the AFC and do the arithmetic.

That this is common with most solar facility descriptions is not a reason or excuse to allow it to happen in the Ivanpah documentation. It is wrong and misleading to the point of being fraudulent. One responsibility of the documentation is to fairly describe the proposal, and 400 MW does not do that. Because this is a common practice, the documents should explain the difference between maximum and average output, explain Capacity Factor, and explain that the output is commonly mis-stated.

Because it is easy to miss a single explanation in such a large amount of documentation, or not understand its implication, or be seduced by repetition of the 400 MW number, all documentation connected with the project should be corrected. Perhaps both numbers should be used side-by-side, and when comparing Ivanpah with other facilities the 400 MW number could be used, with explanation. The purpose is to alert and avoid misleading readers who are innocent of this situation.

Despite this gross discrepancy and the importance of facility output in judging benefit, it appears this concept is effectively missing from the documentation.

Here is a list of some locations in the early chapters of the FSA that mention 400 MW. There are weak hints to the discrepancy...Here are some media quotes. I googled 'Ivanpah Solar' to find them:…

Comment ISEGS-1-17c: The Ivanpah Solar Electric Generating System if constructed and operated as proposed, would generate 440 megawatts (MW) (maximum net output) of electricity, and would use natural gas to generate up to five percent of its capacity. We would like BLM to discuss capacity factor, the actual output of electricity that concentrated solar thermal power plants have produced to date. Without energy storage, the annual capacity factor of any solar technology is generally limited to about

25 percent of maximum according to the Renewable Energy Research Laboratory. ISEGS would not use storage technology. We disagree with the statement, "[ISEGS] would not create significant adverse effects on fossil fuel energy supplies or resources, would not require additional sources of energy supply, and would not consume fossil fuel energy in a wasteful or inefficient manner" (page 7.2-1).

Fossil fuel would have to be burned elsewhere on the grid as baseload, mostly as coal, as solar energy is intermittent. The Ivanpah solar plant will not run during the night, during cloudy days, and on cold winter mornings the small on-site natural gas burners will have to run to heat the system up. On page 7.2-2, the Final Staff Assessment/Draft Environmental Impact Statement (FSA/DEIS) states: "So far as staff can determine, methods for determining the efficiency of a solar power plant have yet to be standardized; research has uncovered no meaningful attempt to quantify efficiency. The solar power industry appears to have begun discussing the issue, but a consensus is forthcoming..."

But why is CEC/BLM comparing ISEGS to a baseload plant, which is supposed to produce energy at a constant rate? Examples of baseload plants include nuclear and coal-fired plants. Baseload plants typically run at all times of the year, and all night. Clouds do not turn them off. They also have dispatchability, able to ramp up or down to generate power on a human-based schedule. Peaks or spikes in customer power demand are handled by smaller and more responsive types of power plants called peaking power plants. Peaking plants are typically powered with natural gas turbines. Baseload power plants do not change production to match power consumption demands since it is more economical to operate them at constant production levels. Natural gas is used in base load, intermediate cycle, and peaking units. In California, more than three-quarters of natural gas generation comes from combined cycle gas turbines (CCGT) operated as baseload and intermediate cycle units. Solar thermal power is not dispatchable.

A load-following power plant gradually ramps up and down its power output to respond to scheduled changes in power demand over the course of a day. Gas, pulverized coal, and hydroelectric generators are commonly used to follow the load. "Solar photovoltaic or CSP [concentrated solar thermal, like ISEGS] without storage can approximately follow the load on sunny days, when peak demand is around mid-day" (From Solar Southwest Initiative).

So the ISEGS solar thermal power plants should be compared to a load-following plant, not baseload. But not being dispatchable on command, it would compare poorly even with this. We have witnessed the summer monsoon season in Ivanpah Valley shade much of the area with tall thunderheads every afternoon for weeks.

The FSA/DEIS states: "Based on a review of the proposal, staff concludes that the Ivanpah Solar Electric Generating System (ISEGS) would be built and would operate in a manner consistent with industry norms for reliable operation. This should provide an adequate level of reliability" (page 7.3-1). But even for standard solar thermal plant

operation we question the placement of this project on an active floodwash fan in a desert with summer monsoon above the average for the western and central Mojave Desert (where other CSP projects such as Daggett Solar 1 and SEGS Kramer Junction plants, are located). Concentrating solar power needs a sharp sun image to be efficient. It is best done in deserts where there are no clouds or haze. Dust haze scatters light, and image efficiency plummets. Windstorms blow dust off Ivanpah playa frequently, and could lower efficiency for ISEGS. Cloud cover will force the plant to be turned off during winter and summer storms.

Comment ISEGS-2-10b: 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%. FSADEIS 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.

***Response**: An additional subsection has been added to Section 3 of the FEIS to discuss the factors affecting output of the facility, as requested by the comments.*

21.0 RECREATION

Comment ISEGS-2-4d: 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." FSNDEIS 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 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.

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.

Comment ISEGS-1-20a: What kind of “mitigation” would be provided to compensate for disruption of access? Coliseum Road, currently a dirt road used by recreationists, would be paved to a 30-foot wide, two lane road for a distance of 1.9 miles from the Primm Valley Golf Club to the facility entrance. The road would be re-routed around the southern end of Ivanpah 2 before rejoining the current road to the west of the proposed facility. But two other dirt roads used by recreational users would be blocked and re-located outside of the project boundary fence. How will this affect recreational use of the roads? Even on weekdays we have seen several vehicles using Coliseum Rd. and other side roads. What are the estimated numbers of recreationist use through the area? This is a main area for access to Clark Mountain. How will the project affect road use?

***Response**: In the development of the DEIS, and in response to this comment, BLM has considered the likely effect of the re-routing of the roads on recreational uses of the roads. The re-routing of the roads is considered to be a minimal length (about 2 miles), and the impact on users is expected to be minor.*

Comment ISEGS-27-8: Mitigation Measure REC-1 proposes to mitigate the loss of recreation by establishing a viewing platform to see the ISEGS facility. While we concur with the viewing facility recommendation, the proponent should also pursue a permit from Caltrans for a freeway sign for the viewing facility exit. Again, the loss of recreational opportunities on another 12,000 acres of desert land is not addressed.

***Response**: Although not specifically stated in the DEIS, this Condition of Certification was specific to the CEC’s certification, it was not intended to be a BLM-proposed mitigation measure. The FEIS has been modified to remove this measure as a BLM-proposed measure. However, Energy Commission staff believes the addition of a freeway sign has merit, and has added this requirement to their Condition of Certification REC-1.*

The DEIS addressed the impact on recreational resources due to the development of the 4,000+ acre project site. The comment regarding the loss of recreational opportunities on 12,000 acres is assumed to be made in reference to the possible 3:1 land compensation for desert tortoises. The actual land acquisition that would occur has not been determined, and may include acquisition of private land which would then be transferred to BLM – if so, these lands would be available for recreational opportunities. Therefore, no assumptions can be made, at this time, that any compensation lands would be removed from recreational uses.

Comment ISEGS-1-20b: The DEIS states, "The impact on the quality of outdoor recreational experience would diminish the experience of campers, hikers, hunters, and other recreational users" (page 1-26). Yet BLM concludes that impacts will not be significant. With a large increase in industrial facilities, traffic, noise, dust, and glare, the recreational experience of many users in the valley and in the surrounding Stateline Wilderness, Mesquite Mountain Wilderness, and Mojave National Preserve, will be greatly impacted. Wilderness values will drastically decrease with an industrial facility a mile from wilderness boundaries. Views from Clark Mountain will be changed from natural to developed. Wildlife will potentially leave the vicinity, impacting hunting and birdwatching. Campers may not use the fan anymore because of bright glare and reduced night-time dark skies. Hikers will have less land to explore.

"The proposed project would contribute incrementally to the long-term reduction of outdoor recreation quality available in the Ivanpah Valley area of the California Desert due to the cumulative effects of development leading to a transformation from a natural setting to a more industrial setting" (page 6-18.2). The No Action alternative should be considered to avoid these cumulative impacts to multiple use and recreation of public lands.

***Response**: The FEIS has been revised to eliminate the determination of significance, which was a requirement of the CEC's CEQA process in the FSA. The impacts of the proposed project, as referenced in this comment, remain in the text. BLM has considered this impact on recreation in its selection of a preferred alternative, and will consider it in the decision regarding whether or not to issue a ROW grant in the Record of Decision.*

22.0 SOCIOECONOMICS

Comment ISEGS-23-1: Located across Highway 15 from the Ivanpah Dry Lake, the 440 megawatt Ivanpah project will serve as a cornerstone of the High Desert region's economic development efforts. Ivanpah is estimated to directly create 1,000 local jobs at the peak of construction and 86 permanent jobs, as well as to indirectly create more jobs needed to supply materials and services during the project's construction and operation. The project is estimated to directly produce $650 million in wages and $400

million in state and local taxes over its thirty-year lifecycle, and again provide significant indirect benefits as well. BrightSource Energy's engineering contractor, Bechtel, has tentatively signed an agreement with the California Building Trades Council to ensure that California's workforce benefits from this project.

Projects such as BrightSource Energy's Ivanpah Solar Electric Generating System will not only bring hundreds of much needed construction jobs to the High Desert, but will attract other projects in its wake that will provide further employment and economic stimulus.

Comment ISEGS-31-1: ISEGS would directly create approximately 1,000 jobs at the peak of construction and 86 permanent jobs, providing a total of $650 million in wages over the project's thirty-year life cycle, as well as indirectly creating more jobs needed to supply the materials and services that are required for the project's construction and operation. ISEGS would directly provide $400 million in state and local taxes over its lifecycle, and again provide significant indirect tax benefits as well. The Applicant's Engineering, Procurement and Construction contractor, Bechtel, has executed an agreement with the California Building Trades Council to ensure fair wages and benefits for the workers who contribute to this project.

Comment ISEGS-36-2: Our Governor in California has repeatedly stated his support for solar energy projects in the desert. His comment, "if you can't build solar energy projects in the desert, where the hell else can you put them," says it all concerning the desire of those of us seeking new energy alternatives while employing local residents to build these projects. With an unemployment rate exceeding 18% in the desert community areas, it should be required of local elected leaders to justify their opposition to this job-creation opportunity with their own plan to make up for the 1,000 estimate jobs that Brightsource would be providing.

Comment ISEGS-36-4: Finally, my high school friend, Keith Marcione, is a member of the local union and a resident of Hesperia. He has informed me that all of his union members from Barstow to Victorville to San Bernardino will be needed for the construction requirements at Ivanpah. He also noted that the only reason Las Vegas is being used is because of the amount of construction workers needed to complete the project in the 18-24 month window. Construction jobs have been hit the hardest in San Bernardino County during this Great Recession. With the government revenue and energy development Brightsource will provide, our local elected opposition should justify giving up this energy development and job creation by providing their own feasible plan for either job creation or energy development. Short of that, they are simply government becoming the problem instead of being part of the solution.

Comment ISEGS-38-2: Located in California's San Bernardino County, across Highway 15 from the Ivanpah Dry Lake, the 440 megawatt Ivanpah project will serve as a cornerstone of the High Desert region's economic development efforts. This BrightSource Energy project is estimated to create 1,000 local jobs at the peak of construction and 86 permanent jobs. The project is estimated to produce $650 million in

wages and $400 million in state and local taxes over its thirty-year lifecycle, and provide significant indirect benefits as well.

Comment ISEGS-14-2: The Ivanpah SEGS project will serve as a cornerstone of California's new energy economy. It will create 1,000 local jobs at the peak of construction and 86 permanent jobs, and will indirectly create more jobs needed to supply materials and services during the project's construction and operation. Over its thirty-year lifecycle, the project would produce $650 million in wages and $400 million in state and local taxes; additional wages and tax revenue would come from indirect jobs and economic activity spurred by the project.

Comment ISEGS-20-2: There are important economic ramifications to this decision as well. Venture capital has historically played a crucial role in generating new enterprises and new jobs, and this is especially true in California. California’s economy is one of the largest in the world, and it is fueled in part by a strong venture capital community and spirit of entrepreneurship. In 2008, 43% of VC investing in the U.S. overall came from Silicon Valley, and not surprisingly, a greater proportion of job openings in start-up companies are also concentrated in California. According to a recent study by the National Venture Capital Association, 39% of the start-up job openings in the country today are located in California (about 4,200 out of 11,000). And CleanTech has the potential to be a major source of VC-supported future job creation. A recent study led by UC Berkeley, Yale University, and the University of Illinois indicated that the passing of the current federal climate change legislation alone could lead to the creation of as many as 1.9 million jobs in the U.S., in part from new businesses that would arise to respond to new incentives and mandates.

Comment ISEGS-13-2: The Ivanpah SEGS project will create 1,000 local jobs at the peak of construction and 86 permanent jobs, and will indirectly create more jobs needed to supply materials and services during the project's construction and operation, Over its thirty-year lifecycle, the project is expected to produce $650 million in wages and $400 million in state and local taxes. Additionally, wages and tax revenue would come from indirect jobs and economic activity spurred by the project.

Comment ISEGS-15-2: The 440 megawatt Ivanpah project will be a major enhancement for the High Desert region's green economic development efforts. Ivanpah is estimated to directly create 1,000 local jobs at the peak of construction and 86 permanent jobs, as well as to indirectly create more jobs needed to supply materials and services during the project's construction and operation. The project is estimated to directly produce $650 million in wages and $400 million in state and local taxes over its thirty-year lifecycle, and again provide significant indirect benefits as well. BrightSource Energy's engineering contractor, Bechtel, has tentatively signed an agreement with the California Building Trades Council to
ensure that California's workforce benefits from this project.

Comment ISEGS-17-2: Located across Highway 15 from the Ivanpah Dry Lake, the 440 megawatt Ivanpah project will sever as a cornerstone of the High Desert region's

economic development efforts. Ivanpah is estimated to directly create 1,000 local jobs at the peak of construction and 86 permanent jobs, as well as to indirectly created more jobs needed to supply materials and services during the project's construction and operation. The project is estimated to directly produce $650 million in wages and $400 million in state and local taxes over its thirty-year lifecycle, and again provide significant indirect benefits as well. BrightSource Energy's engineering contractor, Bechtel, had tentatively signed an agreement with the California Building trades Council to ensure that California's workforce benefits from this project. Projects such as BrightSource Energy's Ivanpah Solar electric Generating System will not only bring hundreds of much needed construction jobs to the High Desert, but will attract other projects in its wake that will provide further employment and economic stimulus.

Comment ISEGS-17-4: We believe that BrightSource and other solar energy projects will provide greatly needed economic benefits to the High Desert and respect the environment at the same time. Please join us in supporting the proposed Ivanpah project as it leads our region back to economic prosperity and puts the High Desert on the vanguard of a new promising industry.

At a time where 1 in 5 people are unemployed, we cannot afford to chase opportunity away.

Comment ISEGS-19-2: When constructed, the Ivanpah project is estimated to directly create 1,000 local jobs at the peak of construction and 86 permanent jobs, as well as indirectly create more jobs needed to supply materials and services during the project's construction and operation. The project is estimated to directly produce $650 million in wages and $400 million in state and local taxes over its thirty-year lifecycle.

***Response**: Much of the information in these comments was included within the discussion of Noteworthy Public Benefits in the Socioeconomics section of the DEIS. These comments regarding the positive socioeconomic benefit of the proposed project have been considered by BLM in the selection of a preferred alternative, and will be considered in the decision whether or not to issue a ROW grant in the Record of Decision.*

Comment ISEGS-1-18: Solar technology is specialized. Most energy developers make promises to local communities that there will be hiring of local people, yet many energy developers usually bring people in temporarily and little benefit is provided to the local economy. Furthermore, when developers use only federal land, local economies receive fewer tax benefits. This is why a private land alternative should be considered.

***Response**: The EIS concludes that most of the construction and operations workers would be drawn from the City of Las Vegas within Clark County, Nevada, as well as parts of surrounding rural areas in San Bernardino County, California considering the project labor requirements are small compared to the size of the workforce available in the region. This information has been considered by BLM in the selection of a preferred*

alternative, and will be considered in the decision whether or not to issue a ROW grant in the Record of Decision.

Comment ISEGS-27-3: While perhaps not an issue that can be fully addressed under CEQA and NEPA requirements, the issue of cost of services from local governments would be an issue the County would pursue for projects under its jurisdiction. While the CEC may have permitting authority for this project, it does not provide local services such as emergency services or road maintenance. These are provided by the County. Local citizens and other businesses should not bear the brunt of subsidizing these costs for a for-profit operation such as this. The CEC has not fully analyzed the costs of these services to San Bernardino and Clark Counties. The County of San Bernardino will prepare its own fiscal impact analysis for this project's anticipated demand upon County services. As the CEC is well aware, the current state of the economy does not provide opportunity for local governments to provide services without recompense.

The proposed conservation of 12,000 acres of land for the desert tortoise is another economic impact to the County. Where there is no development allowed, there are no jobs and only minimal property tax or payment in-lieu of taxes (PILT). Also, while the traditional mitigation ratio approach requires vast acreages to be set aside as conservation lands, we do not see how that provides a viable habitat conservation strategy, and the resulting competition for mitigation areas could drive up land costs without increasing the effectiveness of mitigation.

It is not clear what economic loss might occur due to the impact to visual resources that may result in reduced revenues from tourism and the filming industry.

The future property tax revenue would be essentially limited to the power plant itself, as the heliostat arrays are exempt from property tax. Because the County's PILT is capped, the County will not receive the full amount it is entitled to and would otherwise receive if the land was held in private ownership. Again, the economic lost potential of the site and the mitigation lands is a socioeconomic impact not fully addressed in the DEIS.

While the project creates both construction jobs and permanent jobs, the DEIS lacks meaningful details regarding how nearly all the 90 permanent jobs will likely go to Nevada residents, which would further significantly reduce the economic benefits compared to a project located closer to San Bernardino County's more urban areas.

Comment ISEGS-27-10c: The County will further review the cost impacts to County services due to this project and we intend to come up with our own estimate of funding needed to offset the projected impacts. The California Energy Commission and the BLM should adopt policies to require developers of renewable energy projects under the agencies' jurisdiction to negotiate a formal mitigation agreement with the local jurisdiction in which the project resides.

Comment ISEGS-1-19: Turning the area into an industrial area is not consistent with a local tourism based economy. Mojave National Preserve has outstanding benefits to local economies in surrounding communities because its outstanding scenery attracts millions of visitors each year. Those visitors come to view nature and sweeping views. The cumulative impacts of surrounding this irreplaceable treasure with renewable energy facilities has the potential to drive tourism dollars away. We would like to request that BLM provide a full analysis on the potential impacts that reorganizing publicly supported desert protection measures would have on local tourism economies. Furthermore, tourism has stood the test of time. The new renewable economy that the administration is forcing upon us has not been tested for long-term economic sustainability. Because so much federal money is needed up front to make this experimental green economy work, we are worried that its potential failure will destroy the already stable tourist economy of the region. How would the construction of so many renewable projects impact the tourism of Primm and Nipton? Many visitors to the Mojave National Preserve stay in the hotels in these communities.

Comment ISEGS-6-33: The BLM should examine how sitting of large energy projects would impact private property values and quality of life for local communities, such as the Primm Golf Course and Nipton. We would like to request an analysis of the projects impacts to adjacent property owners, property values, and quality of life be addressed in the EIS.

Comment ISEGS-1-33: The BLM should examine how siting of large energy projects would impact private property values and quality of life for local communities, such as the Primm Golf Course and Nipton. We would like to request an analysis of the projects impacts to adjacent property owners, property values, and quality of life be addressed in the EIS.

***Response**: At this time, BLM does not have adequate information from San Bernardino County to substantiate its concerns regarding the project's potential to impact public services and facilities. As discussed in the FSA/DEIS Socioeconomics section, Table 8, the ISEGS project proponent is estimated to pay $3,195 in School Impact Fees to the local school district (per California Education Code, section 17620 and California Government Code, sections 65996-65997), as well as an estimated $2.2 million in annual property tax to San Bernardino County. Finally, in addition to BLM's conclusions that the proposed project would have no project-related significant adverse, direct, indirect, or cumulative impacts to police protection and emergency response services, we do not have regulatory authority to require a developer fee on behalf of San Bernardino County.*

23.0 SOIL AND WATER

23.1 Soil and Water - Surface Water/Stormwater

Comment ISEGS-6-14: Finally, EPA is also concerned about the indirect impacts to Ivanpah Dry Lake. As mentioned above, the ephemeral waters traversing the Project site originate in the Clark Mountains and drain to Ivanpah Dry Lake, a water of the United States. The DEIS fails to assess the indirect impacts to Ivanpah Dry Lake from the proposed Project. Indirect effects could include, but are not limited to: 1) changes in hydrology and sediment transport into Ivanpah Dry Lake; 2) increases in volume and velocity of polluted stormwater from impervious surfaces on the Project site; 3) decrease in water quality from the impairment of ecosystem services such as water filtration, groundwater recharge, and attenuation of floods; 4) disruption of hydrological and ecological connectivity from the Clark Mountains to Ivanpah Dry Lake; and 5) decreases in biodiversity and ecosystem stability. Reducing the scope of the project by 365 acres and, thereby, reducing potential discharges into waters should reduce the indirect effects to Ivanpah Dry Lake.

Recommendations:

- To minimize direct and indirect impacts, such as erosion, migration of channels, and local scour, do not place heliostats in washes.
- Commit to the use of natural washes, in their present location and natural form and including adequate natural buffers, for flood control to the maximum extent practicable.
- Demonstrate that downstream flows will not be disrupted due to proposed changes to any natural washes or the excavation of large amounts of sediment.
- Minimize the number of road crossings over washes in order to minimize erosion, migration of channels, and scour. Road crossings should be designed to provide adequate flow through during large storm events.
- Reduce the size of the Project by the 365 acres that are no longer needed for detention ponds in order to avoid high densities of rare plants and other environmental impacts.
- Locate facilities outside of waters. Estimate acreages or number of species protected as a result of these reduced Project size alternatives.
- Reduce the scope of the Project and discharges into waters, as described above, to reduce indirect effects to Ivanpah Dry Lake, a water of the United States.

Comment ISEGS-1-28: The proposed project site is located on an alluvial fan that acts as an "active stormwater conveyance" between the Clark Mountain Range to the west and the Ivanpah Dry Lake to the east. Widespread bajada flooding events and sheetwash deposition was noticed by surveyors. A total of 1,973 ephemeral washes were mapped on the project, 16 being "category 1= 36 to 85 feet wide." The applicant wants to build a delicate project where each mirror must be configured exactly using computer precision so that sunlight beams will hit distant tower receivers -- any

deviation could cause damage to the tower -- on an active floodwash fan with anastomosing channels that move over time unpredictably.

The applicant's proposed stormwater design and management system is a "Low-Impact Development design" which "attempts to minimize disruption to natural stormwater flow pathways." But the amount of grading would still be enormous, and does not outweigh the impacts to the land, water, washes, vegetation, wildlife, recreational use, and views…

Comment ISEGS-2-29: The FSAIDEIS 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.

Comment ISEGS-1-10: How will the many water crossings be constructed over the washes? Will reinforced concrete or gabion baskets be used? How will the design prevent the scour and washout of major asphalt access roads during storm events? Will offsite stormwater drainage be collected using a system of swales, berms, and existing ephemeral washes to control and direct stormwater through and around the ISEGS site? If so, will this be outside of the ROW? How many acres will this take up? Will separate environmental review be done for this drainage system?

Comment ISEGS-6-12: EPA is concerned about the potential impact to approximately 2,000 ephemeral water segments on the site, which could result in direct or indirect impacts to wildlife functions and values provided by 198 acres of waters of the State (at pg. 6.2-1). The Project area is located in the Ivanpah hydrologic unit of the South Lahontan Watershed. All drainage from surrounding mountains and alluvial fans collects inclosed basins in the Ivanpah Valley. Ivanpah Dry Lake, a water of the Unites States, is located approximately 2 miles east and downslope of the Project area. The Project area is located on a broad bajada that extends from the base of the Clark Mountains to the western shoreline of Ivanpah Lake. Numerous ephemeral washes occur throughout the broad, coalescing alluvial fans that convey storm water runoff from the mountains toward Ivanpah Lake. The washes range in size from small features (1-4 feet) to large broad washes over 85 feet wide (at pg. 6.2-13).

Natural washes perform a diversity of hydrologic and biogeochemical functions that directly affect the integrity and functional condition of higher-order waters downstream. Healthy ephemeral waters with characteristic plant communities control rates of sediment deposition and dissipate the energy associated with flood flows. Ephemeral washes also provide habitat for breeding, shelter, foraging, and movement of wildlife. Many plant populations are dependent on these aquatic ecosystems and adapted to their unique conditions.

According to the ISEGS DEIS, construction of the proposed Project is expected to result in direct loss of ephemeral waters on the site. In addition, the proposed Project will degrade the functions of waters through the placement of road crossings, heliostats, fencing, and diversion channels to divert flow around constructed facilities (at pg. 6.2-59). Further, a scour analysis conducted to evaluate the potential ofheliostat failure predicted the failure of more than 4,000 heliostats in a 10-year stonn alone (at pg. 6-9-28).

The SDEIS should commit to the use of natural washes, in their present location and natural form and with adequate natural buffers, for flood control to the maximum extent practicable. Because placement of heliostats would result in erosion, migration of channels and local scour, heliostats should not be placed in washes, to minimize direct and indirect impacts to the washes. The potential damage that could result from disturbance of flat-bottomed washes includes alterations to the hydrological functions that natural channels provide in arid ecosystems: adequate capacity for flood control, energy dissipation, and sediment movement, as well as impacts to valuable habitat for desert species. The SDEIS should demonstrate that downstream flows will not be disrupted due to proposed changes to any natural washes nor the excavation of large amounts of sediment.

Comment ISEGS-1-5c: On page 6.9-24 of the document, we learn more about the fragility of the mirrors: "An estimated mirror breakage rate of 0.1 mirrors per year likely much more (possibly in the thousands without mitigation and up to 50 with mitigation). The AFC [Application for Certification] states that broken mirrors would be replaced annually by one repair truck. However, the mirror repair activity would likely require several trucks. The AFC states that other repairs and security checks would be performed daily by one truck." How will the applicant and BLM insure that these broken mirrors not harm wildlife or recreationists downstream as fragments might be washed by floodwaters through the site?

Comment ISEGS-1-17d: But what surprises us most is the location of the proposal directly below a large rain catchment basin on the slopes of Clark Mountain. Did the engineers in the city understand desert alluvial deposition processes, or surficial geology and hydrology?

Researchers measured "normal" rain runoff on a fan below the Providence Mountains, just 60 km south of Ivanpah Valley in Mojave National Preserve, from 2003 to 2006. They found that several winter and summer rainstorms delivered more than 10 mm per day of rain, enough to initiate runoff, and some intense summer storms were greater

than 60 mm per hour. These redistributed sand, gravel, and organic debris. High-intensity summer rainfall could last an hour, often exceeding the infiltration rates of the soil (Miller, David M., David R. Bedford, Debra L. Hughson, Eric V. McDonald, Sarah E. Robinson, and Kevin M. Schmidt. 2009. Mapping Mojave Desert ecosystem properties with surficial geology. In, The Mojave Desert: Ecosystem Processes and Sustainability. Edited by Robert H. Webb, Lynn F. Fenstermaker, Jill S. Heaton, Debra L. Hughson, Eric V. McDonald, and David M. Miller. University of Nevada Press: Reno and Las Vegas.).

This was just over three years. Over the 50-year proposed lifespan of the ISEGS larger storms will occur, possibly as damaging as the flood that hit Furnace Creek in Death Valley National Park, and Surprise Canyon in the Panamint Mountains, California, in recent years.

This is an active sloping alluvial fan, not a stable flatland, seemingly not appropriate for a delicate heliostat array. In describing the engineering of a collector field, Romero-Alvarez and Zarza (2007:21-53) state: "Because of the large area of land required, complex algorithms are used to optimize the annual energy produced by unit of land, and heliostats must be packed as close as possible so the receiver can be small and concentration high. However, the heliostats are individual tracking reflective Fresnel segments subject to complex performance factors, which must be optimized over the hours of daylight in the year, by minimizing the cosine effect, shadowing and blocking, and receiver [light] spillage." Tracking control mechanisms continuously move the heliostats so that they focus solar radiation on the tower receiver. "During cloud passages and transients the control system must defocus the field and react to prevent damage to the receiver and tower structure" (ibid: 21-52). What if sediments from alluvial runoff tilt several heliostats in the field? Will operators be able to find and correct all heliostat deviations? How long will the plant be shut off while inspections are done after each storm and repairs are made? How much of a tilt would cause tower damage as reflected sun beams are aimed in the wrong direction?

