

STATE OF CALIFORNIA  
Energy Resources Conservation  
And Development Commission

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<b>07-AFC-5</b>
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In the Matter of: )  
Application for Certification for the )  
Ivanpah Solar Electric )  
Generating System )  
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**Docket No. 07-AFC-5**

**ENERGY COMMISSION STAFF'S  
OPENING BRIEF**

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In the Matter of:	)	
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Ivanpah Solar Electric	)	
Generating System	)	<b>Staff's Opening Brief</b>
_____	)	

**I. INTRODUCTION.**

The Ivanpah Solar Electric Generating System (ISEGS) project is iconic of the coming transformation of the electric generation system in California, and perhaps the country as a whole. It is a central station solar generation project, and most of the energy it generates will come from the sun. It is thus supportive of the climate change strategy that California has adopted with AB 32 and the California Air Resources Board Scoping Plan. Likewise, it nicely comports with the objectives of the Renewable Portfolio Standard, in that the investor-owned utilities can purchase its energy to fulfill their legal obligations to prioritize renewable generation sources.

For all these reasons, Staff supports the licensing of ISEGS by the California Energy Commission (Energy Commission). However, Staff supports the licensing without turning a blind eye to the environmental consequences that the project imposes on the desert landscape. ISEGS is proposed to be located on the habitat of a state and federally listed threatened species—the desert tortoise, as well as other sensitive wildlife species. This means that a substantial swath of habitat will be permanently disturbed, and the tortoise found there must be relocated. ISEGS will also use land currently occupied by special status rare plant species, although it has been reconfigured to reduce the impacts to such plants. In addition, this 4000+ acre project will be near a freeway in an otherwise largely intact desert landscape, imposing significant impacts to visual resources.

Staff proposes that the Energy Commission recognize these impacts and provide mitigation to reduce or avoid such impacts and fully mitigate impacts to sensitive biological resources to the extent feasible. Because not all of these impacts can be fully mitigated, Staff recommends that the Energy Commission make “override” findings that recognize the important positive attributes of a project that will help transform the electricity system to one that is less reliant on carbon-based generation.

This brief focuses on those areas where other parties have contradicted Staff’s analysis of impacts or proposed mitigation. It does not consider areas where there was no

conflict with the Applicant or intervenors. After considering the issues in conflict, it discusses what Staff believes to be the basis for a CEQA “statement of overriding considerations” pursuant to Public Resources Section 21081.<sup>1</sup>

## **II. VISUAL RESOURCES: IMPACTS ARE SIGNIFICANT AFTER ALL FEASIBLE MITIGATION.**

### **A. Setting and Applicable LORS.**

The Ivanpah Valley is located in the Mojave Desert, and is “visually relatively intact,” although, as one proceeds north on the I-15 corridor towards Las Vegas, it becomes increasingly urbanized and less scenically intact. (Exh. 300, p. 6.12-7.) At its lowest point it includes the dry lakebed of Ivanpah Lake, from which one views the steeply rising, barren slopes and ridges of the Clark, Spring, and Ivanpah Mountains to the south, west, and north, and the Gray, McCullough, and New York Mountains to the east. (*Ibid.*) The project site is several miles from the Nevada border, “at the outer edge of urban influence of the City of Las Vegas metropolitan area.” (*Ibid.*)

The testimony and visual simulations of the site area demonstrate that the site, while not “pristine,” exemplifies the dramatic beauty of the Mojave landscape. Several miles to the north, near the Nevada border, the viewer can see in the distance the town of Primm with its casinos and the Bighorn Generating Station. (Exh. 300, p. 6.12-7.) At the edge of the Ivanpah Lake Playa is the Primm Golf course; the viewshed is transected by I-15 and some high voltage transmission lines. Several unpaved vehicular trails cross the landscape. Yet these features are all visually subordinate in this viewshed, and do not detract from a landscape that “appears predominantly undisturbed.” (*Ibid.*)

There are few applicable LORS apart from very general federal laws. One LORS that is applicable is the Bureau of Land Management’s California Desert Conservation Area Plan (CDCA). (Exh. 300, p. 6.12-4.) The CDCA includes visual resource classifications; the ISEGS site is classified as Multiple Use Class L, “the most restrictive under the plan” in that it “protects sensitive, natural, scenic, ecological, and cultural resource values.” (Exh. 300, p. 6.12-5.) Class L is managed to provide for “generally lower-intensity, carefully controlled multiple use of resources, while ensuring that sensitive values are not significantly diminished.” (*Ibid.* [quoting from the CDCA].) However, the CDCA appends a list of allowable land uses that include electrical generation facilities, including solar facilities, subject to federal environmental review. (*Ibid.*)