In an investment cost breakdown of building a central receiver solar thermal power plant the heliostat field is the single most expensive part of the project, 40% of total capital costs. The power block comes next, at 32% of total (ibid:21-53). Yet, "Staff believes there are no special concerns with power plant functional reliability due to flooding (page 7.3-6).

Comment ISEGS-1-29b: The consequences of allowing flooding through the project would be too great. Looking at the quiet desert landscape it can be easy to underestimate the violence of a summer thunderstorm or El Nino winter flood. We have witnessed storm cells in Death Valley cause huge flash floods that have moved car-sized boulders down mountain canyons and destroy small buildings. The 2004 flood in Furnace Creek Wash dug out a new channel, took out the highway, and unfortunately caused the deaths of a few tourists who attempted to drive through the water loaded with moving boulders. Even floods that do not move large debris can damage structures

over time with the slow build-up of sand, gravel, stones, and logs, against fences, bending them down.

Recent paleoclimatological studies measuring high stands of lakes in desert playas and flows in desert rivers, such as the Verde in Arizona, have shown that the "statistics if extreme flows derived from twentieth century records are not representative of all hundred-year episodes of the past 1,400 years,...information of value for engineering applications as well as ecological understanding" (Redmond, Kelly T. 2009. Historic climate variability in the Mojave Desert. In, The Mojave Desert: Ecosystem Processes and Sustainability. Edited by Robert H. Webb, Lynn F. Fenstermaker, Jill S. Heaton, Debra L. Hughson, Eric V. McDonald, and David M. Miller. University of Nevada Press: Reno and Las Vegas.).

This is critical: in our lifetimes we may not have even seen the largest flood events that could occur in the desert. Historical records of rain in Ivanpah Valley cannot be used as predictors of future weather. Reinforcing heliostats will increase construction costs. The FSA/DEIS says that a "Drainage, Erosion, and Sedimentation Control Plan has been developed to mitigate the potential storm water and sediment project-related impacts. However, the calculations and assumptions used to evaluate potential storm water and sedimentation impacts are imprecise and have limitations and uncertainties associated with them. Given the uncertainty associated with the calculations, the magnitude of potential impacts that could occur cannot be determined precisely" (page 1-27). This again should be reason for the No Action alternative.

***Response**: The manner in which stormwater would affect, and be affected by the proposed project was one of the more substantial issues of discussion throughout the environmental review process, and was a major factor in the applicant's revision of the project design and stormwater management approach from the time of their original application to the time of the release of the DEIS. During this time, the applicant changed their stormwater management approach from one of active stormwater management to one favoring maintenance of natural flow pathways wherever possible. BLM provided detailed oversight of the applicant's stormwater modeling process, including reviewing and requiring modifications of the modeling methodology and assumptions, and independently conducting stormwater modeling using conservative assumptions. This process considered all of the factors made in these comments. Part of the purpose of the analysis of the Mitigated Ivanpah 3 and Modified I-15 Alternatives in the SDEIS was to evaluate alternatives that avoided the most substantial active drainage pathways on the project site.*

The results of these studies are documented within the Administrative Record, and each of the potential impacts mentioned in these comments was evaluated. The conclusions reached as a result of the extensive analysis are presented in the EIS.

The final conclusion, as documented in the EIS, was that the Low Impact Development approach, by minimizing disruption to natural flow pathways, would not adversely impact hydrology or sedimentation characteristics on the project site, or downstream of

the project site. However, the agency remained concerned about the potential for stormwater flows to damage heliostats, and as a result, developed a mitigation measure: SOIL & WATER-5 requires the development of a Stormwater Monitoring and Response Plan to monitor the site for stormwater damage (particularly to heliostats), and to take corrective actions in response to erosion that could compromise structural integrity and identified damage.

Comment ISEGS-1-11: The project area would be surrounded by security fence, which would be constructed of 8-foot tall galvanized steel chain-link, with barbed wire at the top as required. Tortoise barrier fence would also be installed, consisting of 1-inch horizontal by 2-inch vertical galvanized welded wire. The fence would be installed to a depth of 12 inches, and would extend 22 to 24 inches above the ground surface and integrated with the security fence. How will this allow the management of public lands for multiple use? Another question is how these fine-mesh tortoise fences will act as barriers to flood debris allowed to flow in washes through the project. Will tortoise fences act as dams, collecting gravel, cobbles, and branches, eventually changing the flows of these washes? Will floodwaters overbank their channels, causing damage to fences and other structures? The hydrology could become a mess here. Those of us who live in the desert know that the infrequent yet strong flash floods in the desert easily take ill conceived down fences.

Comment ISEGS-1-29c: The project could impact recreational use of Ivanpah Playa as well as tortoise habitat. We still do not understand how gravel, rocks, and woody debris will be allowed to "pass through the site in an uninterrupted manner" (page 6.9-26), when fencing around the project will include a tortoise exclusion fence consisting of 1-inch horizontal by 2-inch vertical galvanized welded wire installed to a depth of 12 inches, and extending 22 to 24 inches above the ground surface and integrated with the security fence. This will surely cause debris dams.

***Response**: BLM considered this issue in the development of the mitigation measure SOIL & WATER-5. This mitigation measure requires inspection of the fence following storms, repair of identified problems as a short-term responses, and consideration of modifying their stormwater management program in the long-term, if the system does not work.*

Comment ISEGS-1-29d: CEC/BLM may allow " design modifications to address ongoing issues. This may include construction of active storm water management diversion channels and/or detention ponds." "For activities outside of the approved right-of-way, the applicant will notify BLM and acquire environmental review and approval before field activities begin." This is unfair to the public -- if the applicant wishes to completely redesign its flood control plan for the entire project because it did not foresee the active nature of this fan, a new environmental review process should be initiated. And if giant berms, diversion channels, and other artificial flood control projects are going to be built outside of the project right-of-way, then this is just another cumulative

impact on the valley, as more public land will be graded, more tortoises moved, more rare plants destroyed.

***Response**: See Mitigation Measure LAND-2 in the DEIS. This Mitigation Measure addressed the requirement for the applicant to go outside of the fence to perform maintenance work, and specified the conditions in which such work would require additional NEPA review. This includes the construction of any additional drainage management systems. Full NEPA review of potential future activities cannot be performed at this time because the location and nature of those activities cannot be predicted.*

Comment ISEGS-1-29e: CEC/BLM require almost impossible feats of control from the project workers during operation: "Forty-eight (48) hours prior to each potential storm event, the applicant must visually observe and implement appropriate corrective action for: ...all storm water drainage areas, to identify any spills, leaks, or uncontrolled pollutant sources, ...any storm water storage and containment areas" (page 6.9-88). Workers must also collect water samples after storms and analyze their water quality and report to the Lahontan Regional Water Quality Control Board. Will the public be allowed to review these reports, since the project will be on public land?

***Response**: BLM has considered the requirement, as presented in the DEIS, and the comment. While it is true that the site area will be large, the Low-Impact Development design involves very few stormwater drainage structures, primarily within the power blocks. There will be no stormwater storage or containment areas. The number of hazardous materials storage and management areas will also be very small. Based on consideration of the actual number and locations of sites to be monitored, BLM considers that these requirements are feasible.*

23.2 Soil and Water - Groundwater

Comment ISEGS-1-3: Heliostat mirrors would be washed every two weeks on a rotational basis. Washing would utilize water accessed from the groundwater supply wells, following treatment in a water treatment system. Washing would be done using a truck mounted pressure washer, and use 42.7 acre-feet per year. But this basin has an undetermined amount of groundwater, and more wash-water may be needed, posing a risk to water resources in the area over time and taking into account the cumulative scenario of other developments proposed for Ivanpah Valley.

Comment ISEGS-1-27: In a very circuitous argument BLM and CEC conclude that impacts to the groundwater supply and quality would be "less than significant." Precipitation recharge in this basin is low: the Environmental Protection Agency, when analyzing the Ivanpah Valley Aquifer for the Coliseum Mine in the 1990s, was concerned about overdrafts from any water extractions, as the annual recharge is so small (only 800 acre-feet per year) (Reference: http://epa.gov/waste/nonhaz/industrial/special/mining/techdocs/gold/goldch3.pdf).

BLM and CEC quote two different groundwater studies from the that estimate 1,275 and 1,607 acre-feet per year of recharge, two other studies from 2000 that range from 2,845 to 5,800 afy, and a study in 2008 that estimated 2,806 afy. Conveniently, a study done by the applicant and another by CEC recently estimated a high of from 5,223 to 6,200 afy. No surprise here, those with most at stake found the most water to use. (As an aside three of the studies are missing in the references.)

Primm Valley Golf Club near the site uses 1,741 acre-feet per year, and the town of Primm, Nevada 1,470 afy, according to the FSA/DEIS (page 6.9-31). Mining uses 1,060 afy, and the town of Jean 740 afy. Already this spells trouble if you doubt that the recharge is high in the basin, but CEC and BLM use the highest estimates to claim that there is no overdraft and that pumping by the applicant will be just fine. When will the public be able to review the applicant's monitoring program to identify what changes are occurring in basin water levels?

The DEIS says: "This reduction in basin storage and water levels could translate into basin-wide impacts…. Staff believes that although the magnitude of long term potential declines cannot be predicted, the ENSR 2007 modeling results and aquifer characteristics suggest the time for basin wide water levels to decline substantially can take centuries and potential impacts during the life of the project and reasonably foreseeable projects would not be significant" (page 6.9-32). How does BLM know that groundwater lowering may not happen in a few decades?

"Based on the results of this groundwater modeling, the project's groundwater pumping is expected to cause local groundwater levels to decline over the project's 50-year life... Measurements in 2007/2008 suggest, the groundwater level in Coliseum well #1 may be below the top of the well screen, during some times of the year. Where drawdown lowers water levels below well screen elevations there is the potential for impacts due to incrustation and sedimentation of a well. Incrustation and sedimentation would result in increased maintenance costs and shortened life of the well and pump components. Because part of the well screen of Coliseum well #1 may already be exposed during current pumping, significant impacts may already be occurring" (page 6.9-34). This is too risky to allow more groundwater pumping, especially considering cumulative impacts. The project should not be approved.

Also, "Staff understands that use of the wells at the Primm Valley Golf Club has been reduced due to intrusion of brackish water that was not suitable for landscape irrigation (Broadbent 2002). The cause of the intrusion was believed to be due to pumping induced migration of saltier groundwater underlying the playa to the east" (page 6.9-37). (Broadbent and Associates, Inc. August 2, 2002. Groundwater Issues in the Ivanpah Valley, Nevada and California.). There is a concern over impacts to springs used by the local Bighorn sheep herd. In a visit in early December, 2009, we found bighorn sheep sign on a ridge trail leading down to Willow Spring at the base of the mountain, a few miles above the ISEGS project site. CEC/BLM denied any impacts would result from the

project's groundwater pumping. We think this is an assumption, as little appears to be understood of the groundwater in the area.

Comment ISEGS-6-15: The SDEIS should further describe groundwater availability for this Project and other projects within the region, as well as the uncertainty regarding potential cumulative impacts on groundwater resources. Given the potential for adverse impacts from pumping groundwater, it is important that all monitoring and mitigation information be provided to the public and decision makers. The Proposed Project would permanently eliminate over 4,000 acres of wildlife habitat. In the arid Mojave Desert, habitat and the springs are critically important for several special status species that rely on water sources and wetland vegetation communities.

Recommendations:

- EPA recommends the SDEIS clearly demonstrate whether there is sufficient groundwater for the lifetime of this Project and other reasonably foreseeable projects in the study area. Specifically, all existing and foreseeable projects identified in Tables 2 and 3 of the Cumulative Impacts Chapter should be reflected in the Soil and Water Resources Chapter Table 12 (at pg. 6.9-31) and Table 15 (at pg. 6.9-41), and the SDEIS should include estimated water use during construction and operation. We also recommend that the SDEIS address what measures would be taken, and by whom, should groundwater resources in the basin become overextended due to additional growth, continued drought, and the utilization of existing or pending water rights in the basin(s).
- The SDEIS should provide additional documentation to support the assumption that the proposed Southern Nevada Supplemental Airport will use water supplied by the Las Vegas Valley Water District. If this is not certain, estimates of water use should be included in Table 15 to ensure sufficient groundwater is available.
- To clarify the regulatory structure for protecting groundwater, we recommend the SDEIS describe the water right permitting process and the roles of all parties involved in protecting beneficial uses, human health, and the environment. This would include, for example, describing whether water right permits include special conditions; measures to mitigate direct, indirect, and cumulative impacts; and provisions for monitoring and adaptive management.
- EPA recommends the cumulative impacts analysis for groundwater include a discussion of the potential effect of future climate change on the proposed Project and groundwater development.
- EPA recommends that the ground water monitoring program be clearly defined and include a mitigation section for water resources. The ground water monitoring plan should describe the location of the monitoring wells and discuss contingency actions in the event of detection of contamination. The monitoring program should also assess the impacts to vegetation, wildlife, and aquatic resources. Funds to implement the monitoring program should be established and monitoring should be conducted on a regular basis. The FEIS, and ultimately the Record of Decision (ROD), should include a commitment to the monitoring program and funding for the program.

Comment ISEGS-28-10: The water usage is way too high and will create more problems than it solves. Water is becoming increasingly important and scarce in the Southwest and too much of this precious resource will be wasted and irretrievable through activities such as plate washing and dust control.

Comment ISEGS-2-28: 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.

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. 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.

Comment ISEGS-22-3: Water usage is of great concern. The Mojave Desert gets 2-10" of rain per year. The ground water will not recharge. The amount of water needed for this project will come by depleting ground water. The project consumes far more than a desert can support.

Comment ISEGS-1-26: We believe the DEIS underestimated the amount of water that will be needed for construction and operation of the project. Dust control during construction will often be more than estimated. What soil types are present on the site, and what is the percentage of silt and clay and components that may be windblown easily?

How much water will be used for dust control? How much water will be needed to wash off the panels? Solar developers consistently give inaccurate accounts of the amount of washing that will be necessary. Blowing dust requires the concentrated thermal unit at Kramer Junction to wash their mirrors every week. Please list the amount of acre-feet for panel washing. Will water softeners be used to prevent spotting? What chemicals are in the softeners? Will they be hazardous to public health and wildlife? Will they compact soils?

How long will water be held in any blow-down ponds associated with generator cooling? Solids and chemicals in this ponded water can enter the groundwater and affect drinking supplies. What will the effects of this water be on the aquifer?

The facilities would require pumping groundwater from a new well for "make-up water" for the steam system it evaporates from the dry-cooling process, and wash water for the heliostats, as well as potable water for domestic water needs. Approximately 16,000 gallons of water per night would be used for mirror washing (that would be almost 6 million gallons per year if trucks ran every night, 18 acre-feet, although the applicant seems to need more as elsewhere they say they need 42.6 acre-feet per year for washing). Which number is correct?

The applicant estimates project water consumption would not exceed a maximum of 100 acre-feet per year. But the applicant doubled the proposed number of mirrors on each heliostat and changed the mirror array fields from what was originally proposed, and then wanted more water. CEC and BLM were not pleased with this new demand: "Although this change increased the total surface area of all the mirrors combined by approximately 61.4 percent, the applicant has stated that the project's water demand would not exceed 100 AFY. Will more water eventually be needed, and how will BLM work with the applicant of this happens?

***Response**: The text of the FEIS, Section 4.10, has been revised to include an updated evaluation of groundwater use impacts.*

23.3 Soil and Water – Other

Comment ISEGS-1-48: Mowing of vegetation, grading, driving compaction, and flash flood damage repair will significantly impact the project site's 198 acres of ephemeral drainages...What lands will be acquired, and where? A discussion of whether mitigation lands will be one contiguous parcel or many, should be included. Mitigation lands for ephemeral streams should be considered independently of tortoise mitigation lands.

***Response**: The compensation associated with the 198 acres of ephemeral drainages is a state requirement. The exact nature of the compensation (land acquisition, improvements, or other measures) has not been identified by the state, so cannot be addressed in the EIS at this time.*

24.0 TRAFFIC

Comment ISEGS-32-1: In its January 2009 comments, CCDOA noted that the ISEGS project could adversely affect aviation operations at the SNSA or Jean Airport, and provided an expert report concluding that the ISEGS project would create glare effects that could "potentially blind a pilot during [a] critical phase of flight" (i.e., departure or final approach). Notably, FAA, too, has raised this very concern with BLM, noting, in particular, the proximity of the proposed ISEGS project to the SNSA site.

The Draft EIS recognizes that pilots and air carrier passengers may be affected by two types of glare impacts.

Comment ISEGS-32-2: First, with regard to energy intensity, the Draft EIS states that low-altitude aircraft passing over the project or within 1,000 meters of one or more of the heliostats would be exposed to solar radiation at levels that exceed the 1 kw/m2 maximum permissible exposure (MPE) limits for reflected sunlight, and that "the potential would exist for a person to experience [retinal] injury if he or she stared directly into the reflected solar radiation without blinking or looking away." (Draft EIS at 6.10-14). It then concludes that "the brightness of light reflected from heliostats would likely cause observers to avoid looking directly into the light for longer than a fraction of a second" but that "it is not conclusive to staff for observers in aircraft that personal reaction to bright light would adequately mitigate this risk of exposure that could cause retinal injury to one's eye." (Draft EIS at 6.10-16). Therefore, the Draft EIS proposes, as a mitigation measure, that the applicant prepare a Heliostat Positioning Plan in coordination with both FAA and CCDOA to avoid potential risk to health and safety.

Comment ISEGS-32-3: CCDOA supports the concept of a Heliostat Positioning Plan but requests additional information in the Final EIS that documents how this mitigation measure will effectively address potential glare impacts. For example, the Final EIS should address the following:

- How will the Plan capture available expertise on glare impacts? CCDOA recommends that the Plan be coordinated with appropriate experts such as academics with expertise in the area, and relevant user
- and professional groups, such as the Air Transport Association, Airline Pilots Association and/or the Aircraft Owners and Pilots Association.
- Who will be responsible for implementing the Plan? It is not clear from the Draft EIS who will be in charge of the Plan and how it will be implemented and enforced. If the Plan is simply drafted but never effectively employed, it will not serve any mitigating purpose. CCDOA urges that the Final EIS include implementation of the Plan as mandatory mitigation.
- How will the Plan respond to airspace changes? CCDOA recommends several reviews in addition to the scheduled updates: (1) an additional update should occur whenever FAA adopts any airspace changes in the region; (2) additional

> updates should occur annually for the first five years after the SNSA opens because of contemplated modifications in airspace procedures based upon actual operations at this new airport.

In addition, CCDOA questions the threshold adopted by BLM when considering the potential impacts of a project that will be located only 8 miles away from a planned major commercial airport. The proximity between the ISEGS project and SNSA is particularly relevant: at a distance of 8 miles, pilots will be either in final approach or the initial stages of departure from the airport. These are the two stages of flight that are most critical for aircraft safety and where the greatest potential exists for complications from external distractions. In this context, retinal injury is simply too rigid a standard. Long before a pilot suffers retinal injury, he or she will suffer temporary distraction or impaired vision that could compromise the ability to control the aircraft safely. As a result, CCDOA recommends that the proposed MPEs in the Heliostat Positioning Plan be adjusted and engineered with the advice and input from experts to ensure that the potential glare effects are reduced or mitigated to a degree that pilots do not risk distraction or temporarily impaired vision (and not just retinal injury).

Comment ISEGS-32-4: Second, the Draft EIS recognizes that pilots may be affected by the luminance/brightness of the heliostats. Specifically, the Draft states that:...

In response to this data, the Draft EIS concludes that "it is not conclusive to staff that personal reaction to bright light would adequately mitigate this risk of exposure that could cause temporary blindness and compromise safety of an observer who may be responsible to navigate an aircraft or vehicle." Therefore, the Draft EIS recommends that the Heliostat Positioning Plan be prepared to address potential luminance/ brightness concerns. (Draft EIS at 6.10-19).

While CCDOA supports the concept of a Heliostat Positioning Plan, CCDOA questions the threshold adopted by the BLM. Like retinal injury, temporary blindness is also an inappropriately high standard to use for this project. Rather, the Plan should consider the point at which the luminance/brightness of the heliostats could cause any unsafe distraction to pilots.

Comment ISEGS-32-5: In its January 2009 comments, CCDOA noted that thermal plumes from the ISEGS project could create hazards to air navigation if the concentrated heat from the project produced enough rising hot air to cause turbulence to overflying aircraft, which might impact Visual Flight Rule (Y FR) traffic in the area that currently tracks along the 1-15 corridor en route to Jean Airport...

To mitigate against these potential safety hazards, the Draft EIS recommends Condition of Certification TRANS-6, which would require the applicant to coordinate with the FAA to: (I) notify all pilots using the airspace above ISEGS of potential turbulence from thermal plumes, (2) update all applicable airspace charts to indicate that plume hazards could exist up to an altitude of 1,350 feet above the ground surface, and (3) require

pilots to avoid direct overflights of the ISEGS site at or below this altitude during daylight hours. (Draft EIS at 6.10-22).

It is not clear in the Draft EIS whether FAA has been consulted on, or concurs with, these proposed measures. The only evidence of any involvement by FAA to date is its Determinations of No Hazard for the power towers. (Draft EIS at 6.10-21, Table 10). Those determinations only address the potential hazards caused by the height of the proposed power towers. There is no evidence in the Draft EIS that FAA has reached any determination about the effect of the thermal plumes from the air cooled condensors on air navigation and on the potential turbulence hazards. Given that BLM and CEC have explicitly recognized that in certain conditions, aircraft may experience turbulence as a result of the thermal plumes from the air cooled condensors, CCDOA recommends that BLM coordinate with FAA before issuance of the Final EIS to ensure that the federal agency with expertise on aviation safety concurs that BLM's conclusions are reasonable and that BLM's proposed mitigation is feasible. Only by engaging FAA directly on this matter can BLM meet its mandate to properly evaluate the degree to which the proposed action affects public health or safety. For example, BLM could require the applicant to file additional FAA Form 7460s (Notices of Proposed Construction or Alteration) for the air cooled condensors as a means of triggering FAA review of the potential hazards caused by thermal effects. While Form 7460s are traditionally used to examine height obstructions, FAA recognizes that the form is also an appropriate method of informing the agency of other potential hazards.

Comment ISEGS-32-6: In its January 2009 comments, CCDOA noted that under the Ivanpah Valley Airport Public Lands Transfer Act (Pub. L. 106-362), Congress concluded that the shortage in airspace in the Las Vegas region was so critical that, before any land in the Ivanpah Valley could be transferred to Clark County for the purposes of constructing the SNSA, CCDOA must develop an airspace management plan that minimizes impacts to the Mojave National Preserve, and ensures aircraft access to the Las Vegas Basin under visual flight rules at a level that is equal to or better than existing access. CCDOA prepared, and the FAA Administrator certified, an Airspace Feasibility Study, accordingly. In its January 2009 comments, CCDOA requested that the BLM examine the degree to which the ISEGS project may undermine these statutory conditions.

In response, the Draft EIS notes that Public Law 106-362 creates no legal obligations on the BLM, and that "none of the lands involved in the project would be used for air traffic and are not subject to the Ivanpah Lands Act." (Draft EIS at 6.10-32). While the Ivanpah Lands Act may not be a direct source of the agencies' legal obligations, it is illustrative of the problem that must be addressed and reflects the explicit Congressional direction on the importance of protecting airspace in the vicinity of the SNSA. As noted above, the Draft EIS acknowledges that the ISEGS project will have impacts on existing and proposed aviation traffic. BLM itself acknowledges that thermal effects will affect certain flights and that pilots will experience some glare effects. Given that fact, and given Congress' expressed concern that there is limited airspace available for new flight tracks, BLM is obligated under the Federal Land Policy and Management Act to

coordinate with FAA about the ISEGS project to ensure that the Congressional mandate for the SNSA Airport is not inadvertently thwarted by components of the ISEGS project. The fact that FAA evaluated the potential for the ISEGS project to result in height hazards to air navigation (Draft ETS at 6.10-32) is not enough. As noted above, FAA has not yet opined on the potential impacts of the ISEGS project to existing and planned flight tracks.

Comment ISEGS-32-8: FAA is concerned about the potential glare and thermal plume effects from the proposed project on aircraft using the airports at or around Jean, Searchlight, and Pahrump Nevada. Further, FAA is concerned about the proposed project's affects to the proposed Southern Nevada Supplemental Airport, just northeast of the proposed facility in Nevada. Please be advised that the FAA requires information on the heights of the proposed towers to determine if the proposed towers are a hazard to air navigation. We are providing you a copy of FAA Form 7460-1, Notice of Proposed Construction or Alteration for the proponent to complete and submit to the FAA. We recommend this form be completed and filed with FAA immediately so we can evaluate the proposed facility's effect on the safe and efficient use of navigable airspace. Please provide information on how individual mirrors will be positioned when not in use or when being serviced. FAA requires this information to determine if the proposed facility would be a hazard to air navigation.

Comment ISEGS-30-5: Cumulative impacts analysis of the project's impact on aircraft overflights, and the resulting impact to Mojave National Preserve. Construction of ISEGS would include 214,000 heliostat mirrors and seven, 469-foot towers. Based on glare from heliostats, the height of the towers, and the transmission lines needed to serve the project, NPCA asks that a full examination of existing commercial, private, and military routes be made. These should be compared to proposed updated routes, and potential routes from the proposed Southern Nevada Supplemental Airport to determine the immediate and cumulative impact that noise pollution from overflights will have to multiple points within Mojave National Preserve.

Comment ISEGS-30-6b: Impact of thermal plumes. NPCA requests additional information about thermal plumes be added to the EIS. Based on the information provided, they can produce turbulence for planes flying up to 1350 feet above the project site. Will thermal plumes force airplanes to modify existing and future routes, and if so, how will this impact Mojave National Preserve?

***Response**: The potential impact of thermal plumes on low-flying aircraft was evaluated on Page 6.10-22 of the DEIS. In response to the potential impact, the DEIS proposed Mitigation Measure TRANS-6, which requires the applicant to conduct additional coordination with FAA to issue a notice to airman and update airspace charts to identify the potential hazard from thermal plume. The applicant did file FAA Form 7460-1 for features of the project that required consideration of effects to navigable air space related to height of structures, and FAA responded that the project would not have any effect. FAA does not currently consider potential effects from glare, and in consideration of this, the FSA-DEIS included a Mitigation Measure (TRANS-3) requiring*

a Heliostat Positioning Plan that would monitor and resolve complaints regarding glare effects should they arise. As an additional measure in response to these comments, BLM contacted FAA to request additional coordination. As of the time of publication of the FEIS, FAA had not responded.

Comment ISEGS-27-4a: Another traffic safety concern would be the possibility that drivers distracted by the view of the power towers could swerve or slow down and thus cause more accidents. The DEIS mentions some mitigation measures and monitoring for the power tower luminance. The County, Caltrans and SANBAG, the County's transportation commission, should be included in the receipt and review of these monitoring reports. Ideally, the CEC would require a traffic safety and emergency services committee comprised of California and Nevada agencies, and Bright Source would be required to reimburse the agencies for their costs.

***Response**: Caltrans was already listed as a recipient of these documents. The FEIS has been revised to add the County and SANBAG to the list of recipients receiving monitoring reports in accordance with mitigation measure TRANS-4.*

Comment ISEGS-27-4b: The DEIS makes an effort to predict traffic impacts but is lacking any mitigation for cumulative impacts, which are noted as significant. A typical EIR would include a detailed traffic study prepared by a traffic engineer, analyzing all trips generated, including those from employees, suppliers and tourist stops from the freeway. If this was done, perhaps mitigation measures such as offsetting work hours, on/off-ramp and street improvements could be provided. The County and SANBAG should have the opportunity to review such a traffic study and have input on required mitigation.

***Response**: The Traffic Control Plan required as part of Mitigation Measure TRANS-1 is intended to address both the direct impact of the proposed project on construction traffic, and the contribution of the proposed project to the cumulative impacts.*

Comment ISEGS-1-23: The Energy Commission/BLM proposes a "Heliostat Operating Plan" that would avoid potential for human health and safety hazards, and monitoring would be done for the first 5 years to verify operational safety and respond to any "complaints." What liability measures will be taken for recreational visitors who might accidentally get eye damage? This is a strange new hazard for hikers in Mojave National Preserve and nearby wilderness areas. How will recreational drivers on the re-routed dirt roads that access Clark Mountain, Stateline Wilderness, and Mesquite Mountain Wilderness be protected if they cross the fan slowly and a "malfunction" happens? Such a giant experimental project should not be placed so close to high-use recreational areas and major highways.

"With regard to power tower receiver safety, the highest intensity of solar radiation expected to be reflected from a single power tower receiver at its surface would be as

high as 688 kw/m2. However, as noted above, the intensity of reflected light and solar radiation diminishes as distance from the source increases. Each tower on which each power tower receiver would be installed would be approximately 140 meters tall (459 feet). Each power tower receiver would be approximately 20 meters high, therefore the bottom of each power tower receiver would be located approximately 120 meters (394 feet) from the ground surface" (page 6.10-17). Brightness of light reflected at the surface of each power tower receiver would be approximately 555,000 cd/m2. The Energy Commission/BLM says this would be too far away for highway motorists to be affected, and would be equivalent to the brightness of a 100-watt light bulb as viewed from a distance of 115 feet. The Energy Commission/BLM admits, however, that this may be a distraction to drivers.

If, after measurements are taken of the glowing receiver towers in operation, luminance exceeds 89 cd/m2 at any of the nearest roads and power plant boundaries to each north, south, east and west face of each power tower, the Energy Commission/BLM proposes mitigation measures. We want to know what mitigation measures these would be? Apparently the receivers would have to reduce any luminance below this dangerous threshold, thus reducing power plant efficiency as well.

***Response**: The EIS has analyzed and estimated the luminance, potential for retinal damage, and potential for distraction to pilots and drivers, and concludes that none of these issues would be likely to have an adverse impact. However, the EIS acknowledges that the amount of operational data on these facilities is limited, and therefore there is uncertainty associated with the impact conclusion. To address the uncertainty, BLM has developed the mitigation measures TRANS-3 and TRANS-4, to require monitoring of the potential effects. Because the current conclusion is that no adverse impacts are expected, the mitigation measures have been developed primarily for monitoring, complaint response and reporting purposes. Should the identified issues actually cause adverse impacts, then the response to those impacts would need to be developed at that time.*

Comment ISEGS-5-11: Reconfiguring ISEGS along the I-15 corridor would not present any significant human health impacts or safety hazards from glare beyond what is already anticipated by the current configuration and expected to be minimized by conditions TRANS-3 and TRANS-4, as long as the power tower receivers and I-15 facing-heliostats are located at least 1,000 meters from the highway.

The DEIS concluded that solar radiation and light reflected from the proposed heliostats (but not from the proposed power tower receivers) “could cause a significant human health and safety hazard to observers in vehicles on adjacent roadways.” 6.12-29. The CEC staff recommended two measures to “minimize to the maximum extent possible and reduce health or safety risks” from the potential impacts of glare. DEIS at 6.10-1. TRANS-3 requires ISEGS to identify 1) potential sensitive receptors to glare, including motorists, who could access locations close to the project and 2) heliostat movements and positions that could result in solar radiation reflected away from view. 6.10-16.

TRANS-3 also requires ISEGS to create a Heliostat Operating Plan designed to avoid potential human health and safety impacts from glare to sensitive receptors and to monitor – and investigate and mitigate as necessary – less-than-significant impacts. Id. TRANS-4 requires Ivanpah to verify that glare levels do not exceed a certain limit and requires glare monitoring over the life of the project. DEIS 6.10-20.

The CEC's proposed conditions would have similar impact reduction and risk minimizing effects if the Project was reconfigured on land adjacent to I-15. To address visual impacts, the CEC staff analyzed the energy potentially absorbed by the retina ("solar radiation"). DEIS at 6.10-13. The highest intensity solar radiation emitted by a single heliostat is 3.125 kw/m2 at a focal distance of 500 meters. This rate is well below what the CEC staff identified as maximum permissible exposure (MPE) of reflected sunlight for momentary exposure (10 kw/m2), but above the MPE for continuous exposure (1 kw/m2). 6.10-14. However, at 1,000 meters, the intensity of solar radiation drops to less than 1 kw/m2. Id. The applicant has also indicated that the project's optimization software would prevent the mirrors from being aimed toward the freeway, further decreasing potential impacts from the heliostats. Thus, the impacts of solar radiation from I-15 facing-heliostats located 1,000 meters from I-15 do not pose a significant risk to human health and safety. DEIS at 6.10-15.

The CEC staff also evaluated the luminance or brightness perceived by observers at the project's proposed site. The brightness of reflected light from a single heliostat is approximately 1.34 billion cd/m2 at its surface. 6.10-18. Brightness dissipates to 35 million cd/m2 at 370 meters from the heliostat surface, a temporarily blinding level if viewed directly, causing an observer to divert his eyes. Id. Nonetheless, this measurement is well below the FSA/DEIS standard for lighting of roadways signs (44 to 89 cd/m2). Id. at 17- 18. The intensity of brightness continues to diminish as the distance from the source increases; therefore, the intensity of brightness to motorists located at least 1,000 meters from I-15 facing-heliostats would be well below 35 million cd/m2. DEIS at 6.10-19.

CEC condition TRANS-4 would reduce luminance at the nearest receptor, minimizing the potential distractions to motorists caused by heliostat specular reflections and diffuse reflections from the power tower receivers. 6.10-20. TRANS-4 would provide the same mitigation to visual impacts at a reconfigured site adjacent to I-15. Luminance from both the I-15 facing-heliostats and power tower receivers at a distance of 1,000 meters from I-15 is not likely to pose human health and safety risks above that expected by the current proposed configuration. Moreover, TRANS-3 and TRANS-4 would mitigate any unavoidable luminance impacts on passing motorists.

***Response**: The potential impacts of the Modified I-15 Alternative on glare and distraction to drivers were evaluated in the SDEIS. Similar to the proposed project, BLM concludes that adverse impacts would not be likely, and if they occurred, they would be identified through the monitoring required in mitigation measure TRANS-4. However, BLM did state, in the SDEIS, that bringing the heliostats and power towers*

closer to I-15 in the Modified I-15 Alternative can only increase the potential for adverse impacts over those of the proposed project.

Comment ISEGS-32-7: The Final EIS should include FAA in the list of regulatory agencies that administer laws, ordinances, regulations or standards "that may be applicable to the proposed project." (Compare, Draft EIS at 2- 17 - 2-19). In addition, FAA's 2008 letter to Mr. George Meckfessel (attached as Exhibit B) should be included in the Table of scoping comments received. (Compare, Draft EIS at Introduction Table 1).

Response*: The FAA has been added to the list of regulatory agencies, and the list of scoping comments.*

25.0 VISUAL RESOURCES

Comment ISEGS-1-30: BLM and CEC concluded that the proposed Ivanpah Solar Electric Generating System project would result in a "substantial adverse impact to existing scenic resource values" as seen from the Ivanpah Valley and Clark Mountains. The project directly adjoins a national park unit and two designated wilderness areas, and a recreational land-sailing site of regional or greater importance on Ivanpah Playa. BLM and CEC were uncertain as to the level of discomfort or disability glare from the solar tower receivers, and were concerned about the cumulative visual effects of renewable projects on the California Desert Conservation Area and Mojave Desert as a whole…

How will the applicant mitigate the disruption of views and scenery of these popular tourist and recreation areas?

The National Park Service estimates that 576,840 people visit Mojave National Preserve, and as many as 51,915 visit Clark Mountain."The overall area of the three proposed project phases would be approximately 6.4 square miles or 4,073 acres, most of which would be occupied by mirror fields. Under the modified project plan, there would be one power tower each at Ivanpah 1 and 2, and five towers at Ivanpah 3. All proposed towers would have an overall height of approximately 459 feet (140 meters), with an additional 5 to 10 feet of FAA required lighting. Mirror array units would be approximately 12 feet (4 meters) tall.... Power towers would require day and night FAA strobe lighting. Other visually prominent structures would include steam turbine generators, air-cooled condensers, water storage tanks, a 16-acre substation, administrative and maintenance facilities, and new transmission lines and towers (described below). Of these the most prominent would be the Ivanpah 1 air-cooled condenser (approximately 92 feet in height)...; and new transmission towers" (page 6-12-12). We are unclear on the structure and size of any evaporation ponds.

"At certain times of day, diffused glare from the mirror surfaces would be prominent, similar to a lake surface in sunlight; at other times it would not, as in this simulation" (page 6-12-22). How will recreationists be affected by this glare? Will tourism suffer in Mojave National Preserve?

Considering a Key Observation Point at Umberci Mine, a popular hiking destination in Stateline Wilderness Area, the FDA/DEIS states: "Impact Significance –This strong level of overall project visual change contrast would not be compatible with the moderate overall visual sensitivity of the Ivanpah Valley, nor with the high overall visual sensitivity of the Stateline Wilderness Area in which this viewpoint is located. This level of impact is thus considered to be a significant visual impact" (page 6-12-25). No mitigation would be available. Because of this, the No Action alternative should be chosen.

The Visual Resources section of the FSA/DEIS lacks significant information about the potentially negative impacts that lighting from the facility would have on the wilderness values of the adjacent Mojave National Preserve, Stateline Wilderness Area and the Mesquite Mountains Wilderness Area. Potential impacts to recreational activities such as star gazing to visitors of these conservation areas is left out."Nighttime construction lighting, without adequate mitigation, could result in light pollution affecting the Mojave National Preserve," says the FSA/DEIS (page 6-12-27). "FAA-required aircraft safety lighting, which is anticipated to include bright strobe lighting atop the 7 project towers, could not be shielded to prevent upwardly directed light" (page 6.12-30). The FSA/DEIS underestimates how many Mojave National Preserve visitors stay in Primm hotels. We also think more analysis is needed on how the project would affect the viewscape of Nipton, a popular tourist hotel on the edge of Mojave National Preserve.

Comment ISEGS-21-3: The FSA notes that impacts to visual resources cannot be mitigated. The largely-pristine Ivanpah Valley will never be the same if this project is constructed. Views from the New York and Clark Mountains in the Mojave National Preserve, and the Stateline and Mesquite Wilderness Areas will be forever altered by the Ivanpah SEGS.

Comment ISEGS-8-15: Visual resources are important public resources identified in both FLPMA and the CDCA Plan. The Clark Mountains, part of the Mojave National Preserve, rise to almost 8,000 feet from the Ivanpah Valley and view of the mountains from the valley will be marred by the ISEGS project’s power towers, each rising to 459 feet above the valley and array of 428,000 mirrors. Scenic views from two wilderness areas (Mesquite and Stateline) will also be adversely affected. Hundreds of thousands of visitors pass through the Ivanpah Valley annually. While most of these simply pass through along the major highways, many visitors do stop to visit, use and enjoy the Ivanpah Valley’s public lands, Mojave National Preserve, Wilderness Areas, and recreation areas. The proposed project will significantly impact visual resources for these visitors. In the FSA/DEIS the BLM has failed to identify alternatives or mitigation measures that will avoid these impacts other than the “no action” alternative.

***Response**: As stated in the comments, the EIS states that direct adverse impacts to visual resources will occur, and cannot be mitigated. This information has been considered by BLM in the selection of a preferred alternative in the FEIS, and will be considered in the decision whether or not to authorize the ROW grant in the Record of Decision.*

Comment ISEGS-9-13: Visual Resources, Page 6.12-29,-30 and -42 - These pages state that "[a]ccording to comments of National Parks Conservation Association, the Mojave National Preserve contains some of the most pristine night sky views in the continental United States, and new artificial lighting may represent a deterioration of that resource." These statements go to say that" [s]taff is not aware of specific thresholds by which a significant light pollution impact may be defined." However, the DEIS concludes that with mitigation, downward aiming of operational lights and the seven new aircraft safety lights on top of the receiver towers, night lighting of the project… " would not likely constitute a significant impact ."

Statements made in this section of the DEIS regarding lack of impact, yet stating that "staff is not aware of specific thresholds by which a significant light pollution impact may be defined" are conflicting. The DEIS needs to adequately assess impacts on the dark night skies, nocturnal species, and visiting public to Mojave National Preserve.

Comment ISEGS-30-9: Light pollution. How will light pollution from ISEGS diminish the night sky viewing from the Clark Mountain exclave, and form other locations within Mojave National Preserve?

***Response**: The text in the FEIS regarding the impact of night-lighting has been revised.*

Comment ISEGS-9-14: Decommissioning Impacts, Page 6.12-30 should include specific reference to appurtenant project features including transmission and distribution lines, and telecommunication structures.

***Response**: The text in the FEIS has been revised in response to this comment.*

26.0 WILD HORSES AND BURROS

Comment ISEGS-28-1: The current proposal is to install a Solar Power Plant within the Clark Mountain Herd Area, a Congressional dedicated habitat set aside for the preservation and protection of wild burros “where presently found” in 1971 after the passage of the Wild Free Roaming Horse & Burro Act.

The Clark Mountain burros historic Herd Area was originally designated as233,370 acres. Through BLM land use decisions and HMA designation, only 75,349 acres were deemed suitable for longterm management, a loss of 158,021 acres of habitat.

The Clark Mountain burros were one of the oldest and most unique wild burro herds in America. Living in relative isolation for four centuries, their genetic tests revealed the herd had a “high proportion of rare variants” based on genetic tests performed by leading genetics Dr. Gus Cothrane at the behest of the National Wild Horse & Burro Program on wild herds across the West.

In 1994, with the passage of the California Desert Protection Act (CDPA), the burros only perennial water source was transferred to National Park Service (NPS) through the creation of the Mojave National Preserve. NPS then issued a General Management Plan declaring a zero burro management policy for the Clark Mountain wild burros.

Comment ISEGS-28-2: No records can be found to determine if BLM initiated consultation with NPS in order to develop a Memorandum of Understanding (MOU) so that both agencies may fulfill their respective mission statements and agency objectives or that NPS ever considered the request of Senator Feinstein to implement management plans to preserve and protect the Clark Mountain wild burros found within the Mojave National Preserve.

In 2002, BLM signed the Record of Decision for the Northern and Eastern Mojave Desert Management Plan (NEMO), an amendment to the 1980 Bureau of Land Management California Desert Conservation Area (CDCA) Plan.

During the planning process of NEMO, five Alternatives were analyzed within the Draft Environmental Impact Statement, four of which continued to manage federally protected wild burros as per PL 92-195, the Wild Free-Roaming Horse and Burro Act (WFRHBA) including the Preferred Alternative.

Also included within the Alternative analyzed were upward adjustments of wild burro AML in the Clark Mountain Herd Management Area, supplying alternative water sources on public lands, modifying existing HMA boundaries to preserve and protect both wild burros and desert tortoise and initiating a five year carrying capacity range analysis.

One other Herd Management Area was also analyzed within the NEMO planning process, that being the Chicago Valley HMA. Prior to BLM issuing the NEMO ROD, the Appropriate Management Level for wild horses was 28 and wild burros was 28 in the Chicago Valley HMA.

Comment ISEGS-28-3: Only two management actions were analyzed within the Alternatives presented for the Chicago Valley HMA, these being, No Action, with continued management as set forth in the CDCA and a second Alternative that proposed to reduce AMLs of wild horses from 28 to 12 and reducing AMLs for wild burros from 28 to 0.

The Alternatives presented within the NEMO DEIS indicate a wide variety of management options and mitigation measures were at BLMs disposal in order to

continue to be in conformance with federal laws mandating wild horses and burros preservation and protection in self-sustaining herds on public lands administered by the BLM as per the WFRHWA.

Additionally, BLM regulations regarding land use plans require conformance with existing laws such as the WFRHBA within their existing framework; failure for land use plans to conform with pre-existing laws nullifies the decisions issued by agencies overseeing these plans.

Comment ISEGS-28-4: Despite these facts and without sufficient legal authority to do so, BLM CHOOSE to completely eliminate all federally protected wild burros from Congressionally dedicated and federally designated critical habitat set aside on public lands deemed necessary to insure their preservation and protection.
On August 5th, 2009, in Colorado Wild Horse and Burro Coalition, Inc. vs. Secretary Salazar (See Attachment II), a Memorandum Opinion was issued by Judge Collyer, which stated,…

The Secretary of the Interior and BLM had overstepped their authority by issuing "zero AMLs" for federally protected habitat and herds by declaring every animal in the Clark Mountain Herd Area as "excessive" with no data to support the issuance of the 2002 NEMO ROD. The Wild Free-Roaming Horse & Burro Act provides no authority to issue a "zero AML" and/or remove all or any "non-excessive" wild horses and burros from federally designated Herd Areas.

This ruling is especially pertinent to BLM managed lands that have issued zero AMLs for wild burro herds such as the Clark Mountain and Chicago Valley Herd Areas as a federal court has deemed the BLMs decision of a "zero" population for animals that Congress and federal law obviously intended to protect within their federally designated and protected habitat is being done without the appropriate federal authority to issue such a decision or implement such an action.

Comment ISEGS-28-5: Therefore, though the 2002 NEMO decision had 4 out of 5 alternatives that were capable being in conformance with the Wild Free-Roaming Horse and Burro Act by providing mitigation measures to preserve and protect them in balance with other uses. BLM demonstrated an abusive of authority and discretion by arbitrarily choosing an Alternative to issue "zero" AMLs for the Clark Mountain burros, even though lawful Alternatives were available.

A land use plan arbitrarily and capriciously authorized "zero" wild burros even though Alternatives presented in the NEMO Amendment indicated that there were mitigation measures available to BLM to utilize to find an appropriate number of wild populations that could exist in a thriving natural ecological balance with other uses. BLM used no data to support this decision and therefore, the land use plan must be revisited and amended to incorporate, or should I say, re-incorporate the original intent and foundation of federal law requiring the Secretary of the Interior to exercise their

discretion in ways that both preserve and protect these irreplaceable resources for the benefit and future enjoyment of the American public within the thriving natural ecological balance and multiple use relationship for public lands. The test as to appropriate wild horse population levels is whether such levels will achieve and maintain a thriving ecological balance on the public lands. Nowhere in the law or regulations is the BLM required to maintain any specific number of animals or to maintain populations in the number of animals existing at any particular time Dahl v. Clark, supra, at 595. A determination that removal is warranted must be based on research and analysis, and on monitoring programs, which include studies of grazing utilization, trends in range conditions, actual use, and climactic factors...

Furthermore, BLM records of rangeland health surveys prior to 2002 indicated no rangeland deterioration was noted at the prior AMLs within the Clark Mountain HMA, then established at 44 wild burros. Also, no current data or rangeland surveys prior to the 2002 NEMO amendment and decision were conducted or utilized in support of this decision.

Comment ISEGS-28-6: In the Environmental Assessment (CA-690-EA04-27) issued by the Needles Field Office, the BLM attempted to imply that the total elimination of all wild burros within the Clark Mountain Herd Area was required to conform to initiate measures for protection and necessary for the recovery of the Desert Tortoise within the Ivanpah area.

With respect to noted impacts by wild burros to desert tortoise, no data, viable information or studies were done within the Clark Mountain area regarding either their impacts to rangeland health or their affects on desert tortoise whatsoever.

In 2005, U.S Geological Survey (USGS) issued a report titled, “Threats to Desert Tortoise Populations: A Critical Review of the Literature”. Only one paragraph was included regarding wild horses and/or burros impacts on the threatened desert tortoise found on page 57...

As it clearly states, USGS could find NO PUBLISHED STUDIES TO SUPPORT WILD BURROS POSE A THREAT TO DESERT TORTOISE! Additionally, even the scant suggestions of what their impacts might be was determined as speculative only...

On November 30th, 2007, U.S. Fish & Wildlife issued an “Amendment to the Biological Opinion for the California Desert Conservation Area Plan [West Mojave Plan] (6840(P) CA-063.50) (1-8-03-F-58) on the Desert Tortoise within the Mojave desert and Clark Mountain area. This new information needs to be evaluated and included in a new Herd Management Area Plan and appropriate management level amendment. For example, USFWS allowed percentages of annual “incidental take” within the livestock allotments located within or near the Clark Mountain wild burro Herd Area and Desert Tortoise habitat...

This determination most likely applies equally to wild burro herds, who have been noted to be much more observant and aware of the surrounding environment than domestic livestock or even horses due to their historic and continued use in high, steep and treacherous terrain based on their impeccable footing in these environments.

Comment ISEGS-28-7: No records can be found of any number of desert tortoise found affected by wild burro herds living within the Clark Mountain Herd Area. The DOI, USFWS or BLM provided no evaluation to determine if wild burro herds affect would conform to similar "incidental take" allowed percentages as has been allowed with livestock grazing in order to preserve and protect their populations and habitat, either before or after issuing the "zero AML" decision or since the updated report came out...

Obviously, no scientific data exists to support the DOI/BLMs contention that issuing a zero AML for the Clark Mountain wild burros was necessary in order to protect Desert Tortoise occurring in the area.

On June 1, 2009, California State Wild Horse and Burro Lead Amy Dumas reported a remaining population of approximately 60 wild burros within the Clark Mountain area (per.com. via email).

On August 25, 2009, Laura Cunningham, a Desert Ecologist and member of Basin and Range Watch issued a statement of range conditions in the Ivanpah Valley in the vicinity of the Clark Mountain Herd Area based on surveys conducted in the area between February 11 and August 12, 2009. (See Attachment III)

Ms. Cunningham noted that in areas with signs of wild burros such as visual observations, burro tracks or dung, only one out of ten grass bunches appeared to be utilized with both browsing and trampling of ground appearing light. Also noted were heavy trampling and evident overgrazing in the area along I-15 in the lower valley around a corral and old water tank-trough. No burro signs were seen in this part of the surveyed area. Based on Ms. Cunningham's expertise as a Desert Ecologist and her direct observations of impacts by both cattle and wild burros occurring in the areas surveyed, she issued the independent recommendation that the cattle allotment should be retired due to apparently heavy use in places while wild burros should continue to be allowed.

Comment ISEGS-28-8: This independent analysis re-affirms the consistently demonstrated evidence and data that a wild burro herd of approximately 60 animals in their Congressionally dedicated habitat known as the Clark Mountain Herd Area poses no threats to rangeland health values, risks no deterioration of the range associated with overpopulation of wild burros or even makes significant enough impacts to ecosystem health that may pose even a potential threat to the Desert Tortoise populations in the area...

By the standards set forth in the NEMO ROD, BLM must go back and fix the fatally flawed management plans that issued a decision to "manage" for zero wild burros in the

Clark Mountain Herd Area as this decision exceeded their authority and has no legal support or basis. A federal court has explicitly determined that land use plan decisions issued by BLM that attempt to authorize a population goal of "zero" by declaring any animal in their protected habitat as "excess" without providing proper documentation that determine how they reached this conclusion, such as has been issued for the Clark Mountain or Chicago Valley wild burros, is unsupported by, and in violation of, current federal law and exceeds the authority granted to the Secretary of the Interior by Congress. Removals of wild burro populations to conform to a fatally flawed land use plan to achieve the illegal number of zero must be remedied via appropriate land use plan amendments, current population inventory, rangeland health data and related issues to determine the appropriate amount of wild burros to be protected and preserved within their federally designated habitat.

Comment ISEGS-28-9: In 2008, a Summary of Conclusions from a document titled, Wild Horses and Burros, was prepared by Robert Dover regarding the joint analysis between BLM and the Energy Commission regarding the impacts of the proposed Ivanpah Electric Generating System. This document can be found online at: http://www.energy.ca.gov/2008publications/CEC-7002008013/FSA/27_Ivanpah%20Horses%20and%20Burros.pdf.

Within it, it clearly states that the remaining wild burros in the Clark Mountain Herd Area are to be protected from harassment or injury by the provisions of the Wild Free-Roaming Horse & Burro Act. The document continues with various analysis and mitigation measures to be put forth to accomplish this aim.

As such, it is apparent the whole of the law is still applicable to the wild burros remaining in the Clark Mountain area and any actions are subject to conformance with that law.

With specific respect to the Clark Mountain Herd Area and the handful of remaining Clark Mountain burros still under pending removal orders issued by the Needles Field Office Record of Decision and Finding of No Significant Impact, CA-690-EA04-27, any attempt to remove these remaining burros via any method, whether through helicopters, other motorized vehicles or alternative methods will be in violation of federal law.

Comment ISEGS-1-49: The Clark Mountain Wild Burro Herd represents a genetically distinct population from a region of Spain that has been historically traced to this area. Wild Horse and Burro enthusiasts are concerned that this herd will be negatively impacted by the project. Many recreationists come to view this herd, and BLM should consider managing a small herd for its unique heritage and viewing opportunities. Cumulative impacts on burros may result from the combination of this proposed project with other current and reasonably foreseeable future land uses, including other solar energy projects.

Comment ISEGS-26-1: Cattle tracks were seen fairly commonly on the fan and in sandy dry washes in February and April, with a few burro tracks as well. Cattle tracks

were more common. On April 5 a single burro was sighted near the small limestone hill on the fan, in creosote-Mojave yucca habitat. Active trails with burro tracks, were present in the area, but not numerous. Another single burro was seen June 7 along Powerline Road in the northern edge of the valley, outside the ISEGS site, within 5 miles of Primm. Dung was common next to Primm, and burro tracks fairly common along the dirt roads here. Both burros seen were very light-colored, whitish-gray.

Response: *The comments regarding other actions associated with burros in the Clark Mountain Herd Management Area are appreciated. The purpose of the EIS was to evaluate the specific impact of the proposed ISEGS project on the burros in the area. However, other management decisions regarding this herd are outside of the scope of this project-specific EIS.*

APPENDIX A-2
IVANPAH SOLAR ELECTRIC GENERATING SYSTEM
SUMMARY OF PUBLIC AND AGENCY COMMENTS ON SUPPLEMENTAL DRAFT ENVIRONMENTAL IMPACT STATEMENT (SDEIS) AND AGENCY RESPONSES
JULY 2010

Key to Commenters

Commentor	ID #	Affiliation
Venessa Vasquez	1	Californians for Alternatives to Toxics
John Valenzuela	2	Chairman of San Fernando Band of Mission Indians
Greg Holms	3	Department of Toxic Substances Control
Rick Meyers	4	Concerned Private Citizen
Mass Mailing	5	
Mass Mailing	6	
Steve De Young	7	BrightSource Energy
Lisa T. Belenky	8	Senior Attorney; Center for Biological Diversity
Derek Walker	9	Director, California Climate Initiative
Johanna H. Wald	10	Senior Attorney, National Resources Defense Council
Gloria Smith	11	Senior Attorney, Sierra Club
Laura Wisland	12	Clean Energy Analyst; Union of Concerned Scientists
Michael J. Connor	13	California Director; Western Watersheds Project
Dan Adler	14	California Clean Energy Fund
Lisa T. Belenky	15	Senior Attorney; Center for Biological Diversity
Teresa R. Motley	16	Airport Planning Manager; Department of Aviation
George J. Turnbull	17	Pacific West Region Nation Park Service
David Lamfrom	18	National Parks Conservation Association
Kim Delfino	19	California Program Director; Defenders of Wildlife
Kathleen M. Goforth	20	Manager, Environmental Review Office; USEPA

INTRODUCTION

The Supplemental Draft Environmental Impact Statement (SDEIS) for the Ivanpah Solar Electric Generating System (Ivanpah SEGS) project was published in April 2010, and the public comment period expired on June 1, 2010. The following sections have organized the comments into categories, in order to facilitate technical review, development of responses, and, where needed, revision to the text in the Final EIS.

1.0 GENERAL COMMENTS

1.1 General Support for Project

Comment Supp-5-1: As a member of the *Plumbers, Pipefitters, and Refrigeration Local Union No. 364*, I would like to pledge my support to Brightsource Energy's Ivanpah Solar Energy Project being proposed in San Bernardino County. This project would be very beneficial to the region's economy.

It is imperative that we continue to push for the green development in the Mojave Desert and support renewable energy to make the most of great solar opportunities.

Even with the benefits this project will bring, it seems there is always some obstacle standing in their way. I cannot imagine a better place than the Mojave Desert to build a project of this size because of the amount of inhabited land and the large supply of sunlight in the desert.

The economic and environmental benefits this project could bring to the desert and to the region would be astronomical, and could go a long way towards reversing the economic downturn and surge in unemployment that has hit this area in the past few years.

Please don't let an opportunity like Ivanpah slip away.

Comment Supp-5-2: I am writing this letter to reinforce my support for BrightSource Energy's Solar Electric Generating System.

In terms of economic growth, job creation and local revenue enhancement, this is a rare opportunity that cannot be missed.

Economic indicators suggest that the Ivanpah Solar Project will generate millions of dollars each year in new property tax revenue, which will have a direct and positive impact on our local economy.

Other benefits from this project not to ho unmentioned are the thousand jobs that will be created during construction phase and the outfitted workforce that would be employed once the plant was fully operational.

The High Desert region cannot lose these jobs. This kind of large-scale economic stimulus will set the stage to ensure lasting prosperity for future generations.