One other noteworthy LORS is the County of San Bernardino General Plan; the Conservation and Open Space elements of the general plan include “goals” that are intended to protect visual resources in the project area and provide designated County

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<sup>1</sup> Unless otherwise indicated, all statutory references are to the Public Resources Code.

scenic routes. (Exh. 300, p. 6.12-6.) Highway I-15 in the Ivanpah Valley is one such County scenic route. (*Ibid.*) These local government LORS are not enforceable where they conflict with federally designated land uses. (*Citizens for a Better Henderson v. Hodel* (9<sup>th</sup> Cir. 1985) 768 F.2d 1051, 1055.) Thus, ISEGS inconsistency with them requires no Energy Commission override. However, they are relevant in that they underline the scenic quality of the “scenic route” being affected.

## **B. The Direct Visual Impact of the ISEGS Project to Visual Resources Would Be Significant.**

Both Staff and Applicant used a “Key Observation Point” (KOP) analysis to evaluate visual impacts. Such an analysis uses chosen points for photographs that should best represent landscape attributes, such as its intactness, quality, and characteristics (Exh. 300, p. 6.12-8.) These photos become the environmental baseline against which project impacts are evaluated using superimposed simulations of the project in the photos. (*Ibid.*) The applicant chose several of the KOPs for the visual analysis in its application. These KOPs were supplemented by additional ones requested by the Bureau of Land Management (BLM) and Staff. (Exh. 300, p. 6.12-9.) The KOPs represent views that would be seen by motorists on I-15, by golfers and others at the Primm Golf Course, and by those who utilize the dirt roads to gain access to the mines and mountain areas north of the project site. (Exh. 300, pp. 6.12-9 through 11.)

The project itself is visually imposing. It would cover roughly 4000 acres, most of which would be covered with mirror fields. The panoramic expanse of mirror arrays would present strong textural contrast with the intact, natural character of the desert floor. (Exh. 300, p. 6.12-17.) These mirror fields would be focused around three “power towers” that would rise to a height of roughly 459 feet<sup>2</sup>; an additional 10 to 15 feet above that height would consist of lighting to meet Federal Aviation Administration (FAA) requirements. (Exh. 300, p. 6.12-12.) Other visually prominent structures on the site would include steam turbine generators, air-cooled condensers (92 feet in height), water storage tanks, a 16-acre substation, administrative and maintenance facilities, and transmission lines and towers. (*Ibid.*)

The power towers have “receiver units” at their top on which the mirror fields focus their reflected light. During operation, these receiver units become extremely hot, such that they glow and appear brightly lit (a phenomenon which cannot be visually depicted in the photo simulations). (Exh. 300, p. 6.12-16.) Because they are high above the ground, these glowing receiver units will be a visible distraction to persons at many of the KOPs, including travelers utilizing I-15. (Exh. 300, p. 6.12-22.) “Under sunny conditions the bright lighting of the solar receiver units would be very conspicuous, and may tend to visually dominate views due their brightness.” (Exh. 300, p. 6.12-17.)

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2 The original project involved seven “power towers,” five of which were located on Phase 3. The Applicant’s latest amendment to the project would reduce the size of Phase 3 and use only one power tower, making for three such towers in all. (Exh. 88.)

These glowing receiver units will not block views of Clark Mountain behind them, but the brightness of the shining receiver units would “result in very strong levels of contrast that could strongly alter the character of these views or make viewing difficult. (Exh. 300, p. 6.12-15.) For night lighting, the FAA would require that the lighting atop the towers be a strobe light. (Exh. 300, p. 6.12-13.)

Staff concluded the project impact on visual resources would be significant, even after the application of all feasible mitigation, from several KOPs. These included the middle-ground viewpoints from I-15 represented by KOPs 3 and 4 (Exh. 300, 6.12-20), the northern panoramic views from I-15 as one drives north into the valley represented by KOP 5 (Exh. 300, p. 6.12-21)<sup>3</sup>, the Uंबरci Mine Road north of the project site represented by KOP 9 (Exh. 300, p. 6.12-25, 26), and the Benson Mine Road represented by KOP 10 (Exh. 300, p.6.12-10.) The described impact and its significance varies somewhat with the individual KOP, but generally the analysis describes a project that introduces an element of “highly man-made character” into the field of view, with mirror arrays that produce visual glare (particularly in morning or late afternoon), with highly visible features that create a high degree of visual contrast, could not be overlooked, and would dominate the landscape.