Please approve the Ivanpah Solar Energy Generating System.

Comment Supp-6-1: The comments represent a mass mailing all in support of the ISEGS project.

Comment Supp-9-1: We are writing to underscore the importance of the current review by the California Energy Commission ("CEC") and the U.S. Bureau of Land Management ("BLM") of BrightSource Energy's Ivanpah Solar Electric Generating System ("ISEGs"). This project, which would on its own double the solar thermal energy output in the U.S., can be a vital step in building the clean energy infrastructure for the nation that is needed to combat global warming, reduce criteria air emissions and lessen our dependence on the foreign oil. Climate change poses the single greatest threat of our age, and bringing low-carbon solutions like renewable energy to scale, and at a reasonable cost, is imperative.

EDF understands that the review process is ongoing and urges the agencies to work with stakeholders to develop extremely robust and aggressive mitigation measures. Should acceptable and transparent mitigation measures be developed and enacted, EDF considers the approval of the Ivanpah project a priority.

In addition to the boost in solar thermal capacity that this project would bring, it will also be a critical shot in the arm for the local economy, creating jobs that are part of the clean economic future in one of the most economically disadvantaged parts of the country.

EDF believes that developing our clean energy infrastructure is vital for our nation's future. A consensus oriented stakeholder review process can greatly expand our capacity to understand environmental impacts and benefits of the Ivanpah and other similar projects, all of which have significant effects on the surrounding natural resources. With robust and aggressive mitigation measures in place, ultimate approval by BLM and CEC will signal that we can and will achieve our renewable energy goals in an environmentally-responsible manner, while reinvigorating local economies and providing green, sustainable jobs.

Comment Supp-12-1: The Union of Concerned Scientists (“UCS”) is writing to express support for the development of clean energy infrastructure, including large-scale solar electricity generation resources, as long as rigorous review and study show that environmental impacts can be sufficiently mitigated or avoided. UCS believes that the development of large-scale solar electricity generation resources, like BrightSource Energy’s Ivanpah Solar Electric Generating System (“ISEGs”), should be approved if resource agencies are able to work with stakeholders to successfully develop robust and aggressive mitigation measures.

UCS believes that with proper siting, careful design, comprehensive study, monitoring, and mitigation, solar thermal electricity generation can and must play a significant role in California's electricity system. UCS understands that the review of this project's impacts and appropriate mitigation measures are still ongoing. UCS therefore encourages the stakeholders to work together to develop acceptable, effective, and transparent mitigation measures, in order to allow for the approval of this project.

Comment Supp-14-1: This project is a vital step in building the clean energy infrastructure for the nation that is needed to combat global warming, reduce criteria air emissions and lessen our dependence on the foreign and other fossil fuels that have caused such great harm to the environment. It will also bring desperately-needed green jobs to one of the most economically-blighted areas of the country, providing training and green job experience that will help sustain the local economy for years to come. The mitigated project design BrightSource proposed in February 2010 strikes an appropriate balance, providing a strongly positive net environmental benefit while minimizing any negative impacts, and we urge you to approve that design for the project.

Comment Supp-14-2: Concerns have been raised regarding the location of the site, particularly with respect to desert tortoise habitat. We strongly support robust mitigation measures to ensure that there is a net benefit to desert tortoise, and that the overall environmental impact of this project is positive. With robust mitigation efforts in place, we feel that on balance, the benefits of this project far outweigh any negative impacts. It is very important that we do not delay the critically-important progress of renewable energy, which is needed to protect the broader desert and its species from the devastating effects of climate change. It is equally important that the lessons learned- not just in siting and environmental assessment, but in best construction and operation practices- are captured so that the progress of renewable energy is accompanied by continuous environmental improvement in all of its aspects. We are dedicated to helping ensure that the net benefit of renewable energy increases through reduction in negative environmental impacts to the minimum necessary.

BrightSource's Ivanpah project represents a key milestone for the nation's renewable energy future. The BLM and CEC's approval of the ISEGS project will illustrate the importance of this and similar projects to meeting the climate change challenge. It will also signal that we can and will achieve our renewable energy goals in an environmentally responsible manner, while reinvigorating local economies and providing green, sustainable jobs. We urge you to promptly approve this project.

Response: *The comments in support of the proposed project are appreciated. These comments were considered in the selection of the preferred alternative in the FEIS, and will be considered in the decision whether or not to issue a right-of-way grant in the Record of Decision.*

2.0 ALTERNATIVES

2.1 Comments on Location of Proposed Project on Undeveloped Land

Comment Supp-13-1: The proposed power plant project would be located on relatively undisturbed public lands in California that are habitat for the state and federally listed desert tortoise, and that provide habitat for rare plant species and communities. In the initial Draft EIS, the BLM considered only two alternatives, the proposed action and no action. The Supplemental Draft EIS (SDEIS) analyzes two additional alternatives to the proposed action; a "Mitigated Ivanpah 3 Alternative" and a "Modified I-15 Alternative". These two additional alternatives are for projects with slightly reduced footprints (about 3,564 acres) compared to the original proposed action (4,064 acres). The Mitigated Ivanpah 3 Alternative would be located entirely within the same property boundaries as the proposed project. In theModified I-15 Alternative the Ivanpah 3 unit would be moved from north end of the project to south of the project closer to Interstate-15.

In the DEIS and now in the SDEIS, the BLM has failed to consider and analyze alternatives that would allow the project to proceed but would avoid impacts to desert tortoise, rare plants and other scarce and sensitive resources. The two alternatives reviewed in the SDEIS will have similar significant direct, indirect and cumulative impacts on desert tortoises, rare plants, and visual resources as the proposed action. The BLM failed to consider any alternatives that would avoid these resources but would allow the project to proceed. The BLM has failed to take NEPA's requisite hard look at the environmental effects of each alternative. Accordingly, the BLM should consider issuing a new supplemental NEPA document prior to developing a final EIS.

Comment Supp-8-1: While the Supplemental DEIS provides two additional alternatives – the reduced acreage (or "Mitigated Ivanpah 3"), and the I-15 alternative, the Supplemental DEIS still 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 on disturbed lands or lands that have few rare species conflicts, which the BLM has still failed to adequately address in the Supplemental 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 adequately address these and other issues detailed below and re-circulate another Supplemental DEIS or a revised DEIS for public review and comment.

Response: *BLM appreciates the concerns raised regarding the potential authorization of solar energy developments on previously undeveloped sites.*

BLM, the Department of Energy (DOE), and the State of California have all identified commercial-scale solar energy as an integral component of a future energy system which is sustainable, while reducing the emission of greenhouse gases. BLM acknowledges that locating commercial-scale solar energy facilities only on previously disturbed sites (public or private) would be desirable, and is following the developments

associated with the recent initiative between EPA and the National Renewable Energy Laboratory (NREL) to encourage this type of renewable energy development. However, even with new federal initiatives to evaluate development of previously contaminated sites, BLM is still mandated to consider ROW applications on undisturbed public land. Also, given the large land area requirements and difficulty in acquisition of small land parcels, large-scale development on previously contaminated lands is potentially not feasible in the same time frame as that of the proposed project. Therefore, to access the innumerable benefits of solar energy, sites must be identified which meet a variety of technical and economic criteria (such as high solarity and particular slope and grade), and which also minimize impacts to environmental resources. Ultimately, this process requires consideration of sites that are either undeveloped, or which have limited development.

While BLM agrees that biological resources would be impacted in the proposed project, Mitigated Ivanpah 3 Alternative, and Modified I-15 Alternative areas, we also acknowledge the long history of human use and development of the Ivanpah Valley area, and the project site. The project site itself is currently the location of a grazing lease, and is traversed by transmission lines, a natural gas pipeline, and roads. The site is directly adjacent to a golf course. Within a few miles of the project site are an interstate highway, casino development, a natural gas power plant, and waste disposal facilities for the Molycorp mine. As part of its mandate to balance multiple use of public lands with environmental protection, BLM must consider all of these issues, and they are all presented as part of the analysis in the EIS.

2.2 Comments on the Range of Alternatives Considered

Comment Supp 13-15: In summary, the BLM has failed to analyze a reasonable range of alternatives in the SDEIS and DEIS, has failed to analyze alternatives that would avoid significant direct, indirect and cumulative effects on desert tortoise, special status species, rare plants, and visual resources, and that would comply with the governing CDCA Plan, and has failed to take a hard look at the environmental impacts of the alternatives. The BLM should address these deficiencies in a second supplemental DEIS.

Comment Supp-19-1: The Ivanpah SEGS is a sizable project located in the Northern Ivanpah Valley which has increased from a 3,400-acre footprint to a 4,065 acre footprint that includes three solar concentrating thermal power plants, associated buildings, roads, a gas and water pipeline, new groundwater pumping, and a reconductored transmission line. It could entail loss of habitat and displacement for many wildlife species, including the state and federally threatened desert tortoise, special-status mammals and birds, and numerous rare plant species. The Final Staff Assessment/Draft Environmental Impact statement ("FSA/DEIS") for this project only analyzed the "project" and "no-project" alternatives under the National Environmental Policy Act ("NEPA"). Although the DSEIS analyzes two alternatives in depth – the Mitigated Ivanpah 3 and Modified I-15 alternatives – it still falls far short of NEPA's requirement to include all reasonable alternatives, which must be rigorously explored

and objectively evaluated, as well as to include reasonable alternatives not necessarily within the jurisdiction of the lead agency. 50 C.F.R. § 1502.14(a)(c).

Comment Supp-19-3: Second, BLM itself alludes to the fact that the project's impacts may be greater than originally thought and the mitigation measures potentially inadequate: "the public comments on the DEIS provided BLM with additional information regarding the presence of resources and expected effectiveness of mitigation measures associated with the northern 433-acre portion of the proposed project area." DSEIS, page 1. Indeed, the additional information on resources and expected effectiveness of mitigation on the northern 433 acres should have triggered not only a discussion of reconfiguration alternatives, but of site alternatives as well. Site alternatives are measures that may result in avoiding or reducing adverse impacts from a project and should be discussed at every step of the NEPA analysis.

Comment Supp-7-3: The SDEIS and DEIS together more than meet the requirement for federal agencies to consider all reasonable alternatives to a proposed action. See, 40 C.F.R. § 1502.14(a); 43 C.F.R. § 46.420(c); Council on Environmental Quality's 40 Frequently Asked Questions (40 FAQs), 46 Fed. Reg. 18026, #1a, 1b (1981); *see also Westlands Water Dist. v. U.S. Dep't of Interior*, 376 F.3d 853, 868 (9th Cir. 2004) *quoting Morongo Band of Mission Indians v. Fed. Aviation Admin.*, 161 F.3d 569, 575 (9th Cir. 1998). With these two documents the BLM has rigorously explored and objectively evaluated all reasonable alternatives. NEPA requires no more. 43 C.F.R. § 46.420(c); *see generally* BLM Handbook, § 6.6. Under the rule of reason, the range of alternatives included in the DEIS and SDEIS is more than adequate, and the alternatives considered are reasonable when compared to the purpose and need of the proposed federal action.

Response: *In Section 4 of the DEIS, BLM conducted a screening-level evaluation of 23 potential alternatives to the proposed action, including alternative locations, configurations, and technologies, including several alternatives (Private Land, Distributed Generation) that are not within BLM's scope of authority. The evaluation of several of these alternatives included not only a determination of their technical and economic feasibility, but a resource-by-resource evaluation of their potential impacts. Although only the proposed action and No Action Alternative were carried into the resource sections for a more detailed analysis, the evaluation of potential alternatives to identify those which were technical and economically feasible, and which could have a reduced magnitude of environmental impacts, exceeded the level of analysis usually included in a screening-level analysis.*

Following review of the public comments, BLM reviewed the rationale presented in Section 4 of the DEIS for eliminating these 23 alternatives from detailed evaluation, and, for 21 of them, concluded that the rationale for their elimination from detailed analysis was explicitly provided, and was sound. However, the agency determined that two alternatives which had been analyzed but eliminated from further evaluation, the I-15 Alternative and the Reduced Acreage Alternative, were potentially feasible, and therefore merited more detailed evaluation. As a result, BLM published the SDEIS on April 16. The SDEIS presented a detailed, resource-by-resource evaluation of a version

of the I-15 Alternative (called the Modified I-15 Alternative), and a reduced acreage alternative (called the Mitigated Ivanpah 3 Alternative).

Finally, in the review of the public comments, BLM noted two additional alternatives (Ivanpah Playa and Phased Approval) that were not originally included in the screening analysis in Section 4 of the DEIS. Because both of these alternatives recommended in the public comments have merit, they have been added to the revised screening analysis in Section 3 of the FEIS.

2.3 Comments on Other Potential Alternatives

Private Land:

Comment Supp-19-1: A *full* spectrum of alternatives for the Ivanpah project must include at least one private land site alternative, as suggested by Defenders in comments submitted on the FSA/DEIS. Unfortunately, the BLM summarily dismissed the Harper Lake Alternative, the only private land site alternative identified in the FSA/DEIS. *See* FSA/DEIS, page 4-20. Although the stated purpose of the DSEIS is to respond to public comments regarding the "presence of resources and expected effectiveness of mitigation measures associated with the northern 433-acre portion of the proposed project area" (*see* DSEIS, page 1), BLM inexplicably fails to include even a single private land site alternative.

Comment Supp-19-2: The DEIS failed to analyze a reasonable range of alternatives, narrowly defining the project's objectives in such a way as to preclude assessment of many viable alternatives, including those on private and degraded land. The DSEIS amends the purpose and need statement by removing the 400 MW capacity language. DSEIS, page 7. This change is necessary to facilitate the two reconfiguration alternatives and any other alternatives requiring a reduction in generating capacity. However, BLM continues to constrain the project by including development of renewable energy resources on public lands as part of the need for the project. DSEIS, page 8. This concept directly contradicts California's Renewable Energy Transmission Initiative's stated goal of developing renewable energy resources on private degraded lands (see RETI Phase 2A Final Report, page 2-33).

BLM must evaluate a reasonable range of alternatives, including a private land site alternative. 50 C.F.R. § 1502.14(a). The discussion of alternatives need not be exhaustive, but it must "be sufficient to demonstrate reasoned decision-making." *Fritiofson v. Alexander,* 772 F.2d 1225, 1236 (5th Cir. 1985); *see also C.A.R.E Now, Inc. v. F.A.A.,* 844 F.2d 1569, 1574 (11th Cir. 1988) (stating that the court must assess whether the agency has made a "reasoned choice"). Although a private land site alternative would not be within the jurisdiction of the BLM, section 1502.14 of the NEPA Guidelines requires the EIS to examine all reasonable alternatives, including those outside the jurisdiction of the BLM. *See* 50 C.F.R. § 1502.14(a). In determining the scope of alternatives to be considered, the emphasis is on what is "reasonable" rather than on whether the proponent or applicant prefers, or is itself capable of carrying out, a particular alternative. NEPA's 40 Most Asked Questions, 2a. The FSA/DEIS identified

the Harpers Lake private land option, which "had sufficient land for a 400 MW facility with the configuration of the proposed project," though it was rejected by the proponent because "one of the major land owners at the site requested too much money." FSA/DEIS, page 4-20. This dismissal is unacceptable and arbitrary absent a full analysis and determination of feasibility.

BLM cannot make a reasoned choice without analyzing at least one private land site alternative.
First, it is the stated goal of RETI, a California initiative charged with identifying sites for renewable energy facilities and transmission lines, to prioritize renewable energy development on private land. RETI recently issued the following statement:

RETI stakeholders agree that utilizing disturbed private lands close to existing infrastructure for renewable energy development should be a priority for the state. County governments and state agencies are in the best position to develop mechanisms to consolidate the ownership of extensively-parcelized lands that have excellent renewable resource potential. For this reason, the RETI Phase 2A Final Report includes a formal recommendation that the California Energy Commission, in conjunction with other state and federal agencies, counties and the renewable energy industry, develop and implement a strategy for consolidating ownership of disturbed or degraded private lands for renewable energy development on an expedited basis (RETI Phase 2A Final Report, page 2-33).

Comment Supp-19-9: The two alternatives identified are not sufficient to satisfy NEPA's requirements. A private land site alternative is absolutely necessary given the extensive impacts to biological resources resulting from locating the project on public lands, the RETI policy favoring private lands, the uncertainty of mitigation requirements and the cumulative impacts of renewable energy projects on public lands in the region.

Previously Disturbed/Developed Sites:

Comment Supp-20-7: For this and future projects, EPA continues to recommend the identification of locations that have been previously disturbed or contaminated. The FEIS should discuss any methods or tools ELM has used to identify and compare locations for siting renewable energy facilities, and to ascertain whether or not any disturbed sites are available that would be suitable for the proposed Project. For example, the EPA's Re-Powering Amen.ca initiative works to identify disturbed and contaminated lands appropriate for renewable energy development. For more information on that initiative, visit http://www.epa.gov/oswercpal.

Recommendations:

- EPA strongly encourages BLM to promote the siting of renewable energy projects on disturbed, degraded and contaminated sites, before considering large tracts of undisturbed public lands.

- The FEIS should include information regarding all criteria used to evaluate the Project site and alternatives.

Comment Supp-8-4: Moreover, additional opportunities are emerging every day for siting large-scale industrial renewable energy projects on previously damaged or disturbed lands. Indeed, approximately 30,000 acres of former agricultural lands in the Westlands Water District may soon be available to provide 5,000 MW of utility-scale solar development.

Comment Supp-18-1: NPCA recognizes that the addendum has been offered in order to limit the impact to rare and sensitive plant species found on the site, in order to fully mitigated the direct, indirect, and cumulative to biological resources. The applicant's recent proposal (2-11-2010) has proposed that the total footprint of the site to be reduced by 491 acres, that Ivanpah 2 and 3 realign to minimize damage to rare plant species, that Ivanpah 3 reduce the number of solar towers from 3 to 1, that the total number of heilostats to be reduced by 40,500, and that the total energy production potential be reduced from 400 MW to 370 MW.

NPCA agrees that impacts to rare and sensitive plants should be limited and fully mitigated. We continue to encourage realignment or relocation to limit adverse impacts to desert tortoise and other sensitive species, and to protect or limit and mitigate impacts to, Mojave National Preserve's night-sky resources and viewshed. We remain concerned about the cumulative impacts of this potential project and proposed adjacent development in the Ivanpah Valley. For these reasons, NPCA continues to advocate for alternative locations for this project, and our organization suggests that the project be preferentially sited on disturbed lands in one of California's BLM proposed Solar Energy Study Areas, or on private distributed land.

Distributed Generation:

Comment Supp-8-4: As the testimony submitted in the CEC process and provided to the BLM with the Center's comments on the DEIS shows, a distributed solar energy alternative is also a feasible alternative. Recent data and information also shows that a distributed solar energy alternative would be comparable in terms of cost and capacity factor —indeed it may be less costly than the proposed project. *See* RETI 2B Report (attached). There are many opportunities for development of renewable energy in closer proximity to urban load center where there are areas appropriately zoned for industrial development.

Comment Supp-8-5: Alternative renewable energy projects are being proposed, built, and brought on line in many areas beyond of the California desert as well. While clearly some solar development will go forward in the California desert, the Ivanpah Valley, should not bear a disproportionate burden of the impacts of these industrial-scale solar facilities when other feasible alternatives exist and have not been adequately explored. Importantly, analyzing a distributed PV alternative to this proposed project does not preclude cost-effective central station (industrial) solar projects being sited in any way.

Indeed, proposed projects that are appropriately sited on disturbed or degraded lands served by existing transmission lines may very well be comparable to distributed PV when looked at in a robust alternatives analysis. The DEIS discussion of this alternative was inaccurate and inadequate and the Supplemental DEIS still fails to include an alternative of distributed solar.

Ivanpah Playa:

Comment Supp-13-2: The NEPA implementing regulations specify that NEPA documents must analyze a full range of alternatives. The consideration of alternatives "is the heart of the environmental impact statement." 40 C.F.R. § 1502.14. NEPA requires agencies to "Use the NEPA process to identify and assess the reasonable alternatives to proposed actions that will avoid or minimize adverse effects of these actions upon the quality of the human environment." (40 C.F.R. § 1500.2)

In the original DEIS, the BLM considered only two alternatives, granting the right-of-way (the "proposed action") and not granting the right-of-way ("no action"). In our comment letter on the DEIS we had requested that the BLM to consider locating the project on Ivanpah Dry Lake bed. This obvious and reasonable alternative site location was raised at public meetings, was proposed by the Sierra Club in its June 22, 2009 letter, and was referenced by CDFG in its October 27, 2009 letter. The NEPA requires agencies to "Rigorously explore and objectively evaluate all reasonable alternatives, and for alternatives which were eliminated from detailed study, briefly discuss the reasons for their having been eliminated." This alternative should have been considered in the SDEIS.

Comment Supp-8-3: While the Supplemental DEIS considers two additional alternatives it has ignored other feasible alternatives including off site alternatives and an alternative plan amendment that would consider this area for protection as an ACEC or an addition to the existing DWMA. Such alternatives are clearly feasible. Indeed, other recent draft EISs for solar projects included discussion of an alternate plan amendment to protect the area of a proposed project by making it unavailable for future solar development. DEIS for the SES Two Solar Project in Imperial County at B.2-18 (framed as one of several "no action" alternatives although it includes a plan amendment which is an action); DEIS for the Ridgecrest Solar Power Project at B.2-16 (same); DEIS for the Palen Solar Power Project at B.2-18 (same); DEIS for the Genesis Solar Energy Project at B.1-30 (same).

Although both the reduced footprint alternative and the I-15 alternative would reduce some on-site impacts to rare species, other alternatives are clearly available and feasible that would further and more significantly reduce the impacts and these alternatives were previously suggested to the BLM but are still not addressed in the SDEIS. Other configurations were not considered including relocating the project adjacent to I-15 on Ivanpah dry lake or a portion thereof closer to Primm, which is likely to significantly reduce or eliminate impacts to rare plant and tortoise habitat (pending surveys).

Comment Supp-13-12: The NEMO Plan set the goal for special status species as "Populations and their habitats are sufficiently distributed to prevent the need for listing" (NEMO Plan at 2-6). The SDEIS provides too little analysis of impacts, fails to discuss of alternatives that would avoid these impacts, and provides inadequate information about the proposed mitigation strategies and how these will fulfill the objectives laid out in NEMO. Siting the project on the dry lake bed would have avoided many impacts to rare plants.

Phased Approval:

Comment Supp-8-3: Other feasible alternatives include a phased alternative that could to minimize impacts of the project if unforeseen events occur during construction for example or if the project fails to perform as hoped by the applicant. *See* FSA/DEIS at 2-5 (Applicant's Objectives). Because the technology at issue has not previously been constructed at "commercial-scale" phasing is particularly appropriate. For example, if the first phase demonstrates that this technology for some reason is not technically or economically viable at a commercial-scale project, then changes could be made before approval of any subsequent phases and less environmental damage will occur. The approval could be phased and the applicant given a set of targets to meet for energy production as well as targets for mitigation success for the first phase before additional phases might be approved. A phased alternative would also, most importantly, provide the applicant additional time to find more appropriate sites for any remaining phases of the project.

Response: *BLM has reviewed and evaluated all public comments received on the SDEIS, and also evaluated information received through the CEC hearing process. Based on this information, BLM reviewed the identification, screening, and analysis of alternatives that was presented in the DEIS. As a result of this review, BLM determined that two alternatives which had been screened and eliminated from further evaluation in Section 4 of the DEIS (the I-15 Alternative and the Reduced Acreage Alternative) merited more detailed evaluation. As a result, BLM published the SDEIS on April 16. The SDEIS presented a detailed, resource-by-resource evaluation of a version of the I-15 Alternative (called the Modified I-15 Alternative), and a reduced acreage alternative (called the Mitigated Ivanpah 3 Alternative).*

In addition, BLM evaluated the 21 other alternatives, including several (Private Land, Distributed Generation), that are not within BLM's scope of authority. Following the review of the public comments, BLM reviewed the rationale presented in the DEIS for eliminating the 21 other alternatives from detailed evaluation, including several proposed in the public comments, and concluded that the rationale for their elimination was explicitly provided, and was sound. In some cases, such as Distributed Generation, additional information has been provided.

Finally, BLM noted that the public comments identified two alternatives (Ivanpah Playa and Phased Approval) that were not included in the screening analysis in Section 4 of the DEIS. Because both of these alternatives recommended in the public comments

have merit, they have been added to the revised screening analysis in Section 3 of the FEIS.

2.4 Comments on the Alternatives Identification and Screening Process

Comment Supp-20-2: The DEIS eliminated certain alternatives because they required land outside of the applied-for ROW. The SDEIS includes the Modified 1-15 alternative, which proposes locating a portion of the Project outside of the ROW. The SDEIS indicates that the evaluation concluded that the Modified I-15 Alternative would accomplish all of the objectives of the purpose and need, including meeting power demand, as well as federal and state objectives for renewable energy development (at pg. 2). The FEIS should discuss how an alternative that extends outside of the applied for ROW could meet the purpose and need, given that this was used as a rationale in the DEIS to eliminate certain alternatives. The discussion should cite any regulation or BLM policy that limits the evaluation of alternatives outside of the right of way (ROW) for which an application has been received.

As stated in our scoping comments, reasonable alternatives should include, but are not necessarily limited to, alternative sites, capacities, and technologies, as well as alternatives that identify environmentally sensitive areas or areas with potential use conflicts. A robust range of alternatives will include more options for avoiding significant environmental impacts.

Recommendations:

- Include supporting documentation and additional discussion on BLM's rationale for the elimination of off-site alternatives from further consideration under NEPA.
- The FEIS should discuss how an alternative that includes a portion outside of the applied-for ROW could meet the purpose and need given this was used as a rationale in the DEIS to eliminate certain alternatives.

Comment Supp-20-3: EPA recommends that the FEIS present the environmental impacts of all alternatives considered in comparative form, sharply defining the issues and providing a clear basis for choice among options for the decision maker and the public (40 CFR 1502.14). A rigorous comparison of the merits of each alternative would better achieve the purposes of NEPA.

From our review of the SDEIS, it is apparent that sufficient survey information was not available to adequately compare alternatives. The SDEIS concludes that "although impacts to plant species may also be different between the two alternatives, these impacts cannot be determined without site-specific surveys on the Modified I-IS Alternative location" (at pg. 197). Similarly, the SDEIS estimates that tortoise impacts from the Modified 1-15 Alternative are "likely also reduced~' as compared to the Mitigated Ivanpah 3 Alternative (at pg. 200). Also, while the Modified 1-15 Alternative would eliminate the need for grading 170 acres in the proposed Project footprint, the SDEIS indicates that the impact of the alternative on active drainage pathways, which are designated as Waters of the State, cannot be fully evaluated without detailed

mapping and evaluation of the revised Ivanpah Unit 3 location (at pg. 159). Details are also lacking to compare and contrast alternatives for impacts to groundwater, stormwater flows, and downstream resources as well as other resource areas discussed.

Recommendations:

- The FEIS should clearly describe the rationale used to determine whether impacts of an alternative are significant or not. Thresholds of significance should be determined by considering the context and intensity of an action and its effects (40 CFR 1508.27).
- The FEIS should present environmental impacts from all alternatives considered in comparative form, sharply defining the issues and providing a clear basis for choice among options for the decision maker and the public (40 CFR 1502.14).
- The FEIS should fully justify the elimination of any alternatives that would result in fewer environmental impacts than the preferred alternative and should clearly explain why certain alternatives are not fully analyzed, including a description of the criteria used to eliminate potential alternatives from further study.
- The FEIS should fully describe measures to avoid washes and placement of heliostats in drainages for all alternatives evaluated.

Comment Supp-20-4: The SDEIS indicates that because the project proponent "did not apply for nor did it hold third party sales contracts for reduced project output at the time of the DEIS, the Reduced Acreage Alternative was not developed and evaluated in detail" (at pg. 4). We commend BLM tor reconsidering whether the proposed Condition of Certification BIO-18 could result in equivalent impact reductions as the Reduced Acreage Alternative (at pg. 5).As recommended in our DEIS comments, we recommend that the SDEIS include a full analysis of the Reduced Acreage alternative to provide a comparison of environmental and economic impacts to inform decision making.

Recommendation:

- The FEIS should discuss the changes that have resulted since the DEIS was issued which has resulted in the ability of the project proponent to consider a reduced project output.

Comment Supp-20-5: In light of the recent decision to separate CEC's and BLM's environmental review processes, the DEIS should discuss the resolution procedure should BLM' s FEIS present a preferred alternative that is different than CEC approves through its process.

Recommendation:

- Clarify in the FEIS how BLM's and CEC's now separated alternative selection processes will be reconciled.

Response:

CEQ regulations at Section 1502.14(a) acknowledge that the alternatives analysis needs to be a multi-step process, with some alternatives being eliminated from further consideration without the need for detailed study. The regulation requires that these alternatives be identified and evaluated, and that the rationale for their elimination be provided – however, it does not require detailed evaluation of alternatives that have not been identified as reasonable alternatives. The identification and preliminary screening evaluation of alternatives in Section 4 of the DEIS is consistent with this requirement. The text on Pages 4-9 through 4-11 generally describes some of the technological and jurisdictional rationale for why some classes of alternatives were determined to not be reasonable or feasible alternatives to meet the purpose and need for the proposed project. Then, instead of simply dismissing these alternatives, the DEIS goes on to describe and present a resource-by-resource summary of the associated impacts of many of these alternatives, and ends each subsection with a paragraph titled "Rationale for Elimination". Although these alternatives were not carried into the resource sections for detailed analysis, Section 3 does provide enough information, even on those alternatives determined not to be reasonable, to explain why the alternative was not carried forward for more detailed evaluation, and to allow a comparison of impacts between the alternative and the proposed project. Then, for the alternatives retained for further analysis, each subsection in Section 4 includes a comparative analysis among the alternatives. These comparisons are repeated in the overall summary of the EIS.

2.5 Recommendations for Alternative to be Selected

In Favor of the Mitigated Ivanpah 3 Alternative:

Comment Supp-7-1: The Applicant strongly supports a robust analysis under NEPA and all other relevant laws and policies for renewable energy projects, and appreciates the BLM's inclusion and thorough review of the two additional alternatives presented in the SDEIS. To be clear, while NEPA requires the BLM to consider a range of reasonable alternatives, the Applicant is prepared to build only one of these alternatives- the Mitigated Ivanpah 3 Alternative, which is described and fully analyzed in the SDEIS. The Applicant believes that the Mitigated Ivanpah 3 Alternative best meets federal and state objectives for renewable energy, including providing the most favorable balance of all environmental
impacts. Moreover, while the alternatives included in the DEIS and SDEIS provide a broad range of alternatives needed for an adequate NEPA analysis, there are financial, technical and procedural impediments to implementing any alternative other than the Mitigated Ivanpah 3 Alternative that would prevent other alternatives from meeting the ARRA deadlines, and the Secretary's goals for the fast-track projects, for the reasons described in the comments below. The Applicant therefore requests selection of the Mitigated Ivanpah 3 Alternative so that ISEGS can proceed to contribute towards the nation's renewable energy infrastructure, and provide the climate protection, green jobs and new green economy sought by federal and state policy alike.

Comment Supp-7-2: The Applicant has participated extensively in the CEC process and has established, through its comments, evidence, and testimony, that the project satisfies the applicable State of California requirements and should be permitted in the form of the Mitigated Ivanpah 3 Alternative, as recommended by CEC staff.2 Through the Mitigated Ivanpah 3 Alternative, the Applicant has taken additional steps to avoid and minimize the impacts of the project, further strengthening the grounds for timely approval of the project. The informational record supporting approval of the Mitigated Ivanpah 3 Alternative is robust and clearly supports selection of the Mitigated Ivanpah 3 Alternative as the preferred alternative in the Final EIS. The Applicant believes that the entire record, including the FEIS, will provide robust support for selection of the Mitigated Ivanpah 3 Alternative in the BLM's Record of Decision (ROD).

Comment Supp-7-3: The Applicant appreciates the additional efforts by the BLM to develop the SDEIS, and thereby provide a more informative and robust environmental review by adding to the range of alternatives available to the BLM for consideration. The alternatives analysis, as augmented by the SDEIS, properly and fully considers the following alternatives: (1) the Mitigated Ivanpah 3 Alternative, which is now the Applicant's preferred Project; (2) the larger Ivanpah project that had been the Applicant's proposed project prior to recommending a project with reduced size and environmental impact; (3) the Modified I-15 Alternative; and (4) the No Action Alternative. These comments provide further discussion of the Mitigated Ivanpah 3 Alternative and the Modified I-15 Alternative.

A. The Mitigated Ivanpah 3 Alternative.

The Mitigated Ivanpah 3 Alternative is the sole alternative that can be commenced in time to meet ARRA deadlines and fulfill California and national renewable energy objectives. Moreover, the record clearly establishes that none of the other alternatives are environmentally superior to the Mitigated Ivanpah 3 Alternative. The staff of the CEC, after completion of hearings and briefings, recommended approval of the Mitigated Ivanpah 3 Alternative. The Applicant strongly believes that, on consideration of the record, the federal government should reach the same conclusion.

The Mitigated Ivanpah 3 Alternative, an enhanced mitigation proposal, significantly reduces the project's footprint and minimizes potential negative environmental impacts. Specifically, the Mitigated Ivanpah 3 Alternative would:

- Reduce the footprint of the third Ivanpah plant by 23 percent, avoiding the area identified by environmental groups during the CEC proceedings and the DEIS public comment period as posing the greatest concern.
- Reduce the footprint of the overall Ivanpah project by about 12 percent
- Reduce expected desert tortoise relocations by approximately 15 percent (based on previous protocol surveys of the project site; the actual number will depend on where tortoises are at the time they are relocated)
- Avoid the area identified as having the highest rare plant density

- Reduce the number of towers at the third Ivanpah plant from five to one; reduce overall number of towers at the Ivanpah project from seven to three
- Reduce the potential maximum number of heliostats by about 40,000
- Avoid the area that would have required the most grading and large rock removal in the solar fields
- Leave the largest natural stormwater features (washes) in the northern portion of the site intact

Although the Mitigated Ivanpah 3 Alternative would reduce the total capacity of the ISEGS project to approximately 392 MW (which, in the long run constitute, a negative environmental impact to the extent that it decreases peak renewable energy production and lessens the ISEGS' displacement of fossil-fueled generation), the overall balance of the Mitigated Ivanpah 3 Alternative's positive and negative impacts relative to any other alternative make it the superior choice. The Mitigated Ivanpah 3 Alternative, as indicated previously in these comments, is also the only alternative that could be commenced in time both to meet ARRA deadlines and to fulfill state and federal policy objectives for renewable energy projects identified by the Secretary for priority review. Commencement of construction requires timely closing of project financing, in order to obtain the funds needed to undertake the requisite construction activities. Successful project financing requires that the project be economic, considering project costs and revenue. Project costs and revenues, in turn, depend on a web of power purchase agreements (PPAs) approved by the California Public Utilities Commission (CPUC); construction, operational and closure costs; and eligibility for and receipt of benefits available to renewable energy projects, including the federal financial benefits provided under ARRA, which are available only to projects commencing construction this year.

Although the construction changes between the Mitigated Ivanpah 3 Alternative and the originally proposed alternative are extensive, the change order costs are mitigated to some degree by the Mitigated Ivanpah 3 Alternative's use of land areas already wellstudied and planned for in terms of detailed construction, operation, stormwater management and other factors required for timely and efficient implementation, which require far more data and analysis than the level required for comparative alternative analysis. The avoidance of areas of rougher terrain that would have required comparatively more land work mitigates the cost of implementing the Mitigated Ivanpah 3 Alternative relative to the original proposed alternative. In addition to changes in construction costs, the reduction in size of the ISEGS understandably changes the output of the project, and thus the economies of scale (costs of construction relative to production). The reduction in size of the ISEGS also reduces the overall revenues of the project. Increased costs and decreased revenues, in addition to perceived risk of timely completion of the ISEGS, increases the difficulty of obtaining the required project financing under existing PPAs. Due to careful efforts by the Applicant in crafting the Mitigated Ivanpah 3 Alternative so as to reduce environmental impacts but retain sufficient project viability in the face of increased costs and reduced revenue, the corresponding changes to the PPAs required to procure the necessary project financing are comparatively minimal, and can be completed in time for closing of project financing and commencement of construction in 2010.

Commencement of construction in 2010 is itself a prerequisite to project financing. The Department of Energy's conditional commitment to a $1.37 billion loan guarantee for the ISEGS, the first granted to a utility-scale solar project, and other project financing required to build the ISEGS are all dependent on the ISEGS qualifying for a grant in lieu of the Investment Tax Credit (ITC). The ITC provides a credit against tax liabilities for those who invest in solar, including projects such as the ISEGS. Very few entities will have sufficient tax liability to make tax credits a meaningful stimulus to utility-scale solar investment. As a response to this issue, ARRA allows conversion of the ITC from a tax credit to a grant, provided that the solar projects actually commence construction in 2010. Under guidance issued by the Treasury, which is responsible for implementing the ITC grant program, commencement of construction can be demonstrated either through "physical work of a significant nature" on the project or expenditure of five percent (5%) of the total project costs (this latter factor is referred to as a "safe harbor"). For ISEGS, the requirements must be met for each of the three units that comprise the project, and closure of project financing will be necessary to undertake the activities or make the expenditures necessary to meet the ITC grant requirements. Only the Mitigated Ivanpah 3 Alternative, for the reasons discussed above, can achieve project financing in time to allow the Applicant to meet the ITC grant requirements. Project financing and the ITC grant are thus reciprocal requirements—both must be in place to allow the ISEGS to go forward, and only the Mitigated Ivanpah 3 Alternative can provide both at this stage.

The Mitigated Ivanpah 3 Alternative provides the best balance of environmental benefits and impacts; although it will have reduced renewable energy and climate change benefits relative to the originally-proposed alternative, it will also have reduced impacts on desert tortoise and rare plants. It is also technically and financially feasible, and can be implemented in time to serve federal and state policy objectives. It has been recommended for approval by the staff of the CEC after an exceptionally thorough review process, which included extensive hearings and briefs. For all of these reasons, it is the alternative that should be selected.

Opposition to the Mitigated Ivanpah 3 Alternative:

Comment Supp-11-12: The Reduced Ivanpah 3 Alternative Is Essentially Indistinguishable From the Original Application in terms of Desert Tortoise Impacts

In response to the Sierra Club's proposal, the Applicant proposed its Reduced/Mitigated Ivanpah 3, which shaves off 433 acres from the northernmost portion of the originally proposed Ivanpah 3 unit. The idea was simply to shrink the size of Ivanpah 3, thereby reducing generating capacity, without adequately addressing habitat fragmentation and desert tortoise and other biological resource impacts.

Comment Supp-11-13: A Reduced Ivanpah 3 Would Entail An Unacceptable Amount of Habitat Fragmentation and Tortoise Translocation

As the Energy Commission's analysis showed, this option does nothing to mitigate the significant impacts on desert tortoise as compared to the original plan. (FSA Addendum at 4-4, 7.) And it bears repeating that lands adjacent to the interstate are less suitable for desert tortoise:

- **Applicant:** "[w]hile all of the Ivanpah SEGS project area is within tortoise habitat, most biologists agree that Ivanpah 3 supports relatively better habitat than areas to the south closer to Interstate 15. This assessment is based on relatively greater frequency with which tortoise sign is observed, increased vegetative diversity and density, greater number of ephemeral washes in the northern portion of the project area and the greater number of tortoises found during spring survey." (Ex. 88, at 3-2.)

- **Scott Cashen**: It is "pretty clear that relocating the project on the lands adjacent to the freeway would have less of an impact on the desert tortoise population than the currently proposed location." (Tr. at p. 311 (Jan. 12, 2010).)

- **Ms. Sanders with the Energy Commission**: I-15 creates a mortality hazard and increases habitat fragmentation. (SEIS 127.)

The applicant ignored the fact that its reduced Ivanpah 3 would result in essentially the same level of habitat fragmentation and tortoise translocation as the original Project, while the Modified I-15 alternative reduces both.

Comment Supp-11-16: Mitigated Ivanpah 3 Does Not Address the Threats to Tortoise and Other Desert Species Caused by Habitat Fragmentation

Reducing Ivanpah 3 does nothing to lessen habitat fragmentation in the Ivanpah Valley. However, the Modified I-15 alternative would "reduce local habitat fragmentation, providing larger, contiguous areas of tortoise habitat." (SEIS 127.) Energy Commission staff identified fragmentation, in addition to habitat loss and disturbance, as a substantial direct impact to desert tortoise (Ex. 300 at p. 6.2-51.) In addition:

- **Ms. Chainey-Davis, Energy Commission: "**We go back to the idea of protecting large blocks of habitat with species, large blocks that have and will have the integrity and the size and the connectivity to be sustainable. (Tr. at p. 153 (Jan. 14, 2010).)

- **Scott Cashen:** "And I think we also seem to agree that there are ecological principles, such as fragmentation and maintenance of large blocks of habitat that are important to maintaining intact ecosystems. And it seems that we also agree that the studies of desert tortoises have shown that roads are a sink for tortoises, and that they have an adverse effect. And if I'm wrong, please respond. Thank you. (Tr. at p. 231 (Jan. 14, 2010).)

- **Mr. Anderson, Energy Commission:** In response; **"**I don't disagree. I agree with everything he [Mr. Cashen] said." (*Id.)* Aside from direct, Project-related mortality, habitat fragmentation is the single most significant impact to desert tortoise and other sensitive species. The reduced Ivanpah 3 scheme will not stop fragmentation in the important upper reaches of the Ivanpah Valley because it would still destroy 1,227 acres of land in the northern part of the Ivanpah Valley. (SEIS 14.) In contrast, the Modified I-15 alternative would leave intact 1836.3 acres in the upper Ivanpah Valley as one contiguous habitat block, while developing lands at an elevation lower than 2800 feet.

In Favor of the Modified I-15 Alternative:

Comment Supp-19-9: Of the two alternatives analyzed in the DSEIS, the Modified I-15 alternative is preferred. It would avoid more of the intact desert tortoise habitat and rare plants on the site. The Mitigated Ivanpah 3 project would still impact several rare plant communities, and would fragment desert tortoise habitat for a population of tortoises which have a significant portion of their range in the Northern Ivanpah Valley. Finally, in addition to providing a full range of alternatives and a robust analysis of each alternative, BLM must identify and analyze measures to avoid adverse impacts, as well as adequate mitigation measures for unavoidable impacts.

Comment Supp-11-1: The Modified I-15 Alternative is the Environmentally Superior Option

As mentioned, the SEIS's Modified I-15 alternative is based on a June 2009 Sierra Club proposal to develop all three units adjacent to I-15. The SEIS's Modified I-15 alternative moves the Ivanpah 3 unit south and slightly east of the existing Ivanpah 1 unit, and adjacent to I-15. (SEIS Fig. 5-1.) **Importantly, the applicant itself proposed the footprint for this alternative, demonstrating that such a configuration is technically feasible.** (SEIS at 104.) Thus, the record shows that the Modified I-15 alternative is technically feasible, and is the only alternative that:

- Reduces the need for deleterious translocation of desert tortoise;
- Sites the Project in the most degraded land in the Ivanpah Valley;
- Avoids habitat fragmentation, thereby protecting habitat for desert tortoise and other sensitive species such as bighorn sheep;
- Avoids some impacts to sensitive plant species by siting the Project at a lower elevation;
- Causes no concrete negative or harmful visual impacts; and
- Avoids impacts related to storm water drainage.

Comment Supp-10-1: The supplement addresses two new alternatives - the Mitigated Ivanpah 3, which the proponent released shortly before the close of the comment period on the original draft, and the Modified 1-15 "alternative, which the Sierra Club previously submitted to the BLM and to the California Energy Commission but which was not considered in the original draft. Both of these alternatives reduce the

environmental impacts of this project and, as such, testify to the value of the NEPA process and its alternatives analysis in particular. Of the two new options considered, the Modified 1-15 alternative seems preferable from an environmental perspective: it would reduce impacts to the desert tortoise, see SDEIS at 136, rare plant communities, id. at 200, golden eagles, id. at 130, and Nelson's bighorn sheep, id. at 129- although to be sure it would still have significant impacts, see, e.g., id at 136. We regret that a significantly smaller option has not been considered: such an alternative would reveal more clearly the tradeoffs involved in obtaining renewable energy from this site.

Comment Supp-11-2: The Modified I-15 Alternative is the Superior Option for Protecting the Threatened Desert Tortoise

Overall, the Modified I-15 alternative is significantly better for the threatened desert tortoise. According to the SEIS, the Modified I-15 alternative's impacts on desert tortoise would be less than those of Mitigated Ivanpah 3. (SEIS 199.) The Modified I-15 alternative protects the tortoise by siting the Project in lands already degraded by the interstate; reduces the need to translocate; protects against habitat fragmentation; and, preserves habitat connectivity in the upper reaches of the Ivanpah Valley.

Comment Supp-11-17: As outlined above, the administrative record developed during the BLM's NEPA process and the California Energy Commission's proceeding overwhelmingly proves that the Modified I-15 alternative is the environmentally superior option short of no project. The evidence is clear that fewer desert tortoises occupy the lands adjacent to I-15 as compared to the habitat at the proposed Ivanpah 3 unit. Likewise, the record shows that fewer rare plant communities occur on these lands.

The wildlife agencies may not know with complete certainty the number of desert tortoises or rare plants occurring on the lands adjacent to I-15, but the same is true for any land proposed for development in the valley. The applicant's most current desert tortoise surveys are now several years old, and it has failed to conduct spring or fall surveys for approximately the last 4 seasons. Therefore, because the recommended mitigation for both desert tortoise and rare plants is salvage and translocation, the exact numbers of any given species would not change the final mitigation strategy. In other words, the actual number of individuals that will require salvage efforts is unknown for all project areas additional surveys will be necessary prior to construction. Therefore, the record shows that the Modified I-15 alternative will affect fewer tortoises and rare plants and will result in less habitat fragmentation, thereby protecting the important upper reaches of the Valley.

Based on the foregoing, Sierra Club respectfully requests that if the BLM decides to issue the applicant a right-of-way, it do so for the Modified I-15 alternative as described in SEIS.

Comment Supp-11-3: First, much of the land contained within the Modified I-15 alternative is already degraded. (SEIS 127.) In addition, the scientific literature is clear concerning the significant impacts highways have on tortoises, beyond 'mere' collisions.

(SEIS 127.) Studies show that there are significant impacts on desert tortoise at distances less than 800 meters from a highway. The Modified I-15 alternative takes advantage of this by situating a portion of the facility in an area with poor quality habitat and relatively close proximity to the interstate. The fact that the habitat is already affected further supports the conclusion that there are fewer desert tortoise found in that area.

Second, the record shows that proximity to I-15 not only results in degraded habitat but also has a direct bearing on tortoise density: "Tortoise densities may substantially decline with proximity to I-15 due to highway mortality, declining habitat quality, and habitat fragmentation." (SEIS 127.) According to Energy Commission staff biologist Susan Sanders, I-15 creates a mortality hazard and increases habitat fragmentation for all wildlife species. (*Id*.) Other experts testified at the Energy Commission hearings that there is lower burrow density in the lands adjacent to I-15. (*Id.*) This lower burrow density correlates to a lower tortoise population and may be due to "less desirable habitat, including flatter terrain occurring at [] lower elevations, fewer washes, potential differences in burrow habitat, greater frequency of dirt roads, differences in forage quality (more weed species) and proximity to I-15." (*Id.*) This lower quality habitat and lower overall density means desert tortoise numbers are fewer which in turn would reduce the number of translocated individuals at Project construction.

Comment Supp-11-4: Locating Ivanpah 3 next to the interstate would "reduce local habitat fragmentation, providing larger, contiguous areas of tortoise habitat." (SEIS 127.) Biologists were unanimous at the Energy Commission hearings that habitat fragmentation is a significant concern for Ivanpah Valley desert tortoise. For example, according to biologist Scott Cashen, "Habitat fragmentation and community-level disturbances are known threats to the long-term viability of many plant and animal species. In my opinion, reducing these threats would benefit the sensitive species known to occur in the Ivanpah Valley." (Hearing Exhibit. 611 at pp. 8-11.) The other experts shared these concerns:

- **Dr. Ron Marlow**: "Lots of really good potential habitat is not being occupied by tortoises because of the impacts of the existing road . . . To the extent that we're going to have a project, then extending off at an angle to I-15 simply provides another division to the habitat . . . And eventually whatever value a large piece of land might provide to a species like desert tortoise, which ranges over a relatively large area, which experiences localized extinctions and fluctuations of population by losing the connectiveness is pretty direct . . . placing two linear impacts against each other would make more sense. It reduces the edge over which that impact is expressed in the population." (Tr. at pp. 419-420 (Jan. 11, 2010).)

- **Dr. Michael Connor**: "We have a situation where we do, indeed, have a freeway running down the valley. And there's absolutely no doubt that that freeway causes fragmentation of the habitat." (Tr. at pp. 436-437 (Jan. 11, 2010).)

- **California Native Plant Society**: "the biological affects of ecosystem fragmentation are well documented (Saunders et al., 1991). In general, the fragmentation of rare plant habitat on the Project site will lead to two fundamental changes across the landscape; 1) an increasing isolation of remnant populations, and 2) a decrease in the total amount of available habitat for remnant populations. These two phenomena will be repeated throughout Ivanpah Valley." (Ex. 1014 at p. 3.) The Modified I-15 alternative is the only alternative that will reduce habitat fragmentation in any meaningful way.

Comment Supp-11-5: The Modified I-15 Alternative is the Only Alternative That Preserves Blocks of Contiguous Habitat in the Upper Reaches of the Valley

The record also shows that in addition to reducing habitat fragmentation, it is imperative to preserve habitat connectivity to protect sensitive desert species. In this way, Energy Commission staff testified to the importance of "maintaining large portion of contiguous habitat." (SEIS 127.) Likewise, according expert Mark Jorgensen "[t]he obvious thing to me would be don't go so high up on the alluvial fan. Go down . . . to a more impacted zone down near the freeway." (Tr. at pp. 447, 465 (Jan. 11, 2010).) The Modified I-15 alternative maintains the greatest amount of connected habitat for listed and sensitive biological resources.

Comment Supp-11-6: The Modified I-15 Alternative is the Most Protective Alternative for Big Horn Sheep

BLM manages Nelson's bighorn sheep as a sensitive species, including in the Ivanpah Valley. According to the SEIS, "it is likely that bighorn sheep move down into the upper elevations of Ivanpah Valley, including the ISEGS project area to forage." (SEIS 38.) Thus, the SEIS determined that alluvial fans near steep and rocky terrain can be crucial foraging habitat; ewes nearing the end of gestation may need additional nutrients and come down for higher quality foliage. (*Id.*) Although the sheep might "use areas like the project site for only a three weeks, [] those three weeks are critical." (*Id.*) Additionally, California Fish & Game has established that wildlife corridors are present in the northern area of the valley, raising important concerns about the adverse impacts the Project could have on bighorn sheep. (CDFG 2008, SEIS 38.) The applicant must be required to protect big horn habitat in the Ivanpah Valley.
In any case, the Modified I-15 alternative is the most protective of big horn sheep: "Since the proposed Ivanpah Unit 3 site is furthest north, the reconfiguration of that unit away from Clark Mountain, closer to the Dry Lake Bed, and adjacent to I-15 would reduce potential impacts to bighorn sheep and other big game movement corridors." (SEIS 129.) According to the SEIS, big game "would benefit from co-location to the highway, minimizing habitat fragmentation, retaining movement corridors, and avoiding impacts to high quality habitat along the northern portion of the project." (SEIS 137.) Wildlife biologist and big horn sheep expert, Mark Jorgensen, testified before the Energy Commission that the Project should not be built high on the alluvial fan; instead, any development should occur at the bottom of the alluvial fan along I-15. (Ex. 939,

Testimony of Mark C. Jorgensen.) The record is clear that the Project will affect big horn sheep, and it is likewise clear that the Modified I-15 alternative is the least intrusive option analyzed.

Comment Supp-11-7: The Modified I-15 Alternative is the Most Protective Option for Rare Plant Communities

According to intervenor California Native Plant Society, "the biological effects of ecosystem fragmentation are well documented (Saunders et al., 1991). In general, the fragmentation of rare plant habitat on the Project site will lead to two fundamental changes across the landscape: 1) an increasing isolation of remnant populations, and 2) a decrease in the total amount of available habitat for remnant populations. These two phenomena will be repeated throughout Ivanpah Valley." (Ex 1014, at p. 6.) The record shows that the Modified I-15 alternative will reduce impacts on rare plant communities. (SEIS 200.) The applicant has verified that the "most suitable habitat for rare plants occurs in elevations above the 2,750 foot contour . . . [b]elow that elevation, the topography tends to flatten out, the habitat lacks the microtopography and soil textures upon which many rare plant species depend, and the overall plant diversity is reduced . . ." (SEIS 132.) Sierra Club has already shown that nearly 1500 acres of land near I-15 is at an elevation lower than 2800 feet. (Ex. 305 at p. 7). Given that habitat below 2,750 feet is often less diverse and of lower quality, then the Modified I-15 alternative is the more protective alternative for rare plant species. Also, as shown above, California Native Plant Society testified that habitat fragmentation is devastation to rare desert plant communities, thus its final conclusion was that actual avoidance of detrimental take was impossible so "the development of real and meaningful alternatives" was essential. (Ex. 1014 at pp. 3, 6.)

Comment Supp-11-8: Potential Issues Related to Glare Do Not Outweigh the Positive Effects on Key Observation Points and Protection of Biological Resources

The Modified I-15 alternative would reduce impacts on visual resources in certain areas. The relocation of unit 3 closer to I-15 will serve to protect key observation points including Benson mine, Stateline Wilderness, and the Mojave National Preserve. The SEIS concluded that Modified I-15 alternative would present fewer visual impacts in recreational areas to the west and north as compared to the proposed project and Mitigated Ivanpah 3. (SEIS 204.)

Glare is the only potential increased impact from choosing the Modified I-15 alternative, but the SEIS was "unable to determine impact from glare, but *could* be higher." (SEIS 203.) However, there is no evidence in the record indicating that this is a negative impact. No party to the Energy Commission proceeding or member of the public has complained about visual impacts from the highway or across I-15 as being unacceptable. Additionally, among the environmental intervenors in the Energy Commission proceeding, the opposition to the Project is based on the unmitigated impacts on biological resources, not visual resources. A marginal increase in visual impacts would certainly offset a reduction in desert tortoise and rare plant mortality.

Most relevant, in its comments to BLM on the FSA/DEIS, Sierra Club showed that Project reconfiguration along the Interstate 15 corridor would not present any significant human health impacts or safety hazards from glare beyond what is already anticipated by the current footprint. (Sierra Club Opening Brief to the California Energy Commission, at pp. 10-12.) Moreover, the Project would further minimize impacts from glare given Commission staff recommended conditions TRANS-3 and TRANS-4. Essentially, the power tower receivers and the I-15 facing-heliostats should be located at least 1,000 meters from the interstate. (*Id.*; Ex. 300 at p. 6.10-16.) The slight *potential* for a possibility of increased glare should not supersede the benefits to biological resources the Modified I-15 alternative provides.

Comment Supp-11-9: The Modified I-15 Alternative is Better for Air Quality Because It Will Have a Lower Mass of Construction Emissions

Although "the rate of emissions would be the same for the construction of both alternatives, the overall mass of emissions associated with the Modified I-15 alternative would be lower. . ." (*Id.* (emphasis added).) Operating emissions associated with operation of Modified I-15 alternative would be the same as the Mitigated 3 Alternative. (SEIS 119.) As the Modified I-15 alternative is likely to have slightly lower emissions due to the shorter construction time, it is the better choice for protecting the Mojave Desert's air quality.

Comment Supp-11-10: It is Unlikely That Any Cultural Resources Will be Impacted Because the Larger, Original Project Did Not Impact any Cultural Resources

The DEIS's inventory of historic resources is sufficient for most of the Modified I-15 alternative. (SEIS 138.) Although impacts to specific resources in the reconfigured Ivanpah 3 location are unknown, the original, larger project would not have had an adverse impact on any known or unknown resources. (SEIS 139.)

Comment Supp-11-11: The Modified I-15 Alternative will Reduce the Potential of Flash Flooding

The DEIS concluded that the location of the project on an active alluvial fan was subject to flash flooding. (SEIS 158.) Based on the Modified I-15 alternative reduced acreage, it is likely that the alternative has an overall lower risk for stormwater damage impacts. (SEIS 161.) Additionally, the stormwater impacts are likely to be the "same or lower than those in Mitigated Ivanpah 3." (SEIS 203.) Impacts from stormwater flooding events are a serious concern, and the Project must minimize them to the maximum extent feasible. As such, the Modified I-15 alternative is the environmentally superior option in terms of stormwater and drainage issues.