The FSA was a joint document with BLM, and looked at the significance of impacts from both a state and federal law perspective. The state and federal laws are parallel. In the context of the National Environmental Policy Act (NEPA), the “significance” of an impact is determined by its “context” and “intensity”. (40 C.F.R. § 1508.27.) Similarly, the California Environmental Quality Act Guidelines (CEQA Guidelines) define “significant effect on the environment” to mean a “potentially substantial adverse change in any of the physical conditions within the area affected by the project,” including those involving visual aesthetics. (Cal. Code Regs., tit. 14, § 15382.) In making a determination of significance, the Guidelines go on to state that the “determination of whether a project may have a significant effect ... calls for a careful judgment on the part of the public agency ... based to the extent possible on factual and scientific data.” (Cal. Code Regs., tit. 14, § 15064(b).) The same section goes on to state that “[a]n ironclad definition of significant effect is not always possible because the significance of an activity may vary with the setting ... [A]n activity which may not be significant in an urban area may be significant in a rural area.” (*Ibid.*)

Given the natural and rural setting, the nature and size of the project (both in its lateral extent as well as its height), and considering the visual glare it would produce, it seems hard to imagine that the ISEGS project would not have a potentially significant effect on the environment, particularly to visual resources. Despite this seemingly obvious conclusion, the Applicant presented testimony that the impact of the project would be less than significant.

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3 Strangely, and incorrectly, the Applicant’s witness, Dr. Priestly, repeatedly testified during cross-examination that Staff’s FSA testimony had concluded that the view from Nipton Road (KOP 5) into the valley was a less than significant impact. (12/14/09 Tr., pp. 291-293.) Dr. Priestly avoided answers on the visual impact from this perspective with this incorrect response, to which he added that he agreed with Staff’s analysis and conclusions regarding impact from this KOP. (*Id.*, at p. 292.)

This testimony was essentially a hodge-podge of disagreements with the Staff's analysis. First, Applicant contends that the project site is not "pristine," noting the golf course, the freeway, the distant transmission lines, and the distant development in Primm on the Nevada border several miles away. (Exh. 65, "Impacts of the Project" [unpaginated].) But Staff's analysis acknowledged this level of development, while pointing out that, despite such, the viewshed landscape is largely intact and quite scenic.

Applicant next argues that the I-15 views (including those from KOPs 4 and 5) are not significant because, even though the power plant will be "readily visible," the views will be middleground rather than foreground. (*Ibid.*) This objection does not fairly describe Staff's analysis, which described the KOP 3 and 4 views as middleground (Exh. 300, p. 6.12-20) and the KOP 5 view, at least from Tipton Road, as "background" (*Id.*, at 6.12-21.)<sup>4</sup> Thus, Staff's analysis quite sensibly found significance from these KOPs without describing the views as foreground views.

Applicant next contends that the glowing receiver units at the top of the power towers will not contribute to a significant visual impact. (Exh. 65, *supra.*) Applicant contends that this is because the receiver units will actually be "like a 100 watt light bulb seen at a distance of 35 meters." (*Ibid.*) Yet this inapt description of the impact was contradicted by Staff's lighting expert, Mr. Jewel (the only lighting expert who testified in the hearings), who described such a comparison as highly misleading. (12/14/09 Tr., pp. 82-83.) Mr. Jewel testified that the "entire surface" of the 20 meter high receiver units will have the glowing effect of a 100 watt bulb, and that such luminescent brightness would be "bright, intrusive, and in effect a nuisance" to viewers in its visual effect. (*Id.*, at p. 83.) Even Applicant's witness stated that the receiver units "will be noticed" by viewers as it "will have the glare all day." (*Id.*, at p. 246-247.)