Comment Supp-17-4: The modified I-15 alternative moves the project further from the Preserve boundary and is likely an improved option for desert bighorn sheep, and perhaps would result in slightly less impacts on desert tortoise, as indicated in the

document. While it may be slightly less visually impacting from Clark Mountain, it probably is a greater visual impact for visitors enjoying views of Clark Mountain from I-15.

Comment Supp-19-5: Of the alternatives considered, Defenders prefers the I-15 Alternative that the Sierra Club previously submitted to BLM and CEC. FSA/DEIS, page 4-44. Sierra Club's alternative would have moved all three units along the highway, taking full advantage of the degraded, marginal habitat adjacent to I-15. By contrast, the Modified I-15 Alternative moves only Unit 3 to the highway area. DSEIS, page 25. Although Defenders prefers the Sierra Club's I-15 Alternative, the Modified I-15 Alternative would still reduce many impacts to biological resources, as described in the DSEIS:

The reconfiguration of the proposed Ivanpah Unit 3 to a site adjacent to I-15 would likely result in a reduction in overall impacts to biological resources. For desert tortoise, the Modified I-15 Alternative site would be located within an area already impacted by the proximity of the highway. It is estimated that 315 acres of the reconfigured location of Ivanpah Unit 3, equivalent to 25 percent of the Unit, is adversely impacted by the presence of the highway. Habitat is variable, with areas located below 2,750-feet in elevation consisting of lower quality habitat due to terrain (flat topography with fewer washes), lower forage quality, and proximity to the highway. Fewer tortoises and burrows have been reported at the alternative site (Berry 1984, Cashen 2010), although formal surveys have not been conducted. DSEIS, page 136.

Comment Supp-19-7: The Modified I-15 Alternative is somewhat superior to the Mitigated Ivanpah 3 Alternative. Although the latter claims to avoid rare plant communities and desert tortoises, in fact only those rare plants and tortoises observed on the 433-acre mitigation area would be avoided. Rare plant occurrences and desert tortoises in the remaining 3,700 acres would still be affected. DSEIS, page 194. By contrast, the Modified I-15 Alternative avoids more tortoises and rare plants, and utilizes land near the highway which has marginal habitat value. The Modified I-15 Alternative would reduce impacts to golden eagles, which are protected under the Bald and Golden Eagle Protection Act, 16 U.S.C. §§ 668 et seq., and the Migratory Bird Treaty Act, 16 U.S.C. §§ 703 et seq., by increasing the buffered distance from suitable nesting habitat and human activities associated with the project. DSEIS, page 130. The Modified I-15 Alternative would also have a lesser impact on Nelson's bighorn sheep by broadening the movement corridor along the north side of the project area. DSEIS, page 129.

In conclusion, the Modified I-15 Alternative may reduce impacts to biological resources more than would the Mitigated Ivanpah 3 Alternative. However, neither of these alternatives completely avoids such impacts. Moreover, the two alternatives taken together do not represent a reasonable range of alternatives pursuant to NEPA. *See* 50 C.F.R. § 1502.14(a). Only a thorough alternatives analysis, covering the full spectrum of alternatives including a private land site alternative, will enable BLM to make an informed decision concerning the siting of this project.

Opposition to the Modified I-15 Alternative:

B. The Modified I-15 Alternative
The Modified I-15 Alternative would present significant technical problems, fail to meet the time deadline necessary to commence construction in 2010 and thus fail to meet federal and state policy objectives. As noted in the SDEIS, it would present the same types of biological impacts as those that would be associated with the Mitigated Ivanpah 3 Alternative; since SDEIS and CEC Staff agree that both alternatives would have negative desert tortoise impacts, and since the CEC Staff has concluded, based on extensive analysis of a very thorough record, that these impacts would be less than significant under the Mitigated Ivanpah 3 Alternative, any of the speculative benefits claimed for the Modified I-15 Alternative relative to the Mitigated Ivanpah 3 Alternative, if in fact there were any at all, would be minimal at best. Moreover, as the SDEIS concludes and as has been uncontested in the CEC proceeding, the Modified I-15 Alternative would have potentially greater impacts to Visual Resources, being located much closer to I-15 (only 1,000 feet from I-15). The Modified I-15 Alternative would therefore not be preferable with respect to the BLM's purpose and need for this project, and should not be selected as the basis for a BLM decision.

1. The Modified I-15 Alternative Is Not Preferable Considering All Impacts
   The CEC Staff, after extensive analysis of an exceptionally thorough record established through an adversarial proceeding allowing cross-examination of witnesses, determined not only that the Mitigated Ivanpah 3 Alternative would have a less-thansignificant biological impact, including its impact on desert tortoise, and that relocating the Ivanpah 3 unit nearer the highway, as the Modified I-15 Alternative would attempt to do, would not avoid or minimize desert tortoise or other biological resource impacts. In other words, under either alternative, there would be biological impacts, but under either alternative, those impacts would be at a less-than-significant level. This latter conclusion, that the Modified I-15 Alternative would not avoid or minimize desert tortoise impacts, is also echoed in the SDEIS.

2. The Modified I-15 Alternative Could Not Be Made Technically or Financially Feasible in Time to Meet ARRA Deadlines.
   The Modified I-15 Alternative, while more than adequately characterized for purposes of NEPA alternatives evaluation, lacks sufficient technical detail to allow for the precise engineering required for the planning and contracting necessary to proceed with an EPC contract. It therefore would not allow for the detailed cost-revenue analyses required to support project financing. This detail would require a minimum of 3 to 4 months of further characterization and engineering analyses, after which additional time would be required for updating project financing analyses. It is clear, however, that the substantial changes needed to develop a unit in the area proposed by the Modified I-15 Alternative, relative to the small changes required for the Mitigated Ivanpah 3 Alternative, would substantially increase costs. Since the irregular shape of the land identified for a third unit by the Modified I-15 Alternative is not conducive to the central optical focus required for power tower technologies such as that to be deployed

at ISEGS, it is likely that the size of the third unit would have to be significantly decreased, reducing revenues.

Increased costs and decreased revenue would further jeopardize project financing, and hence project viability, absent a significant increase in PPA pricing. Even if the counterparties to the PPAs would agree to such increased pricing, the negotiation of increased prices, which would be subject to Independent Evaluator participation under CPUC rules, and the time required for CPUC review and approval of the revised contracts, would take considerable time and could not be started until after financial analyses required to justify the price increases were completed. CPUC approval of the PPAs would be a condition precedent to closure of project financing. Thus, there is considerable uncertainty associated with the ability to proceed with this Alternative.

In short, the Modified I-15 Alternative would require at least six months of additional analyses, negotiations, contract and financing revisions, and regulatory contract approvals before financing could be closed, jeopardizing Section 1603 incentives. Closure of financing, as discussed above, is a necessary prerequisite to releasing the funds that would enable Applicant to meet the requirements of the ITC grant before the deadline elapses in 2010. Without the ITC grant, project financing would collapse, and the project could not be implemented. The Modified I-15 Alternative simply could not be made to meet the federal or state policy objectives for fast-track projects.

Response: *BLM appreciates the recommendations for which alternative to select as the preferred alternative. These comments, and their rationale, have been considered in the selection of the preferred alternative in the FEIS, and will be considered in the ROW grant decision in the Record of Decision.*

3.0 PURPOSE AND NEED

3.1 Scope of Purpose and Need

Comment Supp-8-2: As the Center pointed out in our comments on the DEIS, the purpose and need statement in the DEIS was unlawfully narrow and thereby cabined the choice of alternatives. Unfortunately, the Supplemental DEIS fails to cure this error. . The BLM is still relying on a faulty Purpose and Need description that unnecessarily narrows the range of alternatives (and still ignores the requirements for NEPA analysis of the proposed plan amendment). BLM can, and indeed must, undertake full consideration of alternatives under NEPA when reviewing a plan amendment and proposed project and (as discussed extensively in the Center's 2/10/2010 comments), there are several potential feasible alternatives (including several 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. The BLM still fails to consider any off site alternatives that could avoid impacts to the resources of these public lands.

Response: *The range of alternatives identified in Section 3 of the FEIS is not constrained by the purpose and need, the applicant's objectives, or anything other than technical and economic feasibility and the expected impacts associated with each alternative. The range of alternatives considered includes Private Land, locations and technologies not proposed by the applicant, and alternatives outside of BLM's jurisdiction to select. Four of these alternatives were carried into Section 4 for more detailed analysis – again, one of these alternatives (the Modified I-15 alternative) is not considered to meet the applicant's objectives, and is outside of BLM's jurisdiction to select.*

3.2 Inclusion of Timeframes in Purpose and Need

Comment Supp-20-1: The DEIS identified three project objectives that were intended to reflect the Applicant's objectives and BLM's stated Purpose and Need of the Project. These three objectives were; 1) to safely and economically construct and operate a nominal 400-MW, renewable power generating facility in California capable of selling competitively priced renewable energy consistent with the needs of California utilities; 2) to locate the facility in. areas of high solarity with ground slope of less than 5 percent; and, 3) to complete the impact analysis of the project by the first quarter of 20l0 so that, if approved, construction could be authorized in 2010 and beyond; The DEIS indicated that these objectives were considered in the comparison of alternatives as required under the National Environmental Policy Act (NEPA).

EPA supports BLM's determination in the SDEIS to remove the set generation capacity or output of the Project from the purpose and need statement. By removing the 400 megawatts (MW) specified in the DEIS, BLM is able to consider other alternatives that could have lesser or greater generation capacities (at pg. 8). The SDEIS does not address the timeline constraint specified by the third objective. To allow for evaluation of a full range of reasonable alternatives, EPA continues to recommend that the Project's objectives should not restrict the Project to a specific timeline.

Recommendations:

- Revise the Project's objectives to remove the time constraint for completion of the impact analysis so that construction could be authorized. The deadline imposed by the time constraints appears to preclude further analysis of the Project's impacts, which may unduly restrict the consideration of alternatives. Rather thal1limiting the alternatives to those able to meet a certain deadline, BLM should identify and evaluate a full range of reasonable alternatives and specify whether or not each can meet the desired deadline. This would enable decision makers and the public to make informed decisions about whether or not the benefit of meeting the desired deadline outweighs the benefits of other alternatives that would not meet that deadline.
- Discuss in the FEIS whether the 2010 timeframe to begin construction served as a key criterion for identifying, evaluating, or eliminating alternatives from future analyses.

Response: *Section 3 of the FEIS has been revised to remove the ground slope and timeline objectives. Although these were stated to be criteria for the evaluation of alternatives in the DEIS, neither was actually used as a rationale to eliminate any alternative from detailed evaluation. Therefore, stating that these were considerations was inaccurate, and they have been removed from the FEIS. The ground slope information is still relevant to the comparison of impacts between alternatives, because some alternatives would require a greater degree of grading than others. This evaluation has been kept in the alternatives discussions.*

4.0 CUMULATIVE IMPACTS

4.1 Other Future, Foreseeable Projects

Comment Supp-8-9: 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 other proposed projects in this area, including at minimum the proposed Silver State solar project in Nevada and the proposed Eldorado-Ivanpah Transmission Project ("EITP") transmission line upgrade and substations that are currently also undergoing environmental review by BLM.

The EITP is necessary for this proposed project and it is clear that the EITP is both a cumulative and a connected project and should have been considered by BLM in a single environmental review. Indeed the stated purpose of the EITP is to facilitate access to the California energy market for the proposed Ivanpah project and solar projects in Southern Nevada. Although the purpose and need statement for BLM in the EITP is unreasonably narrow, it is clear that the purpose of the EITP project is to connect the proposed solar projects with the California market. As the EITP DEIS states, an objective of the project is "[t]o connect renewable energy sources in the Ivanpah Valley area." EITP DEIS at 1-11 (Joint State and Federal Objectives). Similarly, as the project proponent for the EITP, Southern California Edison ("SCE"), recently stated in a filing with the California Public Utilities Commission ("CPUC")

Project Overview

1. EITP, which primarily consists of a new substation and 35-mile transmission line upgrade, will interconnect up to 1,400 MW of new renewable generation (primarily solar) near the southern California-Nevada border, including Brightsource Energy's 400 MW Ivanpah Solar Energy Generating System (ISEGS), which is currently under regulatory review at the California Energy Commission (07-AFC-05).
2. EITP will provide the electrical facilities and capacity to facilitate access and delivery of new solar generation in California and Nevada.
3. EITP will allow new solar projects in southwestern Nevada to interconnect into the western states market.

SCE, Eldorado-Ivanpah Transmission Project (EITP) Backgrounder - May 2010, Submitted as Appendix A to SCE's (U 338-E) Notice of Ex Parte Communication filed May 28, 2010.

Comment Supp-8-10: The proposed Silver State solar project is a similar and cumulative action given the timing of the environmental review and its impacts on the same local biological resources in the Ivanpah Valley as the proposed Ivanpah project. Moreover, the Silver State solar project is also a connected project both literally and figuratively because it will also connect to the EITP lines and substations when they are upgraded and is depending on the EITP for access to the California markets.

In light of the CEQ guidelines and the case law, the proposed Silver State solar project and the proposed EITP should have been considered in conjunction with the proposed Ivanpah project in a single environmental review. Had BLM done so, it would have properly framed the questions before it and have fully considered the impacts to the Ivanpah Valley from the *de facto* solar zone that is being created in this area without any land use planning being undertaken and without consideration of the overall impacts of the proposed wide-spread, sprawling, large-scale industrialization of the Valley as a whole.

At minimum, the BLM should consider all of the impacts of the proposed project, along with impacts of the transmission upgrade and substations and the proposed Silver State project as direct impacts of connected projects. Even assuming for the sake of argument alone that the impacts could be described as indirect effects or "secondary" or "induced" effects attributable to the proposed project and the necessary transmission line upgrade and the projects that are facilitated by that upgrade such as the Silver State proposal, 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 combine or even coordinate this NEPA process with the approval process for all of the similar, cumulative, and connected actions BLM has undermined full and fair public review of the impacts of the project in violation of NEPA. BLM must disclose and consider all of the connected, cumulative and similar projects' significant impacts together. To do otherwise would be unlawful. Cumulative impacts analysis in an EIS alone is not sufficient where projects are so closely connected as here and will result in a new industrial zone being created on public lands that now serve multiple uses including providing high-quality occupied habitat for a threatened species.

Response: *BLM has reviewed the comments provided with respect to cumulative impact analysis in the DEIS and SDEIS, including the temporal and geographic scope of other projects that may contribute to cumulative impacts, the means of performing the impact analysis, and the mitigation proposed to address cumulative impacts. The Cumulative Scenario section has been revised , and the cumulative impact analyses,*

which had previously been included in the resource-specific sections, have been combined into the revised section. By including the identification of other projects, and all resource analyses into a stand-alone section, the FEIS addresses the difficulty in tracking the projects through the DEIS.

4.2 Mitigation for Cumulative Impacts

Comment Supp-19-4: Third, the project's cumulative impacts are significant. BLM concedes that "even with mitigation, cumulative impacts could result in substantial impacts to wildlife and special status animal and plant populations." DSEIS, page 136. The multiple projects planned for the region would increase fragmentation of desert tortoise habitat, disrupt migration corridors, increase mortality due to construction hazards and translocation stress, and ultimately weaken a genetically distinct population of tortoises. Given RETI's preference for private lands, the seriousness of the impacts, the uncertainty of mitigation measures and the wide range of cumulative impacts in the region, BLM must analyze a private land alternative for the Ivanpah SEGS project.

Response: *BLM has reviewed the comments provided with respect to cumulative impact analysis in the DEIS and SDEIS, including the temporal and geographic scope of other projects that may contribute to cumulative impacts, the means of performing the impact analysis, and the mitigation proposed to address cumulative impacts.*

In the DEIS, the mitigation measures proposed in each resource section were developed to address not just the direct impacts, but also the indirect and cumulative impacts associated with that resource. In addition, by combining the cumulative impacts analyses in the revised Cumulative Scenario section, the FEIS also specifically evaluates whether additional mitigation measures are required.

Reduction of cumulative impacts to biological resources was also a substantial issue in BLM's decision to analyze the Mitigated Ivanpah 3 and Modified I-15 Alternatives in the SDEIS.

4.3 Growth Inducing Impacts

Comment Supp-8-8: Although the Supplemental DEIS does provide a bit more detail on some aspects of the proposed project – now called the Mitigated Ivanpah 3 Alternative – than was provided in the DEIS, it does not cure many of the shortcomings of the DEIS. The Supplemental DEIS still ignores the fact that by analyzing connected projects piecemeal BLM is undermining rational planning and unlawfully segmenting the environmental review. Attached are two maps produced by the Center: the first shows the Ivanpah Valley as it is now and the second shows the Ivanpah Valley with the proposed solar, wind and transmission facilities primarily on public lands. The change that would occur from a largely natural area to a largely industrial zone is both significant and unexamined by the BLM.

NEPA's implementing regulations explain that agencies should consider connected, cumulative, and similar actions in the same impacts statement. "Connected actions" must "be considered together in a single EIS." *Thomas v. Peterson*, 753 F.2d 754, 758 (9th Cir. 1985); 40 C.F.R. § 1508.25(a)(1). Connected actions are those actions that:

i. Automatically trigger other actions which may require environmental impact statements.
ii. Cannot or will not proceed unless other actions are taken previously or simultaneously.
iii. Are interdependent parts of a larger action and depend on the larger action for their justification.

Response: *The revised cumulative analysis presented in the FEIS estimates the direct, indirect, and cumulative impacts that would occur assuming that all of these proposed projects are implemented. Although this may over-estimate the impacts that will actually occur, it presents a conservative analysis, based on an assumption that the ISEGS and EITP projects will increase the likelihood of the other solar projects being developed.*

4.4.1 Project-Specific versus Programmatic Analysis

Comment Supp-10-2: As to cumulative impacts, it is clear that the cumulative impacts of this project will be significant. SDEIS at 136. We regret that, as far as we were able to determine, the SDEIS does not address the creation of a de facto solar energy zone in the Ivanpah Valley and across the border in Nevada, an area which has not been identified as a solar energy study area by BLM or as a competitive renewable energy zone by California's Renewable Energy Transmission Initiative - an issue we raised in our comments on the draft. Equally importantly, the supplement's treatment of cumulative impacts is, like the draft's, almost entirely qualitative. Indeed, rather than provide quantitative information about these impacts, the supplement simply (and repeatedly) references the draft's treatment of them. See, e.g., id. 146 ("The impact of the Modified 1-15 Alternative on cumulative land use impacts in the Ivanpah Valley, and the southern California desert in general, would be almost exactly the same as those identified for the proposed project."). We continue to believe that more quantified estimates of cumulative impacts are needed and that the inclusion of such information would strengthen this document and the BLM's decision-making process.

Response: *This comment requests that the project-specific Ivanpah SEGS EIS be expanded to partially serve the purpose of the Programmatic Solar EIS. In general, it is BLM's preference to develop Programmatic NEPA documentation, and use it as a basis for site-specific projects, which is why the process for the Programmatic Solar EIS is occurring. However, at the same time, BLM has a responsibility to perform a timely environmental review in response to individual applications. Although the Programmatic Solar EIS has not been completed, the Ivanpah SEGS EIS has benefitted from the*

Programmatic process because many of the reviewers on the BLM review teams are involved with both the site-specific EIS and the Programmatic.

5.0 CDCA PLAN AMENDMENT

5.1 Scope of Amendment

Comment Supp-13-14: The two alternatives analyzed in the SDEIS suffer the same lack of compliance issues with the CDCA Plan as amended by the 2002 NEMO Plan Amendment that we identified for the proposed action in our February 11 letter.

The NEMO Plan's mitigation for Category III habitat applies to projects of less than 100 acres. NEMO at 2.27. The two alternatives in the SDEIS are over forty times the maximum acreage for projects covered under the NEMO Plan. The NEMO Plan did not address California State interests in the Northeastern Mojave desert tortoise population. The NEMO Plan does not even list CDFG as one of the agencies consulted (See NEMO Plan Chapter 7). The NEMO Plan failed to address impacts to California's population of Northeastern Mojave desert tortoises. The BLM must therefore fully address impacts to the Northeastern Mojave ESU and to California's interests in the FEIS.

BLM Handbook 1745 - *Introduction, Transplant, Augmentation, and Reestablishment of Fish, Wildlife, and Plants* - requires that "Decisions for making introductions, transplants, or reestablishments should be made as part of the land use planning process (see BLM Manual Section 1622). Releases must be in conformance with approved RMPs. A Land Use Plan Amendment must be prepared for proposed releases if management direction is not provided in the existing Land Use Plan (see BLM Manual Section 1617, emphasis added)." The two new proposed alternatives and the other projects proposed for the project area will result in large scale movement and translocation of desert tortoises. There is no consideration in the California Desert Conservation Area Plan as amended by the NEMO Plan for desert tortoise translocations on this scale. Therefore, a plan amendment is required to comply with BLM policy.

The BLM must adhere to its own policy and prepare an FEIS that proposes and analyses an amendment to the CDCA Plan that provides the required management direction with respect to desert tortoise translocation prior to considering this project. It could then use that guidance to develop a translocation plan for desert tortoises in the project area that includes the required site specific analyses to comply with BLM policy, FLMPA, and NEPA.

Response: *The translocation discussed in this comment, as defined in the BLM Manual 1745 – Introduction, Transplant, Augmentation, and Reestablishment of Fish, Wildlife, and Plants (1992), applies to movement of individuals from existing habitat to locations that are not currently habitat. It does not apply to the smaller-scale movement*

of individuals over short distances, within the same habitat. Therefore, the restrictions discussed in the comment do not apply.

6.0 GENERAL FLPMA/NEPA ISSUES

6.1 Impact Analysis

Comment Supp-10-3: NRDC is a strong supporter of renewable energy and recognizes the need for utility-scale projects to effectively address global warming. We believe that the NEPA process is key to determining which projects proposed for BLM-administered lands should be permitted to go forward and under what terms and conditions. We are sympathetic to the fact that this project is the very first utility-scale project that the Bureau has reviewed under NEPA and we have already seen, in environmental documents on other projects, how much the agency has learned from it. We urge the BLM to continue its efforts to comply with NEPA in connection with this and other fast track projects.

Response: *The comment regarding the sufficiency of the impact analysis Is appreciated, and was considered in the development of the FEIS.*

7.0 PROJECT SCHEDULE

Comment Supp-8-15: On May 4, 2010, the Center and the Sierra Club provided a letter to the BLM requesting a full 90-day comment period for the Supplemental DEIS. To date, we have received no response. The BLM's regulations state that 90-days public review shall be provided for an environmental impact statement for a plan amendment.

> Ninety days shall be provided for review of the draft plan and draft environmental impact statement. The 90-day period shall begin when the Environmental Protection Agency publishes a notice of the filing of the draft environmental impact statement in the Federal Register.

43 C.F.R. §1610.2(e). Because the Supplemental DEIS is an environmental impact statement for the proposed plan amendment, a 90-day public review period should have been provided.

Moreover, the CEQ regulations for NEPA state that the agency must "prepare, circulate, and file a supplement to a statement in the same fashion (exclusive of scoping) as a draft and final statement." 40 C.F.R. §1502.9(c)(4). Because the DEIS was required to be circulated for 90 days, the Supplemental DEIS should also have been circulated for 90 days as well. Despite this clear direction, the BLM provided only 45 days to review this Supplemental DEIS. Notice of Availability of the Supplemental Draft Environmental Impact Statement for the Proposed Ivanpah Solar Electric Generation System Project, San Bernardino County, CA, 75 Fed. Reg. 19992-19993 (April 16, 2010).

It appears that BLM attempted to justify the improperly short comment period for the Supplemental DEIS by concluding without explanation that "it does not add to the plan amendment analysis already contained in the DEIS." Supp. DEIS at 6. However, because the Supplemental DEIS provides environmental analysis for the "proposed project," it clearly provides environmental analysis for the plan amendment as well. BLM cannot separate the plan amendment from the proposed project – the plan amendment is necessary for the project approval and is an integral part of the proposed project. Further, the Supplemental DEIS states without any support that BLM made a determination that the DEIS alone "provides the environmental analysis necessary to support the consideration of the Plan amendment." Supp. DEIS at 56, 145 (same). Because the DEIS is not a decision document, this statement makes little sense. Moreover, the statement appears to imply that BLM has already made a determination regarding the plan amendment that must be informed by the environmental review as a whole. As BLM is well aware, 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.")

In addition, it is clear that the Supplemental DEIS does in fact provide additional environmental review relevant to the proposed plan amendment. For example, evaluation of alternatives is a focus of the Supplemental DEIS, and review of alternatives is expressly required for the proposed plan amendment pursuant to the California Desert Conservation Area ("CDCA") Plan 1980 as amended. The CDCA Plan 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. The information in the Supplemental DEIS is relevant to the review and consideration of all of these requirements for the proposed plan amendment and others.

Because the Supplemental DEIS is in fact part of the environmental review for the draft plan amendment, the full 90-day period should have been provided to the public to comment on the Supplemental DEIS.

Comment Supp-8-16: In light of the inadequacy of the environmental review to date, we urge the BLM to again revise and re-circulate the DEIS and provide 90-days for public review (or prepare another supplemental DEIS and provide an adequate period for public review) before making any decision regarding the proposed plan amendment and right-of-way application. In the event BLM chooses not to again supplement or revise the DEIS to provide adequate environmental review and the required time period for public review, the BLM should reject the right-of-way application and the proposed plan amendment.

Comment Supp-15-1: The BLM's regulations state that 90-days public review shall be provided for an environmental impact statement for a plan amendment.

> Ninety days shall be provided for review of the draft plan and draft environmental impact statement. The 90-day period shall begin when the Environmental Protection Agency publishes a notice of the filing of the draft environmental impact statement in the Federal Register.

43 C.F.R. §1610.2(e). Because the Supplemental DEIS is an environmental impact statement for the proposed plan amendment, a 90-day public review period should have been provided.

In contrast, the BLM notice states that the public review period for the Supplemental DEIS will be only 45 days. Notice of Availability of the Supplemental Draft Environmental Impact Statement for the Proposed Ivanpah Solar Electric Generation System Project, San Bernardino County, CA, 75 Fed. Reg. 19992 19993 (April 16, 2010).

It appears that BLM attempted to justify the improperly short comment period for the Supplemental DEIS by concluding without explanation that "it does not add to the plan amendment analysis already contained in the DEIS." Supp. DEIS at 6. However, because the Supplemental DEIS provides environmental analysis for the "proposed project," it clearly provides environmental analysis for the plan amendment as well. BLM cannot separate the plan amendment from the proposed project – the plan amendment is necessary for the project approval and is an integral part of the proposed project. Further, the Supplemental DEIS states without any support that BLM made a *determination* that the DEIS alone "provides the environmental analysis necessary to support the consideration of the Plan amendment." Supp. DEIS at 56, 145 (same). Because the DEIS is not a decision document, this statement makes little sense. Moreover, the statement appears to imply that BLM has already made a determination regarding the plan amendment that must be informed by the environmental review as a whole. As BLM is well aware, 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.")

In addition, it is clear that the Supplemental DEIS does in fact provide additional environmental analysis relevant to the proposed plan amendment. For example, evaluation of alternatives is a focus of the Supplemental DEIS, and review of alternatives is expressly required for the proposed plan amendment pursuant to the California Desert Conservation Area ("CDCA") Plan 1980 as amended. The CDCA Plan 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. The information in the Supplemental DEIS is relevant to the review and consideration of all of these requirements for the proposed plan amendment and others.

Because the Supplemental DEIS is in fact part of the environmental review for the draft plan amendment, the full 90-day period should be provided to the public to comment on the Supplemental DEIS.

Therefore, the Center and Sierra Club request that BLM extend the comment period for the Supplemental DEIS for the full 90-day period required in the regulations.

Response: *The ISEGS Draft EIS was circulated for 90 days because it contained a proposed amendment to the CDCA Plan. Although the Supplemental DEIS provided analysis of two additional alternatives which were identified during the DEIS comment period, The CDCA Plan amendment would be unaffected by either of these alternatives. The text of the Plan amendment remains unchanged from that of the DEIS. The BLM will be accepting additional public comment on the CDCA Plan Amendment/FEIS within 30 days after the Environmental Protection Agency publishes the Notice of Availability in the Federal Register.*

8.0 MOJAVE NATIONAL PRESERVE

Comment Supp-17-1: There is a consistent failure in the DEIS and supplemental DEIS to recognize that this project lies in close proximity to the third largest National Park unit in the lower 48 states, Mojave National Preserve. The Preserve's Clark Mountain unit lies less than a mile to the west of the project site. Section 3.2 on page 12 describes the locations and recognizes Primm Casinos and the nearby golf course, but fails to acknowledge a vast area set aside for protection of desert resources. All figures should be modified to show the boundary of the Preserve.

The Coliseum Road, shown on Figure 3.1 on page 13 is the primary visitor access route from the east to the Clark Mountain unit of Mojave National Preserve. This road is currently a primitive, graded dirt road that traverses a mostly undisturbed desert bajada. That situation will change drastically when the Ivanpah project is built and will be a substantial impact to the visitor experience. This figure and others are drawn at a scale that excludes the Mojave National Preserve boundary that lies just outside the image to the west. This is less than full disclosure to the public and should be corrected to incorporate reference to the Mojave National Preserve.

Response: *Throughout the DEIS, SDEIS, and FEIS, BLM has included the evaluation of receptors within the Mojave National Preserve in its impact analyses. This has included wildlife within the Preserve which might enter the proposed project property, air*

emissions from the facility, and visual and recreational impacts to persons within the Preserve. That analysis has concluded that, in some cases, impacts will occur. Although most of these impacts can be mitigated, others, such as visual impacts to hikers within certain portions of the Preserve, cannot be. BLM has considered these impacts in its selection of a Preferred Alternative in the FEIS, and looks forward to continuing our dialogue with the Preserve as we develop a final decision on the ROW grant.

In response to this comment, BLM considered moving the discussions of the impacts to receptors within the Preserve to a stand-alone section. However, this would result in dissecting the existing analyses – for instance, some biological analyses would be in the Biological Resources section, and some would be in the Preserve section. The same thing would happen with visual resources. It is possible that a stand-alone section could be provided to summarize the Preserve impacts in a single location, while keeping the resource discussions intact – however, this would result in taking the impact discussions out of context, which presents its own risks.

After considering the pros and cons of developing a stand-alone section, BLM determined that the impacts to the Preserve are best presented within the resource sections.

9.0 AIR QUALITY

Comment Supp-17-6: Impact: Burning of natural gas in large quantities close to the Preserve and the disturbance on the site will cause air quality degradation.

Potential Mitigation
Project should install monitoring equipment to track particulates and carbon emissions
BLM should require additional mitigation if pollutants are detected above a certain level.

Response*: The air quality modeling conducted for the project was not made specific to the Preserve because the facility's maximum permitted stationary source emissions of NOx, PM, and SOx are less than 12, 6 and 2 tons per year; the predominate wind patterns in the site area are directly away from the Mojave National Preserve; and the maximum project impacts all occur well east and outside of the portion of the Clark Mountain portion of the Preserve and north of the project site well away from the main portion of the Preserve. When considered together, this information is sufficient to conclude that the Mojave National Preserve will not be significantly impacted from the ISEGS project.*

Considering these regulatory and technical issues, specific analysis of air quality within the Mojave National Preserve is not considered necessary.

10.0 BIOLOGICAL RESOURCES

10.1 Biological Resources - General

Comment Supp-8-6: The "reduced footprint" or "mitigated Ivanpah 3" alternative is proposed to reduce the impact to biological resources, however, it will still result the elimination of an extensive amount of currently undisturbed desert that provides habitat for desert tortoise, rare plants other rare organisms. Exactly how many acres remains unclear in the Supplemental DEIS. The project size is identified as 3,640 acres in the Table 3-1 Summary of Applicant's Updates to its ISEGS Development Plans (SDEIS at 10), however Table 3-2 Mitigated Ivanpah 3 Alternative, Acreage of BLM Right-of-Way indicates that 3,564.2 acres is required (SDEIS at 14). Both of these "reduced footprint" acreages are greater than the original ROW application of 3,400 acres (SDEIS at 9) - a 5-7% increase in project impact area and all in prime desert tortoise habitat.

Regardless, the "mitigated Ivanpah 3" alternative still leaves unresolved all of the same issues that plague the "proposed project" The Center submitted extensive comments on problematic issues with the DEIS, yet the addition of this alternative fails to address the majority of the issues raised in the Center's and others comments. Although some acres have been removed under this alternative there is no showing that that area is of as high value to the tortoise as the habitat that remains within the project footprint, and the opposite is likely the case. Moreover, the minimal reduction in the project size without reconfiguration and does not lessen the habitat fragmentation caused by the proposed project.

Comment Supp-8-7: Like the "mitigated Ivanpah 3" alternative, the I-15 alternative suffers from the same unclear potential acres of impacts. The project size is identified as 3,640 acres in the Table 3-1 Summary of Applicant's Updates to its ISEGS Development Plans (SDEIS at 11). Table 5-1 Modified I-15 Alternative, Acreage of BLM Right-of-Way indicates that 3,564.2 acres is required (SDEIS at 107), and the SDEIS (at 123 and 127) states this alternative would permanently impact approximately 4073 acres of occupied desert tortoise habitat – the same as the proposed project. In Bio 17 – desert tortoise compensatory mitigation is based on a 3,582 acre impact (SDEIS at 232). These varying impact acreages makes the Supplemental DEIS appear like it was not carefully written, and serves to confuse decision makers and the public. The varying acreages also shows that impacts have not been adequately evaluated. All of these stated acreages for this alternative exceeds the stated acreage in the original ROW application of 3,400 acres (SDEIS at 9) - a 5-7% increase in project impact area and all in desert tortoise habitat.

Unfortunately, the analysis of the I-15 alternative is sorely lacking. The analysis for biological resources relies on "reconnaissance- level surveys" and other general factors (SDEIS at 122). The SDEIS asserts that "there are fewer washes, and there are many dirt roads fragmenting the habitat." SDEIS at 122. No data are referenced in support of these statements. The comparative term of "fewer washes" assumes comparison with the proposed project's Ivanpah 3 site, but is not definitive. It fails to evaluate if the

"fewer washes" result in less acres of waters of the State that would be impacted than the proposed project, and admits that the evaluation has simply not been done (SDEIS Table 6-9, Comparison of Soil and Water Impacts at 163).

The SDEIS also fails to quantify the "many dirt roads" acreage as disturbed lands. While we agree that dirt roads do cause landscape level fragmentation, BLM has demonstrated successful revegetation of dirt roads where routes are closed as part of designation of a route network, reduction of route proliferation, and conservation of resources. If additional roads are present on the proposed site above and beyond the designated routes as established in NEMO route designation, then those routes should be closed through rehabilitated or other measures to protect the resources and reduce further route proliferation.

The analysis also states that "There are fewer desert tortoises and burrows within this alternative site, compared to the proposed project site", but again no data are referenced in support of these statements. Additionally the SDEIS (at 122) states "Biological resources within approximately 25% of the revised Ivanpah Unit 3 location are already impacted by the proximity of the highway." However, no reference is provided on how that calculation was determined or what the impacts of the highway are for the various biological resources swept into that statement. The Center is only aware of one broad-brush, out-of-season survey that was done for in this general area which is apparently identified as "Recent anecdotal information" (SDEIS at 127). This report did document fewer desert tortoise burrows compared to areas of the proposed project site. However, as recognized in the SDEIS, the I-15 alternative site is topographically diverse, and absent in-season surveys for desert tortoise (and other biological resources), the impacts from this alternative can not be adequately documented and analyzed.

The SDEIS acknowledges that rare plants surveys were not done on the I-15 alternative (SDEIS at 137) in any season. Despite the absence of survey data, the SDEIS concludes that impacts to rare plants "Impacts could be mitigated" (SDEIS Table 6-2, Comparison of Biological Resources Impacts at 138). This is little more than a conclusion based on the lack of data and the SDEIS fails to meaningfully identify impacts, provides no analysis, and therefore is inadequate. Because this and other data relevant to reasonably foreseeable significant adverse effects could have been collected without undue expense, the failure to collect this data is inexcusable under NEPA. 40 C.F.R. §1502.22(a).

In addition, no other resource surveys were done in the previously unsurveyed alternative area. It is speculative that fewer rare resources (both biological and cultural) occur in this area absent surveys. Additionally, the SDEIS recognizes that the "stormwater modeling analysis has not been performed for the reconfigured Ivanpah 3 site" (SDEIS at 113). The lack of environmental review and basic data for this alternative suggest that this alternative is simply a "straw man" alternative, despite the fact that it has *potential* to reduce the environmental impacts. The I-15 alternative was originally identified by the Sierra Club (SDEIS at 104) before the DEIS was prepared,

BLM could have done more to analyze this alternative or selected other nearby alternative sites with no known desert tortoise habitat and likely reduced the level of potential impacts even further. Because BLM failed to meaningfully analyze a reasonable range of alternatives and rejected consideration of feasible alternatives in both the DEIS and SDEIS, the environmental review is inadequate.

***Response**: Although detailed biological surveys of the reconfigured location of Ivanpah Unit 3 in the Modified I-15 Alternative have not been performed, a large amount of data exists upon which to base an analysis. This includes:*

- *Information from reconnaissance-level surveys provided by the applicant, CEC, and intervenors;*
- *Information on the geologic and topographic setting of the area (including the relation of the location to the mountains, Ivanpah Dry Lake bed, and I-15);*
- *Site-specific literature, much of it supplied by the intevenors, discussing the specific density of tortoises and plants on the property; and*
- *More general literature, again supplied by intervenors, discussing the expected impact of the highway on wildlife and vegetation in the area.*

The location is not remote from that of the proposed project – it is directly adjacent and closer to I-15, and is therefore very familiar to project staff. Based on the familiarity of the project staff with the site, and the large amount of other available information, BLM concludes that the level of information is sufficient to allow an evaluation and comparison of impacts associated with the alternative site.

Comment Supp-8-11: Similarly, although the Supplemental DEIS provides a bit more discussion of the re-routed ORV trails, there is no *analysis* of the impacts the re-routed trails might have on biological resources including the translocated tortoises and host tortoises or the likelihood that these re-routed trails would be used as anticipated. That is, will ORV riders travel several miles along the fenceline of an industrial facility? Or are they more likely (as experience shows) to cut off cross-country to more scenic areas and avoid the industrial facility. If so, the re-route of the trails must be analyzed in more detail and alternatives provided that would designate a route that will actually be used rather than one that is likely to lead to additional cross-country travel and route proliferation by ORV riders who do not wish to travel for several miles along an industrial fenceline. The BLM designed a route network when it designated the NEMO routes through a plan amendment, moving routes piecemeal without analysis of the actual use and purpose undermines that planning effort. As BLM is well aware, route proliferation results in damage to soils, wildlife, and plants. These and other issues remain unaddressed in the Supplemental DEIS or the DEIS.

***Response**: The trails in the area are primarily used to access the mountain areas, and the length of the trails following project development will not be substantially different from the current situation. Therefore, there is no reason to believe that cross-country travel off of the trails would increase following project development.*

10.2 Biological Resources - Tortoises

Tortoise - General

Comment Supp-17-5: Impact: The loss of 4,000 acres of desert tortoise habitat in the same recovery unit as the Preserve. Concerned about how that loss affects the recovery actions in the whole recovery unit, which includes the Las Vegas valley. Cumulatively, the NPS appears to be the primary conservation area in this unit and as such should receive substantial assistance through the mitigation fund in meeting desert tortoise recovery actions in the Preserve, including:

Potential Mitigation
Acquisition of private lands that are in critical desert tortoise habitat
Restoration of disturbed lands that are in critical desert tortoise habitat
Funding for education about the Mojave Desert
Research on juvenile tortoise and headstarting
Monitoring of the desert tortoise
Fencing and culverts along primary paved routes in high density critical habitat

Response*: The EIS has acknowledged the project's impact to desert tortoises and their habitat, and has developed Mitigation Measures to minimize and compensate for the impacts.*

Tortoise – Cumulative Impacts

Comment Supp-13-4: The footprint of the proposed action in the FSA/DEIS was 4,073 acres (about 6.4 square miles) of desert tortoise habitat. The footprint for both alternatives examined in the SDEIS is 3,564 acres (about 5.6 square miles) of desert tortoise habitat. The NEMO Plan identifies that there are 27,300 acres of BLM-managed public lands in the North Ivanpah Valley. Based on that data the proposed alternatives would consume 13% of the North Ivanpah Valley's public land. Since the North Ivanpah Valley accounts for 24% of their habitat, the footprint of the alternatives would consume 4-5% of the Northeastern Mojave ESU desert tortoise habitat in California.

Mitigating for direct impacts on this scale is difficult. However, other major projects are also being proposed in the North Ivanpah Valley not the least of which are an additional power plant and the DesertExpress railway. In the face of the massive cumulative habitat loss and fragmentation that will occur if these projects proceed, it is difficult to imagine how a viable tortoise population could persist in the North Ivanpah Valley. As such, the cumulative impacts threaten to eliminate nearly a quarter of the range of the Northeastern Mojave ESU in California. Neither of the two alternatives reviewed in the SDEIS will reduce these cumulative effects.

Comment Supp-13-8: In summary, the direct, indirect, and cumulatively impacts of the proposed project on the threatened desert tortoise will be severe. Since the Northeastern Mojave population is the most genetically distinct desert tortoise population in California, and the North Ivanpah Valley desert tortoises exhibit behavioral adaptations that may be important for the long-term survival of the species, protection of these tortoises may well be critical to the conservation of the entire listed population in California. We are extremely concerned that the impacts of the proposed project will endanger California's Northeastern Mojave desert tortoise population, and will place the entire Mojave desert tortoise population at risk.

Response*: The DEIS and SDEIS acknowledge and quantify the cumulative impacts to desert tortoises and their habitat as a result of the proposed project, and the other projects referenced in these comments.*

Tortoise – Reported Baseline Information

Comment Supp-13-3: The proposed power plant project will have severe direct, indirect and cumulative impacts on California's population of Northeastern Mojave desert tortoise Evolutionarily Significant Unit ("ESU"). These impacts include destruction and loss of habitat, take of tortoises, habitat fragmentation, population fragmentation, loss of connectivity, and loss of viability. The two alternatives proposed in the SDEIS would have similar impacts on desert tortoise to those discussed for the proposed action in our February 11, 2010 letter.

The SDEIS, like the FSA/DEIS, fails to provide crucial baseline information such as the amount of habitat in the Northeastern Mojave Recovery Unit in California, and fails to adequately document impacts to this resource. Without an adequate description of the ESU, a
full analysis of the impacts of the proposed project is impossible, nor is a meaningful comparison
of alternatives or the development of adequate mitigation measures possible.

As we described in our comments, the tortoises in the Ivanpah Valley differ from other desert tortoise populations in California, and the population's limited range, overall importance to genetic diversity, and behavioral adaptations underlie the need to conserve them. This is especially important given the threats posed by global climate change.

Comment Supp-13-5: The NEPA documents are unclear as to how many tortoises will be directly affected by each of the proposed power plant alternatives. How many, if any, individual desert tortoises would benefit directly from the "Mitigated Ivanpah 3" proposal is unclear. This is because (a) actual desert tortoise numbers on the ISEGS site has not been determined; and, (b) the current location of the three desert tortoises encountered during the protocol surveys conducted two years ago is unknown. The area occupied by the 433 acres that would be avoided under the proposal is an irregular polygon with a

width of approximately 1,000 feet. Any individual tortoises present in this area would still be subject to indirect effects from the project such as changes in social structure due to loss of the local population and reduction of home ranges or activity areas. The 2007 desert tortoise survey results indicate that burrow density is higher on Ivanpah 2 and Ivanpah 1 than on Ivanpah 3. Despite these facts, the SDEISmakes the extraordinary and unsubstantiated claim that for the Mitigated Ivanpah 3 Alternative which reduces the Ivanpah 3 plant by 433 acres "would have greater anticipated benefit than reduction in project footprint in other locations". SDEIS at 36.

Comment Supp-19-6: Defenders encourages BLM to take the steps necessary, including comprehensive desert tortoise surveys in the Modified I-15 Alternative area, to determine the quality of the habitat. Additionally, BLM has identified visual resources and recreation as resource areas that would be difficult to mitigate if the Modified I-15 alternative is implemented. While we appreciate the agency's mandate to manage for multiple use, we believe the impacts to biological resources are more significant than the impacts on visual resources and recreation.

Response*: The text in the FEIS has been revised to include both the actual number of tortoises identified in the surveys, and an estimate of the actual number based on other estimating methods.*

Tortoise - Connectivity

Comment Supp-13-6: Connectivity between desert tortoise populations is essential to maintain gene flow and genetic heterogeneity (Hagerty, 2008). The FSA/DEIS mentioned connectivity but provides no discussion or analysis. At least the FSA/DEIS mentioned connectivity; the SDEIS completely ignores the effects of the two "new" alternatives on connectivity altogether.

According to the *Draft Revised Desert Tortoise Recovery Plan* (at 46), connectivity between the Northeastern Mojave and Eastern Mojave desert tortoise ESUs is provided by the Mountain Pass area in California. Disruption of this connectivity poses a threat to the genetic diversity of the Mojave population as a whole. Because all three alternatives for the proposed project will impact tortoises in the area identified as providing this essential connectivity, impacts to connectivity between the tortoises in the Northeastern Mojave Recovery Unit and the adjacent Eastern Mojave Recovery Unit must be considered and fully addressed. The Ivanpah Valley desert tortoise population is threatened with isolation from tortoises in the rest of the Northeastern Mojave Recovery Unit by existing and proposed developments in Nevada's Primm Valley. The BLM must also consider connectivity between the Ivanpah Valley desert tortoise population and the rest of the Northeastern Mojave ESU. We had requested this in our February 11, 2010 letter.

Comment Supp-13-7: Fragmentation of occupied desert tortoise habitat results in smaller, isolated desert tortoise populations that become increasingly susceptible to

negative effects with decreased viability. Fragmentation is particularly problematic when population densities are low. The SDEIS recognizes that the new alternatives will fragment desert tortoise habitat but does not quantify the degree of fragmentation nor does it provide an analysis of the viability of the fragmented desert tortoise populations. The habitat in the 433 acres that will be avoided under the Mitigated Ivanpah 3 alternative is at the north end of the ISEGS project site. An additional solar power plant is proposed immediately to the east of this area, and the proposed DesertExpress railway line would pass to the north. Any desert tortoises in the avoided 433 acres would be isolated within this pocket of habitat. Indirect effects of the proposed project such as increased use by vehicles and "improvement" of dirt roads will lead to further fragmentation. The Ivanpah Valley desert tortoise population is threatened with isolation from tortoises in the rest of the Northeastern Mojave Recovery Unit by existing and proposed solar developments in the Primm Valley in Nevada. The proposed project will contribute to the fragmentation effects of these proposed and existing developments. These cumulative fragmentation effects must be considered and addressed in the FEIS.

Response*: The impact of the proposed project on the connectivity of tortoise habitat was evaluated in the DEIS, and was one of several reasons that the Mitigated Ivanpah 3 and Modified I-15 Alternatives were evaluated in more detail in the SDEIS. The comparative evaluation of the Mitigated Ivanpah 3 and Modified I-15 Alternatives in the SDEIS included an evaluation of their relative impact on connectivity, and concluded that the Modified I-15 Alternative would be preferable in terms of maintaining connectivity.*

Tortoise – Potential Mitigation (other than Land Acquisition)

Comment Supp-4-1: [The] comment refers to BIO mitigation for Desert Tortoise. He stated that the agencies needed to require that all compensation money received should be spent on acquisition of parcels with Desert Tortoise habitat. By collecting "in-lieu" fees, who knows how the money would be spent and that it would be wasted on administrative activities that would not directly benefit Desert Tortoise.

Comment Supp-19-8: For all its in-depth discussion regarding the relative efficacies of two reconfiguration alternatives, the DSEIS does not deal with the most basic of NEPA questions – how to avoid or mitigate for impacts to biological resources. The DSEIS in several places concedes that biological impacts from the project are significant. However, the document never addresses the core problem of affecting a genetically distinct population of desert tortoises in one of the highest elevation habitats where they are found. Moreover, the DSEIS does not once mention the issue of "in-lieu" mitigation, BLM and CEC's mitigation mechanism wherein the Applicant pays into a fund to be used at a later date for habitat acquisition or enhancement. These issues are pertinent to the alternatives analysis. Depending on the alternative adopted, more or less habitat acquisition will be required. BLM stated in the FSA/DEIS its intent to require mitigation at a 1:1 ratio for desert tortoise, but did not clarify which habitat acquisition or

enhancement actions would be included. FSA/DEIS, page 1-19. Mitigation should be discussed concurrently with an alternatives analysis, as one should inform the other.

The "in-lieu fee" mitigation plan raises many questions. BLM has required a 1:1 mitigation ratio and CEC has required a 2:1 mitigation ratio. As a "nested" mitigation plan, the two agencies have jointly instituted an overall 3:1 mitigation requirement. However, the agencies have yet to identify specific habitat acquisition or enhancement actions that will fulfill the requirement. It is in BLM's interest to ensure that the in-lieu fees manifest into actual on-the-ground improvement to desert tortoise habitat. Neither the FSA/DEIS nor the DSEIS currently contain adequate information to satisfy the public's interest in ensuring that the required fees translate into demonstrated benefits to the desert tortoise and other impacted species. BLM should strongly consider using its one-third mitigation requirement to acquire or enhance suitable desert tortoise habitat within the Northeast Mojave Recovery Unit where the Ivanpah site is located. This population of desert tortoises faces multiple threats, including habitat destruction and fragmentation, predation and disease. Targeted habitat acquisition could help the species to recover. *See* 1994 Desert Tortoise Recovery Plan, page 3.

Comment Supp-11-15: In addition to translocating desert tortoise, the agencies propose an applicant funded in-lieu fee program as compensatory mitigation. The problem is the fee program does nothing to protect the Ivanpah Valley tortoise population. The record shows that desert tortoise in the Ivanpah Valley are genetically distinct and therefore warrant protections that will ensure the survival of this unique population. According to Dr. Michael Connor: " 'The Ivanpah population appears to be a distinct assemblage, differing from other California populations in its matriarchal genealogy' … desert tortoise DNA [has] identified the Ivanpah population as being very different in California …I think it's indicative of how important that particular area is." (Tr. at pp. 428, 435 (Jan. 11, 2010).)

As a practical matter, the California Department of Fish and Game has yet to even identify any specific parcels for acquisition, and has only suggested lands for acquisition outside the Ivanpah Valley. (Ex. 310 at p. 2 (proposing land acquisition generally in the Shadow and Piute Valleys, West Mojave Desert area, and Mojave National Preserve).) Nor has the applicant take any steps to ascertain whether appropriate lands are available. As a result, the environmentally superior and most economical option is to minimize the need for salvage and replacement habitat in the first place. The applicant's reduced Ivanpah 3 will not measurably reduce salvage or the need for compensatory lands.

Response*: The EIS acknowledges that enhancement, both in the local project area and in the acquired lands, is a valuable tool in mitigation. During the SDEIS development and review period, BLM continued working the Energy Commission, USFWS, and CDFG to develop acceptable tortoise mitigation for ISEGS and other solar projects. The results of this effort are included within revised mitigation measure BIO-17 in the FEIS.*

Tortoise - Translocation – General

Comment Supp-11-14: As the record shows, translocation is not an appropriate mitigation strategy for the listed desert tortoise. Indeed, Energy Commission staff admitted, "translocation is a **salvage** operation. It's an avoidance measure trying to save the tortoise that can be saved. The entire [] site is considered a loss for supporting future desert tortoise." (Tr. at pp. 258-259 (Jan. 14, 2010).) An approach to protecting a threatened species that is nothing more than a "salvage" operation is unacceptable.

Worse, translocation does not work. The Science Advisory Committee found that desert tortoise translocation is fraught with long-term uncertainties and agencies should not consider it lightly as a management option. (Ex. 300 at 6.2-49.) Translocation is highly controversial due to the low success rates everywhere it has been attempted on any significant scale. (Ex. 942 at p.4.) The most recent evidence is the 110,000-acre expansion at the Fort Irwin military training center. Currently, DOD is translocating tortoises from two separate areas: one area is 23,000 acres and the other is 69,500 acres. (Ex. 945 at p. 9.) Biologists have been studying the completed portions of the effort for just over one year using measures of success such as survival, dispersion, burrow use, reproduction, genetic assimilation, and habitat use monitoring 216 translocated, 108 resident, and 109 control individuals. (*Id*.) The most recent results for the Fort Irwin monitored desert tortoises were issued at the Desert Tortoise Council Symposium on February 27, 2010; **the results document an overall 45% mortality level for translocated desert tortoise.** (Ex. 942 at p. 3.)

This data indicates that translocation is not an effective strategy for mitigating impacts to the desert tortoise, especially if an alternative exists that would reduce the number of tortoises salvaged. In other words, every effort must be made to eliminate or greatly minimize the need for translocation. The record shows that the Modified I-15 alternative meets this requirement because fewer tortoises occupy the lands adjacent to the interstate. According to the SEIS, "[h]istorical survey data extrapolated to this region (Berry 1984) suggest tortoise densities might be lower closer to the highway. Recent information developed in the Energy Commission proceeding showed a lower density of tortoise burrows on the Modified I-15 alternative lands. (Cashen 2010)." Thus, the only way to minimize translocating tortoises is to avoid developing the most important and densely populated habitat in the Ivanpah Valley. Again, the reduced Ivanpah 3 option does not achieve this.

Response*: BLM agrees that translocation, on its own, is not likely to completely eliminate impacts to the tortoises that are present in the project area. Translocation is presented in the EIS as just one of several avoidance, mitigation, and compensation measures. However, given that implementation of the proposed project, if approved, would require removal of tortoises, translocation becomes a required component of the action, even if it is not expected to be 100 percent successful. Therefore, the objective of the agency is not to use translocation, on its own, as a mitigation measure. Instead, the objective is to identify the location and procedures that are most likely to maximize*

success for those tortoises that must, by the nature of the proposed project, be removed from the project area.

Tortoise - Translocation – Suitability of Translocation Area for this Purpose

Comment Supp-13-7: The SDEIS at 36 states, "Compared to the proposed project, the Mitigated Ivanpah 3 Alternative would have a reduced impact on desert tortoise by avoiding long-term impacts to 433 acres of habitat and providing an area for tortoise relocation within known tortoise habitat." However, the 433 acres is part of the site that would require the most grading and rock removal. The SDEIS does not analyze availability of friable soils for burrow construction by desert tortoises within this 433 acres. Availability of friable soils for burrow construction may restrict the carrying capacity of the site and thus its suitability as a translocation site for tortoises. The SDEIS also fails to consider the other projects proposed in the immediate vicinity of the 433 acres which would further reduce the suitability of this area for desert tortoise translocation. We refer to our February 11, 2010 letter for additional comments related to desert tortoise translocation and relocation.

BLM Handbook 1745 requires that activity plans for translocations must be site-specific and include "Site-specific and measurable vegetation/habitat population objectives which are based on existing ecological site potential/condition, habitat capability, and other important factors." Neither the DEIS nor the SDEIS adequately describe existing ecological conditions nor address the capacity of the habitat at the translocation sites to support additional tortoises.

***Response**: The Biological Assessment includes an evaluation of impacts to desert tortoises, including those associated with the translocation of individuals. It is the responsibility of the USFWS to review the document and determine, based on their expertise, whether the conclusions reached within the Biological Assessment are valid. If the USFWS agrees with the findings of the Biological Assessment, they will issue a Biological Opinion, which may include additional mitigation or conservation measures. Alternatively, if the USFWS determines there are substantive residual impacts, even with the application of additional mitigation measures, they will issue a jeopardy opinion in the Biological Opinion that would effectively prevent to the Project from moving forward as proposed.*

10.3 Biological Resources - Vegetation

Vegetation – Herbicides

Comment Supp-1-1: I was reviewing the SDEIS for the Ivanpah Solar Project and I noticed on page 239 in a section about protection of special status plants the word "herbicide" is mentioned twice in what appears to be part of the general project activities. Below is a section from page 239. Are herbicides planned for use for the

Ivanpah solar project? Where is this use described and analyzed in the DEIS or SDEIS? I have looked in some sections of the DESI for mention of herbicide use unsuccessfully. I would love any information about the planned herbicide and or pesticide in this project.

Response: *The Weed Management Plan referenced in the EIS includes appendices which provide the list of BLM-approved herbicides in California, and methods for applying them. This information was developed by BLM through the Vegetation Treatments in 17 Western States Programmatic EIS.*

10.4 Biological Resources – Other Species

Birds and Gila Monsters

Comment Supp-13-11: The NEMO Plan set the goal for special status species as "Populations and their habitats are sufficiently distributed to prevent the need for listing" (NEMO Plan at 2-6). Like the FSA/DEIS, the SDEIS fails to fully analyze impacts to gila monsters, burrowing owl, golden eagles, other bird species, bats, and other wildlife or to provide alternatives to avoid impacts, or provide measures to minimize impacts. In doing so, it fails to take NEPA's requisite hard look and fails to meet NEPA's requirements or satisfy the NEMO Plan's objectives.