Applicant next states that the view from KOP 5 might be less than significant because of the brevity of the exposure, at 4.8 minutes from Nipton Road to the Golf Club, and supplemented this contention with a "cone of vision" argument that drivers don't look more than a few degrees away from straight ahead. (Exh. 65, *supra.*; 12/14/09 Tr, pp. 262-263.) Again, this assumes high speeds and considers the high visibility of the project from only one direction. Yet the testimony from Traffic and Transportation witnesses is that the Level of Service on I-15 is variable, and is sometimes gridlocked with Level of Service F. (12/14/09 Tr., pp. 104-106.) There is little reason to believe that views of the project, even if reduced to a couple of minutes, would somehow reduce the dominance and contrast of the project in this setting to less than significant. This would be true for all distant views from KOP 5, as well as those closer views that occur as one descends from Nipton Road towards the playa. Moreover, as Applicant admitted, many viewers are not in fact drivers, but may be passengers in vehicles, including buses. (*Id.*, at pp. 289-290.) Applicant also produced exhibits indicating that

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4 The Staff testimony with regard to KOP 5 goes on to state that, while the Nipton Road KOP depicts a "background distance" from the project, as motorists progress northward toward the site the project will be more visible, with high visual exposure and increased "contrast and dominance." (Exh. 300, p. 6.12-21.)

in the near future there may be 4 to 5 million train passengers per year passing directly by the Ivanpah project site, and these viewers are described as “a more sensitive viewer group” who would be looking at the landscape. (Exh. 68, p.3.16-29.)

Applicant argues that the views from I-15 do not involve a “scenic vista” as that word is used in the CEQA Guidelines checklist merely because there are no designated pull-outs for traffic on this section of I-15. (12/14/09 Tr. p. 283.) But nothing in the Guidelines checklist requires such designated pull-outs for a “scenic vista,” and the road in question has in fact been designated by the County as a “scenic route.” (Exh. 300, p. 6.12-6.)

Applicant next argues that the Staff visitor census for Clark Mountain is too high and that the figure should be revised from 52,000 per annum to 12,000. The 52,000 figure is one originally provided by Applicant, and even if one agrees to the revised count, it is unclear why 12,000 visitors to Clark Mountain per annum would make the impact less than significant for viewers. BLM classifies an area as “high sensitivity” when they have more than 10,000 visitors per annum, putting Applicant’s revised visitor census above the applicable threshold. (12/14/09 Tr., p. 179.) Similarly, Applicant testified that the photo depicting KOP 10 on the Benson Mine Road is not actually at the Benson Mine, but was off the road, as if to fault Staff for inaccurate description. Again, this photo was provided by the Applicant in response to a request that it provide a photo depicting Benson Mine Road. This request came from BLM staff to show that impact. (*Id.*, at p.269.) It is a hollow protest that Applicant did not take the photo exactly on the road or at Benson Mine itself—the point is that it is representative of a northern region view of the project depicting how prominent a visual impact the project will in fact have when viewed from that area.

An equally hollow point, and equally irrelevant, is that the Umberci Mine KOP photo is not taken from a designated wilderness area. (12/14/09 Tr., p. 268.) Again, the KOP was used (as recommended by BLM) to depict the visual impact from a northern perspective. The impact from the KOP is the same whether or not it is actually within the wilderness area.

Applicant puts much emphasis on a computerized map simulation which indicates that the project site would not be visible from many parts of Stateline Wilderness. (12/14/09 Tr., p. 266.) Yet the sponsor of the testimony on this point, Dr. Priestly, has never hiked the ridges depicted. (*Id.*, at 268.) Ms. Cunningham, speaking for intervenor Basin and Range Watch, offered that she had in fact hiked there, and disputed the accuracy of the map, while noting that the project site is very visible from points within the Stateline Wilderness. (*Id.*, at 270.) In the end, the computerized map, and the information it depicts, has little relevance. The fact is undisputed that the project will be very visible from the higher areas to the north as one gains elevation, and that some of these areas from which the project is visible have trails and are within designated wilderness.

Finally, Applicant would seem to argue that a new exhibit allowed into testimony, but not previously provided to parties, supports a conclusion that the visual impacts of the project would be less than significant. The document in question is Exhibit 68, the Draft

Environmental Impact Statement for the Desert Xpress High Speed Passenger Train, a March 2009 document prepared by the Federal Railroad Administration. Although the document's four-page cumulative visual analysis did conclude that the cumulative impact of the train project would not be cumulatively significant when considered with what it tersely describes as "related transportation, development, energy, and natural resource projects" (Exh. 68, pp. 1.16-30 through 32), that conclusion is a *non sequitur*. The energy projects considered (if in fact they were considered) are not described or identified at all. The same document elsewhere describes the visual quality of the project area as Class I (and "high") within the federal preserve and Class II ("moderate") outside the preserve (*Id.*, at 3.16-30), BLM visual classifications that would be inconsistent with the ISEGS project. The federal document describes the area in which the project will be located as "an expansive desert landscape" with a "slower trend in visual changes." (*Id.*, at p. 3.16-31.) It states that the train will bring four to five million passengers who are "sensitive" viewers to this area. (*Id.*, at 3.16-29.) Based on a rather fanciful supposition that "the visual change for the majority of the area of the cumulative analysis is anticipated to be slow," it concludes that the Desert Xpress project results in a less than significant cumulative impact. (*Id.*, at 3.16-32.)