Comment Supp-8-13: Both the DEIS and the SDEIS fail to adequately address the issue of impacts to migratory birds as stated in the Center's previous comments. Pursuant to the Migratory Bird Treaty Act and Executive Order 13186 as well as NEPA, the BLM was required to evaluate the effects of the proposed project (and connected actions) on migratory birds but has failed to do so. Similarly, impacts to golden eagles are not adequately addressed. The Supplemental DEIS simply states that impacts would be reduced from the former proposed alternative--- however since those impacts were never adequately identified or analyzed there is little basis for these conclusory statements. Clearly, the next revised or supplemental DEIS needs to adequately identify the migratory bird issues on site as well as impacts to golden eagles and evaluate the impact to those species.

Response*: The SDEIS included evaluation to potential impacts to each of the species addressed in this comment. The screening of alternatives in Section 4 of the SDEIS considered potential biological impacts to 25 different alternatives, and the analysis of the Mitigated Ivanpah 3 and Modified I-15 alternatives in the SDEIS compared their expected impacts on the species discussed in this comment. In addition, since publication of the SDEIS, BLM has continued to work with the Energy Commission, USFWS, and CDFG to improve the mitigation measures for these species, especially the avian species. These revised mitigation measures are included in mitigation measures BIO-22 and BIO-23.*

The FEIS also includes additional information regarding potential impacts to gila monsters.

Bighorn Sheep

Comment Supp-13-10: Like the FSA/DEIS, the SDEIS fails to fully analyze impacts to bighorn sheep, provide alternatives to avoid impacts, or provide measures to minimize these impacts. The slightly smaller size of the Mitigated Ivanpah 3 alternative does not make up for the failure to obtain and consider basic information about the use of the area by bighorn and the likely impacts to bighorn from the project.

Comment Supp-17-7: Impact: Bighorn sheep seasonally migrate from the high elevation Clark Mountain, where they generally spend the summers, to the low elevation State Line Hills, where they spend the winter and where they lamb. The project will have uncertain impacts on the bighorn sheep migration between these two sites and their continued use of them.

Potential Mitigation
Project should fund a study to trap and collar bighorn, map their habitat and potential habitat, and monitor their movements and reaction to the project.

***Response**: In response to these comments, BLM conducted additional analysis of impacts to bighorn sheep in the SDEIS. This analysis is included in the FEIS.*

General Wildlife Movement/Connectivity/Habitat

Comment Supp-8-14: As noted by the Center, BLM did not address the value of the habitat that would potentially be lost and fragmented in a comprehensive way. There are several ways in which BLM could approach analyzing such impacts. One way to analyze impacts to habitat used by NOAA is to perform a Habitat Equivalency Analysis ("HEA"). This process is used to determine compensation for injuries to the public trust environmental resources including the lost services that the ecosystem provides. While the HEA was developed for determining compensation from impacts primarily from oil spills, this methodology has been used to determine compensation for other types of impacts including development projects. It is a useful method to determine compensation for impacts to the public trust resources including migratory birds, golden eagles, and other biological resources that would occur if the proposed project is implemented. It can also provide a basis for analyzing the equivalency of compensation lands at least from the resources services perspective. This analysis would be *in addition to* mitigation for the impacts to threatened and endangered species. We suggest that BLM consider utilizing this methodology to more accurately analyze and assess the impacts from the proposed project and the alternatives on the resources of our public lands.

***Response**: The analysis of impacts to specific species in the FEIS includes consideration of the impact of the proposed project and alternatives on habitat connectivity.*

14.0 CULTURAL RESOURCES AND NATIVE GROUP COORDINATION

Comment Supp-2-1: Having received the SDEIS for the SIEGS project, Chairman Valenzuela was concerned about impact to prehistoric or tribal sites and asked if archeological surveys of the project lands had been conducted. [He was assured that no prehistoric sites had been identified during the various surveys (only a partial survey in new lands), that none were expected and told him that I would let him know if any were identified in the new project lands.

***Response**: The comment is a telephone record of a conversation between Chairman Valenzuela and BLM staff. Chairman Valenzuela's concerns were addressed in the phone conversation, as documented in the telephone record.*

15.0 FIRE, SAFETY AND HAZARDOUS MATERIALS

Comment Supp 3-1: The Department of Toxic Substances Control (DTSC) has received your submitted Supplemental Draft Environmental Impact (SDEIS) for proposed Ivanpah Solar Electric Generating System (ISEGS) project. The following project description is states in your document: " The SDEIS analyses two additional alternatives to the proposed action; a reduction in acreage alternative called the Modified I-15 Alternative. The facility evaluated in each of these alternatives is a thermal electric generating facility with generating capacity of 370 megawatts (MW). The Mitigated Ivanpah 3 Alternative would be a development of three solar concentrating thermal power plants, which are comprised of fields of heliostats (elevated mirrors guided by a tracking system) focusing solar energy on boilers located on centralized power tower. Shared facilities consisting of substation, administrative and maintenance buildings would be developed during construction of the first power plant in the Construction Logistics Area (CLA) between Inanpah 1 and 2. Overall, the Mitigated Ivanpah 3 Alternative would require a Bureau of Land Management (BLA) right of way (ROW) grant totaling 3564.2 acres, a reduction of 12.5 percent or 433 acres. The Modified I-15 Alternative would also occupy 3564.2 acres, but the arrangement of one of the three power generating units would be configured and placed closer to Interstate 15 (I-15). The Mitigated Ivanpah 3 Alternative would be located in the Mojave Desert, near the Nevada border in San Bernardino County, California on land administered by BLM. The Mitigated Ivanpah 3 Alternative site is located 4.5 miles southwest of the Primm, Nevada, and 0.5 miles west of the Primm Valley Gold Club which is located just west of the Ivanpah Dry Lake. The land uses associated with the site vicinity and proposed project property includes undeveloped lands, recreation, grazing, mineral development and use of designated utility corridors for natural gas and electricity transmission." DTSC has the following comments:

1) The SDEIS should identify the current or historic uses at the project site that may have resulted in a release of hazardous wastes/substances, and any known or potentially contaminated sites within the proposed Project area. For

all identified sites, the SDEIS should evaluate whether conditions at the site may pose a threat to human health or the environment. Following are the databases of some of the pertinent regulatory agencies:

- National Priorities List (NPL): A list maintained by the United States Environmental Protection Agency (U.S. EPA)
- Envirostor: A database primarily used by the California Department of Toxic Substances Control, at Ebvirostor.dtsc.ca.gov
- Resource Conservation and Recovery Information System (RCRIS): A database of RCRA facilities that is maintained by U.S. EPA.
- Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS): A database of CERCLA sited that is maintained by U.S. EPA.
- Solid Waste Information System (SWIS): A database provided by the California Integrated Waste Management Board which consists of both open as well as closed and inactive solid waste disposal facilities and transfer stations.
- Leaking Underground Storage Tanks (LUST)/Spills, Leaks, Investigations, and Cleanups (SLIC): A list that is maintained by Regional Water Quality Control Boards.
- Local Counties and Cities maintain lists for hazardous substances cleanup sites and leaking underground storage tanks.
- The United Stated Army Corps of Engineers, 911 Wilshire Boulevard, Los Angeles, California, 90017, (213) 452-3908, maintains a list of Formerly Used Defense Sites (FUDS).

2) The SDEIS should identify the mechanism to initiate any required investigation and/or remediation for any site that may be contaminated, and the government agency to provide appropriate regulatory oversight. If necessary, DTSC can enter an oversight agreement in order to review such documents.
3) All environmental investigations, sampling and/or remediation for the site should be conducted under a Workplan approved and overseen by a regulatory agency that has jurisdiction to oversee hazardous substance cleanup. The findings of any investigations, including any Phase I or II Environmental Site Assessment Investigations should be summarized in the document. All sampling results in which hazardous substances were found should be clearly summarized in a table.
4) Proper investigation, sampling and remedial actions overseen by the respective regulatory agencies, if necessary, should be conducted at the site prior to the new development or any construction. All closure, certification or remediation approval reports by these agencies should be included in the AFC.
5) Buildings or other structures, asphalt or concrete-paved surface areas are being planned to be demolished, an investigation should be conducted for the presence of other related hazardous chemicals, lead-based paints or

products, mercury, and asbestos containing materials (ACMs). If other hazardous chemicals, lead-based paints or products, mercury or ACMs are identified, proper precautions should be taken during demolition activities. Additionally, the contaminants should be remediated in compliance with California environmental regulations and policies.

6) Project construction may require soil excavation or filling in certain areas. Sampling may be required. If soil is contaminated, it must be properly disposed and not simply placed in another location onsite. Land Disposal Restrictions (LDRs) may be applicable to such soils. Also, if the project proposes to import soils to backfill the areas excavated, sampling should be conducted to ensure that the imported soil is free of contaminations.
7) Human health and the environment of sensitive receptors should be protected during the construction or demolition activities. If it is found necessary, a study of the site and a health risk assessment overseen and approved by the appropriate government agency and a qualified risk health assessor should be conducted to determine if there are, have been, or will be, any releases of hazardous materials that may pose a risk to human health or the environment.
8) If it is determined that hazardous wastes are, or will be, generated by the proposed operations, the wastes must be managed in accordance with the California Hazardous Waste Control Law (California Health and Safety Code, Division 20, Chapter 6.5) and the Hazardous Waste Control Regulations (California Code of Regulations, Title 22, Division 4.5). If it is determined that hazardous wastes will be generated, the facility should also obtain a United States Environmental Protection Agency Identification Number by contacting (800) 618-6942. Certain hazardous waste treatment processes or hazardous materials, handling, storage or uses may require authorization from the local Certified Unified Program Agency (CUPA). Information about the requirement for authorization can be obtained by contacting your local CUPA.
9) If during construction/demolition of the project, the soil and/or groundwater contamination is suspected, construction/demolition in the area should cease and appropriate health and safety procedures should be implemented.
10) If the site was used for agricultural, livestock or related activities, onsite soils and groundwater might contain pesticides, agricultural chemical, organic waste or other related residue. Proper investigation, and remedial actions, if necessary, should be conducted under the oversight of and approved by a government agency at the site prior to construction of the project.
11) DTSC can provide guidance for cleanup oversight through an Environmental Oversight Agreement (EOA) for government agencies which could not be responsible parties under CERCLA, or a Voluntary Cleanup Agreement (VCA) for private parties …

Response: *The information from DTSC generally requests that site evaluation include standard procedures to identify and address the potential presence of hazardous materials on the subject property. The text in the DEIS sections on Public Health and Safety (Page 6.7-10 of the DEIS) and Waste Management (Page 6.13-6) discuss the*

Phase I Environmental Site Assessment conducted at the subject property for this purpose.

17.0 GRAZING

Comment Supp-17-11: Impact: The project area is removing 4,000 or more acres from an active cattle grazing allotment. The east half of the Clark Mountain unit is part of this grazing allotment and includes most of the water in the area for cattle. There is some potential that the cattle will spend more time on the NPS lands, which are higher elevation and generally better forage quality. Also, the tortoises present within the project area are to be translocated outside the fence onto adjacent habitat. Cattle grazing and feral burros could threaten the survival and recovery of the tortoise in this area.

Potential Mitigation

Cattle grazing should be removed from all tortoise habitat in the vicinity of the project so that translocated tortoises are not competing with cattle for food.

Project should purchase the lost AUM's from the permittee and the BLM should reduce the total AUM's on the permit.

New fences should be funded by the project to move the allotment boundary and exclude tortoise habitat (and not impact bighorn sheep movement).

Project should install water source on lower elevation BLM lands to encourage the cattle to utilize areas of the allotment equally.

Project should fund the installation of wildlife friendly fencing of springs in the Preserve and placement of watering device outside the fence for cattle to utilize.

Comment Supp-8-11: As noted previously, impacts to late summer and fall flowering plants are not adequately identified or analyzed in either the DEIS or Supplemental DEIS. The Supplemental DEIS also fails to provide the needed identification and analysis of impacts from proposed changes in grazing and road and route realignments that are contemplated as part of the proposed project. For example, regarding changes in grazing the Supplemental DEIS does not actually evaluate the changes but rather defers the issue to a future time in violation of NEPA. The Supplemental DEIS states:

> The procedures and regulations that would be used by BLM to modify allotment boundaries and reduce the animal unit months (AUMs) permitted in the grazing lease would be the same for the proposed project and the Mitigated Ivanpah 3 Alternative. . . .

> The proposed project would require that BLM modify the allotment boundaries, and reduce the number of AUMs available within the allotment, currently a total of 1,428 AUMs, by approximately 70 AUMs."

SDEIS at 95. However, the Supplemental DEIS, like the DEIS, does not explain how changes in the grazing AUMs this would impact the resources of these public lands or how ongoing or reduced grazing would impact the tortoises that are proposed to be translocated into the areas that would still be grazed. At minimum the BLM needed to consider an alternative that would protect translocated tortoises and host tortoise which will be under increased stress from forage competition and other impacts due to grazing. The Center raised this issue in our comments on the DEIS and it remains unaddressed.

Response*: The text in the FEIS has been modified to provide more information on the reduction of AUMs.*

19.0 NOISE

Comment Supp-17-2: The discussion of Noise and Vibration impacts in Section 4.6 starting on page 58 fails to state the level of noise in decibels that would occur and fails to address how far that noise would carry beyond the project site. NPS sound monitoring on Clark Mountain indicates the area is extremely quiet. Noise impacts could travel long distances and without specifics we can only assume that noise could adversely affect recreation visitors to the Mojave National Preserve.

Comment Supp-17-9: Impact: The Clark Mountain wilderness has some limited natural sound data that shows a very quiet wilderness experience currently exists on most days. Construction of the project site will generate considerable noise from heavy equipment that will disrupt the natural soundscapes. This will be of concern to the climbing community and other recreationists on the Clark Mountain (especially on the limestone faces, where presumably the noise will bounce off these shear walls) that noise will carry into the adjacent wilderness area and impact the recreational experience. We are also concerned about routine repetitive noises during the 30 year life of the project that may display species that communicate in those same audio ranges. In addition to the long term impact on the climbing community and other recreationalists, insects or birds could also be adversely affected in the area where the noise is audible, greatly increasing the impact footprint of the facility.

Potential Mitigation

Project should fund the monitoring of sound in the Preserve and be required to mitigate noise impacts if any are detected.

Response*: The FEIS text has been revised to add information regarding the impact of noise on the Preserve. The analysis of biological impacts in the SDEIS acknowledged that noise could cause adverse imp[acts to wildlife. Section 4.7 includes mitigation*

measures intended to reduce noise levels, and to limit the timing of noise-generating activities.

20.0 PROJECT DESCRIPTION

20.1 Project Description – Grading

Comment Supp-8-12: The identification and description of the amount of grading for the proposed project remains inadequate and this omission undermines the analysis of air quality impacts from PM10 as well as the analysis of impacts to soils and water. The Supplemental DEIS, as the DEIS did, grossly understates the amount of grading that will occur on the site and conflates so-called "heavy" grading with all grading. While the specific information about a grading plan may be deferred to the construction plan in some instances (*see* SDEIS at 256), the likely *extent* of grading on the site must be disclosed as part of the NEPA review as it is a critical component needed to assess impacts to soils, water, and air quality. The BLM's failure to include this information undermines the NEPA analysis here.

***Response**: The analysis of air quality impacts associated with grading and operations has been based on very conservative assumptions, including extensive grading and full removal of all vegetation. Any vegetation that survives as a result of the Low-Impact Development approach would reduce potential impacts even further.*

23.0 SOIL AND WATER

23.1 Soil and Water - Surface Water/Stormwater

Comment Supp-20-6: The SDEIS does not provide detailed information about the effects of fencing on drainage systems. In this region, storms can be sudden and severe, resulting in flash flooding. Fence design must address hydrologic criteria, as well as security performance criteria. The National Park Service recently published an artic1e1 on the effects of the international boundary pedestrian fence on drainage systems and infrastructure. We recommend that BLM review this article to ensure that such issues are adequately addressed with this Project.

Recommendation:

- Provide more detailed information about fencing and potential effects of fencing on drainage systems within the FEIS. Ensure that the fencing proposed for this Project will meet appropriate hydrologic performance standards.

***Response**: Following the selection of the Low Impact Development approach to minimize modification of the site's natural hydrology, the agency remained concerned about the potential for stormwater flows to damage fencing and heliostats, and as a*

result, developed a mitigation measure: SOIL & WATER-5 requires the development of a Stormwater Monitoring and Response Plan to monitor the site for stormwater damage, and to take corrective actions in response to identified damage. The mitigation measures specifically requires inspection of fencing, corrective actions to identified damage, and consideration of more active stormwater management systems if unacceptable impacts occur.

24.0 TRAFFIC

Comment Supp-16-1: As you know, CCDOA previously filed comments on the Draft Environmental Impact Statement (DEIS) for the Ivanpah Solar Electric Generation System. In its comments, CCDOA identified four key concerns with the DEIS: (1) glare; (2) thermal effects; (3) adherence to the Ivanpah Lands Act (Public Law 106- 362); and (4) recognition of FAA's prior comments.

While the purpose of the Supplemental DEIS (SDEIS) was to analyze two new alternatives to the proposed action, CCDOA is disappointed that BLM did not use this as an opportunity to address
CCDOA's comments, particularly its serious concerns regarding the use of unjustified thresholds for significance for safety impacts associated with glare from the proposed heliostats. As noted below, CCDOA still has strong concerns on these matters. In addition, CCDOA has identified several other, more minor issues, in the SDEIS that merit brief comment. These issues merit full consideration and response before BLM issues its Final EIS.

Comment Supp-16-3: The analysis of the effects of the Modified 1-15 Alternative should better account for the effects on Visual Flight Rules (VFR) and Instrument Flight Rules (IFR) aviation traffic. Because many VFR aircraft use 1-15 as a navigation route, the Modified 1-15 Alternative could result in greater impacts from heliostat glare, power towers and turbulence. The analysis should start with and include maps showing the location of VFR and IFR routes in relationship to the project alternatives. *(Compare,* SDEIS at pp. *164-5).*

Comment Supp-16-4: The heliostat positioning plan should be actually drafted and circulated for comment prior to the completion of the EIS and the relevant federal actions. The SDEIS assumes, without basis, that the impacts would be mitigable with little or no supporting analysis. The plan should be developed now and made available in a second SDEIS to ensure that full information on the potential safety effects are considered prior to action on the project and with full opportunities for public notice and comment. *(Compare,* SDEIS at pp. 268-69).

Comment Supp-16-5: CCDOA reiterates its request that BLM consult with FAA about the potential effect of the thermal plumes from the air cooled condensors on air navigation and on the potential turbulence hazards. This issue is not addressed in FAA's determinations of no hazard (which relate to height obstructions only). As noted

in CCDOA's earlier comments, the only way BLM can meet its mandate to properly evaluate potential effects to public health and safety is to consult with FAA on this issue and inform the public of the results of that consultation.

A discussion of the potential public safety issue of thermal updrafts that could potentially interfere with operation of light general aviation aircraft should be included in the discussion of each alternative. *(Compare* SDEIS at pp. 62 and 151 (public safety analysis) and pp. 75, 76 & 164-65 (traffic and transportation analysis)).

Comment Supp-16-6: CCDOA reiterates its comment that BLM does, in fact, have legal obligations under Public Law 106-362. Specifically, BLM cannot ignore the congressional concern regarding the shortage of airspace in the Las Vegas region; this is clearly a cumulative impact that must be addressed in the EIS. It would be arbitrary and capricious to examine the effects ofthe project on surface transportation capacity and congestion and then fail to do so with air routes and airspace capacity. To that end, BLM must coordinate with FAA to determine the degree to which the ISEGS may impact existing and planned flight tracks in the region.

Comment Supp 16-7: • The SNSA Site is not located in Jean, Nevada. *(Compare* SDIES at p. 29, 1st paragraph and p. 120, last paragraph). It is located in unincorporated Clark County, Nevada, between the communities of Jean and Primm, Nevada.

- The SNSA site is not 5,000 acres *(Compare* **SDEIS** at p. 46, **§** 4.2.4 and p. 135, **§** 6.2.5). As described in BLM Patent no. 27-2004-0104, the Southern Nevada Supplemental Airport site is approximately 5,752.33 acres.

- CCDOA reiterates its recommendation that the Final EIS include FAA in the list of regulatory agencies that administer laws, ordinances, regulations or standards that may be applicable to the proposed project; and that BLM include FAA's 2008 letter to Mr. George Meckfessel in the Table of scoping comments received by the agency on this project.

Response*: The potential impact of thermal plumes on low-flying aircraft was evaluated on Page 6.10-22 of the DEIS. In response to the potential impact, the DEIS proposed Mitigation Measure TRANS-6, which requires the applicant to conduct additional coordination with FAA. In addition, the DEIS proposed a Mitigation Measure (TRANS-3) requiring a Heliostat Positioning Plan. In response to these comments, BLM contacted FAA to request additional coordination. As of the publication of the FEIS, the additional information from FAA has not been received.*

The specific comments regarding the acreage of the Southern Nevada Supplemental Airport and the inclusion of the FAA information have been addressed through text changes in the FEIS.

Comment Supp-17-13: Impact: The primary access road from the east onto Clark Mountain currently crosses a mostly undeveloped desert bajada, once you get beyond

the golf course area. That road will have to be moved because it is in the middle of the project. The experience of driving across this desert bajada enroute to Clark Mountain will be significantly changed from one of a natural desert experience to more of a industrial development zone. In addition, the freeway exit at Yates Well Road where the access begins is now subject to a new California Port of Entry proposal, so just moving the access road now around the solar project may mean rerouting it again in a couple of years if this project gets approved.

Potential Mitigation

We recommend looking at creating a new road using the Nipton Road exit and skirting the foothills above tortoise habitat to create a new access road to Clark Mountain.

In addition to improving the access for recreationists, a wayside pullout and restroom could be developed at this exit that could have interpretive panels providing information about the solar project. This site would provide a good overview of the project and could be used for public education about renewable energy.

Response: *The modifications to the access roads between the golf course and the mountains to the west of ISEGS are minor, and are not expected to impede access. Consideration of replacing these routes with other routes is not necessary.*

25.0 VISUAL RESOURCES

Comment Supp-13-13: Visual resources are important public resources identified in both FLPMA and the CDCA Plan. The Clark Mountains, part of the Mojave National Preserve, rise to almost 8,000 feet from the Ivanpah Valley and view of the mountains from the valley will be marred by the ISEGS project's power towers, each rising to 459 feet above the valley and array of 428,000 mirrors. Scenic views from two wilderness areas (Mesquite and Stateline) will also be adversely affected. Hundreds of thousands of visitors pass through the Ivanpah Valley annually. While most of these simply pass through along the major highways, many visitors do stop to visit, use and enjoy the Ivanpah Valley's public lands, Mojave National Preserve, Wilderness Areas, and recreation areas. The two alternatives proposed in the SDEIS will significantly impact visual resources for these visitors. In the SDEIS and FSA/DEIS the BLM has failed to identify alternatives or mitigation measures that will avoid these impacts other than the "no action" alternative.

Comment Supp-16-2: The DEIS does not conclude that there would be no safety hazard associated with brightness. It concludes only that retinal damage from instantaneous exposures would not occur. Importantly, the DEIS also recognized the potential for longer-term harms. The DEIS analysis referenced in the SDEIS was based on the unsupported assumption that pilots and others would avert their gaze from the proposed project and thereby avoid injury on the grounds that any exposures would be transient. This assumption is entirely insufficient to address potential public safety

concerns. First, the basic assumption is simply false, insofar as pilots do not have the ability to simply not look at the flight environment. Pilots operating under visual flight rules and instrument flight rules have a legal and moral obligation to vigilantly observe the entire sky to see and avoid other aircraft, as well as to maintain adequate separation from obstacles on the ground. *See e.g.,* 14 C.F.R. § 91.113(b) ("vigilance shall be maintained by each person operating an aircraft so as to see and avoid other aircraft"). Pilots must also maintain views of the horizon to ensure proper control and navigation. Second, BLM' s "retinal injury" standard fails to take into account the obvious resulting safety hazard, namely pilots who will be averting their eyes rather than maintaining visual contact with the flight environment. Again, this is a legal and safety imperative, not a pleasant luxury. Third, the DEIS was based on the wholly unsupported assumption that the duration of exposure to pilots would be very short because light would be reflected at a constant stationary angle and the viewer would be travelling at a high rate of speed. This is neither quantified nor supported. Further, the SDEIS argument disregards the fact that the pilot would be exposed to the glare from each heliostat, possibly in sequence, which could dramatically increase the duration. Finally, as noted in our earlier comments, the use of retinal injury as the threshold inquiry for public safety is entirely inadequate, particularly given BLM's admission that pilots will be distracted. While causing distraction to hikers in the nearby mountains may not rise to the level of a public safety threat, causing distraction to pilots engaged in final approach or the initial stages of departure is another thing altogether and merits full examination in the Final EIS. *(Compare,* SDEIS at pp. 75, 76 & 164-65).

Comment Supp-17-3: Page 80 under visual resources is the first time that the supplemental DEIS recognizes the existence of the Mojave National Preserve. The DEIS acknowledges substantial adverse impacts to scenic resources, including the Preserve. These impacts are acknowledged as being adverse and unavoidable. Since these impacts are recognized as being unmitigatable, the NPS proposes that the applicant be required to compensate for these impacts. See our proposed mitigation measures below.

While the artist's rendering in figure 4-1 on page 82 shows the basic scale of the project footprint, it tends to significantly downplay the visual effect. Major parts of the rendering barely show any visibility of the thousands of heliostats on the south side. The north side of the rendering also does little to recognize the significant solar glare that will occur at times. These images do little to show the real visual impact of the project.

Comment Supp-17-12: Impact: The CEC staff assessment and BLM DEIS concludes unmitigatable significant impacts on visual resources. If this statement is true, we believe the project should be required to compensate for this significant impact on this public resource that Congress has recognized as significant to conserve. The NPS has experts in determining the value of a lost resource and could help determine an appropriate compensation amount.

Potential Mitigation

Establish a value for the required compensation and set up a fund for mitigation projects. Establish an interagency and public committee to determine criteria and appropriate projects to fund in the Ivanpah Valley and nearby on NPS or other public lands to offset this loss.

***Response**: As stated in the comments, the EIS states that direct adverse impacts to visual resources will occur, and cannot be mitigated. This information has been considered by BLM in the selection of a preferred alternative in the FEIS, and will be considered in the decision whether or not to authorize the ROW grant in the Record of Decision.*

Comment Supp-17-10: Impact: Arguably the project will not be the most significant impact on night skies in the Ivanpah Valley, given the presence of the Primm Casino and Hotel development. However, in order to ensure that the light pollution doesn't degrade any further in close proximity to the Preserve steps should be taken to minimize the impact.

Potential Mitigation

All external lighting should be shielded and shut off when not needed. Lights that are motion activated could be used to prevent lights from remaining on all night.

***Response**: The text in the FEIS regarding the impact of night-lighting has been revised.*

26.0 WILD HORSES AND BURROS

Comment Supp-13-9: The SDIES is incorrect in asserting that "wild horses are not present in the project area". There is at least one stallion present (photographs available on request) that was described by the grazing permittee as having been present for several seasons. Although the BLM has established the AML for burros in the Clark Mountain HMA at zero, there are many burros on the site that will be impacted. BLM cannot simply pronounce that because they have established a zero AML, wild horses and burros will not be impacted by any of the alternatives. BLM must address the actual impacts to the resident wild horse and burro population.

***Response:** The comments regarding other actions associated with burros in the Clark Mountain Herd Area are appreciated. The purpose of the EIS was to evaluate the specific impact of the proposed ISEGS project on the burros in the area. However, other management decisions regarding this herd are outside of the scope of this project-specific EIS.*

Comment Supp-17-8: Impact: Invasive species. Feral burros still exist in the area and are known to utilize the proposed project site. Fencing of this site may force the burros

onto the park more often. Disturbance of the site will provide a substrate that is suitable for additional invasive plant species to expand their area or get a foothold, bringing the threat close to the park where wind or avian transport could introduce these into the Clark Mountain wilderness area.

Potential Mitigation

Project should fund the removal of the remainder of the feral burros from the herd management area, which is to be zeroed out according to the BLM NEMO plan. Project should be required to have an invasive species management plan that includes the NPS lands

Response: *The comments regarding other actions associated with burros in the Clark Mountain Herd Area are appreciated. The purpose of the EIS was to evaluate the specific impact of the proposed ISEGS project on the burros in the area. However, other management decisions regarding this herd are outside of the scope of this project-specific EIS.*