This superficial four page federal analysis is hardly convincing. Although it lacks any actual analysis of the impact (cumulative or otherwise) of any energy project, it does provide more data supporting the Staff conclusion that the project will be significant in both a direct and cumulative context.

### **C. The Cumulative Visual Impact of the ISEGS Project Would Be Significant.**

The Staff's analysis concluded that the Ivanpah project would have direct significant impacts; it also concluded that the impacts of the project would be cumulatively significant. (Exh. 300, p. 6.12-31.) This is because the impact of the project would be "cumulatively considerable" when "added to other closely related past, present, and reasonably foreseeable probable future projects." (See Cal. Code Regs., tit. 14, §§ 15130, 15355.) Staff's analysis addressed cumulative impacts in two contexts: within the viewshed and within the greater Mojave Desert Area. (*Ibid.*)

Applicant took issue with Staff's second conclusion regarding the significance of the cumulative visual impact to the greater Mojave Desert, contending that "it is improper to assess cumulative visual impacts outside of the project viewshed." (Exh. 65, *supra* [unpaginated].) This argument seems meaningless given that Staff also considered the cumulative impact within the viewshed, concluding that it was significant because of the visual change represented by recent past projects (the Primm casinos on the border, the Bighorn generating station, and the Primm golf course) along with the considerable additional impact caused by ISEGS, a Caltrans "port of entry" project, a huge solar photovoltaic project that would be located adjacent to ISEGS, and the Desert Xpress train project. (Exh. 300, p. 6.12-32 and 33.)



Moreover, Applicant cites absolutely no law, regulation, or case that would limit a cumulative analysis to a “viewshed.” Certainly nothing in CEQA or its state-adopted Guidelines would exclude from the public and decision-maker’s decision a broader analysis where such was relevant. For this project, Staff thought that a relevant consideration is the cumulative impact such projects potentially have on the landscape of the Greater Mojave Desert. Numerous renewable projects (including 63 wind projects and 66 solar projects, many not subject to being licensed by the Energy Commission) are proposed to be located throughout the Mojave, and many of them are within the view of arterial roadways. (Exh. 300, p. 6.12-33; Exh. 308 [Figure 1].) Some have only BLM right-of-way applications; some are currently subject to environmental analysis. (Exh. 308.) Staff explained that, if even a fraction of these projects are built, along with ISEGS, the result will be “profound widespread cumulative impacts to scenic resources” in the Mojave Desert, and a “substantial decline in the overall number and extent of scenically intact, undisturbed desert landscapes” viewers experience as they travel through the desert. (*Ibid.*; see also 12/14/09 RT, pp. 180-181.)

Applicant suggested by way of cross-examination that the Staff and the Energy Commission should not consider analysis outside of the viewshed because of language in BLM guidance documents suggesting that air impacts should be based on the airshed, and water impacts on the watershed. (12/14/09 Tr., p. 212.) The BLM guidance in question was not identified, and is not apparently part of the record. But more important, it is not clear that the guidance is applicable at all to visual resources. Even if it were, such guidance documents have no legally binding effect on any person or agency regarding how environmental analysis should best inform decision-makers of the consequences of a project approval.

### **III. BIOLOGICAL RESOURCES: IMPACTS TO THREATENED SPECIES AND RARE PLANTS CAN BE FULLY MITIGATED PURSUANT TO STATE LAW IF THE ENERGY COMMISSION REQUIRES MITIGATION CONSISTENT WITH ITS PRIOR DECISIONS.**

#### **A. Introduction and Applicable LORS.**

The ISEGS project would be located on land that is habitat for desert tortoise, a species that is present on the project site and that is listed as “threatened” under both the federal and state Endangered Species Acts. Other listed or “species of special concern”<sup>5</sup> (e.g, Nelson’s bighorn sheep, the American badger, and the golden eagle) appear to use the site as forage. In addition, the project site is occupied by a number of plant species that are “rare” as defined by the CEQA Guidelines.

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<sup>5</sup> “Species of special concern” are ones identified by CDFG as species that have declining population levels, limited ranges, or continuing threat that make them susceptible to eventual extinction. (Exh. 300, p. 6.2-18; Exh. 1, p. 5.2-7.)

The ISEGS' use of tortoise habitat, as well as the relocation of tortoises living there, triggers the "incidental take" provisions of the California Endangered Species Act (CESA), which would normally require the Applicant to seek a "take permit" from the California Department of Fish and Game (CDFG). However, because the Energy Commission's license is the "in lieu" consolidated state permit, CDFG works with the Staff to determine the conditions applicable to the "take" of a species, and these conditions are proposed in the Staff's FSA. CDFG and Staff have traditionally required that projects that result in "take" of endangered species and habitat must, if the habitat cannot be successfully avoided and preserved, pay for the purchase and preservation of private land with similar habitat.

CESA requires that incidental take of listed species be "fully mitigated." (Fish & Game Code, § 2081(b)(2).) Depending on the quality of the habitat taken by the project, it is common for CDFG and the Energy Commission to require that more land be purchased for such habitat preservation than is actually used by the project. Whether a ratio of offset habitat purchase is required, and what the ratio turns out to be, turns on a number of biological considerations, such as the size of the project, the impact to the species, and the quality and nature of the habitat disturbed. (1/11/10 Tr. pp. 268-272.) The "ratio" for such offset purchase of tortoise habitat preservation is typically 3:1 (three acres to be purchased and preserved for every one taken by the project), although ratios can be higher depending on the circumstances, and have been as high as 5:1 in some past Energy Commission cases. (1/11/10 Tr. 280-282.)

In some cases, depending on the facts, money that would otherwise be used to purchase and preserve new habitat can be used instead to improve existing habitat of the target species to decrease mortality and increase carrying capacity. The "fully mitigated" provision means that mitigation must be sufficient to prevent listed species from becoming more threatened and endangered than they were before the proposed project was built. In fact, when CDFG itself issues incidental take permits, it must make a specific finding that the impacts of the taking are fully mitigated with respect to the project's effect on the species. (1/11/10 Tr. p. 264.)

BLM implements its duties under the federal Endangered Species Act by similarly requiring mitigation, although such mitigation is at a ratio of 1:1 (one acre provided for one acre taken), and this provision is typically reduced to financial compensation that is used for habitat enhancement rather than "offset" habitat purchase. This is because BLM is a land management agency and, as such, directs its mitigation to land management and habitat enhancement measures that can be carried out within the lands that it administers. (1/11/10 Tr. p. 273.) CDFG is not limited to lands it administers, and can (and does) seek mitigation throughout a species' range in California. (*Ibid.*) CDFG and Staff agree with BLM that much can be accomplished in terms of protection of the tortoise through habitat enhancement, including fencing of certain roads and freeways, closure of unpermitted dirt roads, control of ravens (which eat young tortoise), and so forth. Thus, CDFG and Staff have proposed a 3:1 ratio for "offset" tortoise mitigation, but with the 1:1 BLM mitigation "nested" (i.e., accounted for) within the 3:1. This effectively means that CESA's "fully mitigated" requirement will be

met in part by programs to enhance habitat and protect the species, coupled with a program to purchase and preserve in perpetuity “offset” habitat that might otherwise be exploited for development. Such mitigation is consistent with take permit requirements in other Energy Commission licensing cases.

Rare plants are also on the ISEGS site. The rare plants are not listed under the state or federal Endangered Species Acts, but qualify as “rare” as defined in the CEQA Guidelines. (Cal. Code Regs., tit. 14, § 15380(d) and 15380(b)(2).)<sup>6</sup> Indeed, some of these plants are far more limited in their distribution and abundance than many species listed under the Endangered Species Acts. As such, the project will cause a significant impact pursuant to CEQA because it will “substantially reduce the number or restrict the range of an endangered, rare, or threatened species.” (Cal. Code Regs., tit. 14, § 15065(a)(1) [CEQA “mandatory findings of significance”].)

Very shortly before the January evidentiary hearings, Applicant produced a plan to avoid many of the identified rare plants in question, although Staff and other parties disputed the effectiveness of the avoidance plan, which involved small “islands” or “halos” around such plants. More recently, and after the close of hearings, Applicant has proposed to amend its project proposal to avoid some of the areas that have the greatest number of rare plants by reducing the project footprint of the Phase 3 area. (Exh. 88 [Applicant’s February 11, 2010, filing: “Biological Mitigation Proposal (‘Mitigated Ivanpah 3’)].) This proposal is similar to Staff’s “reduced acreage” alternative, but it proposes only part of the footprint changes that would reduce or avoid impacts to rare plants. Although impacts to plants are reduced, impacts to at least two such species remain significant unless additional mitigation is required.

Staff’s analysis regarding Biological Resources impacts and mitigation was contested to some degree by both Applicant and most of the intervenors. Applicant’s principle dispute regarding the desert tortoise was whether CESA should require mitigation beyond that which BLM would require for the federal Endangered Species Act. Applicant also disputed whether the impact to rare plants should be considered significant. By contrast, most intervenors contended that alternative locations, alternative site configurations, or alternative electric generation technology (distributed solar voltaic generation) could avoid project impacts. They argue, in essence, that the project should be rejected because one or more of these alternatives is feasible and would avoid project impacts. These concerns regarding project alternatives will be addressed in the following section of this brief.

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<sup>6</sup> The rare plants in question are also defined by the Energy Commission as “species of special concern,” a term that includes species listed for protection by federal, state, and local agencies, but also “those rare and endangered plant species recognized by the Smithsonian Institution or the California Native Plant Society.” (Cal. Code Regs., tit. 20, §1702(v).) Species of special concern are required to be identified in the Application for Certification. (Cal. Code Regs., tit. 20, § 1704(c)[referencing the information requirements of Appendix B, Information Requirements for an Application, section (g)(13)(A)(ii)].) The rare plants relevant to this discussion are all identified and listed by the California Native Plant Society as rare.

The FSA identifies a number of potentially or generally applicable LORS (Exh. 300, p. 6.2-5 through 7), but the ones relevant to this discussion are in the Fish and Game Code. CESA prohibits the “take” of plant or animal species listed by the California Fish and Game Commission as endangered or threatened. (Fish & Game Code, § 2080.) “Take” includes, among other things, capturing or killing of a listed species. (Fish & Game Code, § 86.) The “incidental take”<sup>7</sup> of a listed species requires a permit (Fish & Game Code, § 2081), and the permit may only issue on condition that “the impacts of the authorized take shall be minimized and *fully mitigated*.” (Fish & Game Code, § 2081(b)(2) [emphasis added].) Such mitigation “shall be roughly proportional in extent to the impact of the authorized taking on the species.” (*Ibid.*) Moreover, to obtain an incidental take permit, a project applicant must demonstrate that the mitigation for a listed species is adequately funded and monitored, and that the action will not jeopardize the continued existence of the species. (Fish & Game Code, § 2081(b)(4), and subd. (c).)

In addition to CESA requirements, other Fish and Game Code requirements make it “unlawful for any person to substantially divert or obstruct the natural flow of a bed, channel, or bank of any river, stream” without notice to CDFG and a “written agreement” regarding the protection of fish and wildlife resources. (Fish & Game Code, § 1603(a).) These required agreements are called “streambed alteration agreements.”

Pursuant to the Governor’s November 2008 Executive Order, CDFG staff and Energy Commission staff have worked to incorporate the “incidental take” requirements and the “streambed alteration agreement” requirements of the Fish and Game Code into the Energy Commission’s “in lieu” permit by incorporating proposed mitigation conditions into the FSA. (1/11/10 Tr. p. 260-264.) Staff and CDFG believe that the impacts to desert tortoise will be “fully mitigated” if the conditions in the FSA are adopted by the Energy Commission. (*Ibid.*) With such conditions, the Energy Commission permit serves as the “in lieu” incidental take permit that would otherwise be issued by CDFG. Similarly, Staff and CDFG have prescribed “streambed alteration agreement” conditions that CDFG would normally impose to mitigate impacts on streams in the FSA, allowing the Energy Commission permit to satisfy those additional requirements of the Fish and Game Code. (*Ibid.*)

Thus, the Energy Commission permit should include consolidated conditions to satisfy CEQA, CESA, and the “streambed alteration agreement” requirements of the Fish and Game Code, as set forth in the FSA. Consolidation in the Energy Commission permit is favorable to the applicant in that it reduces the time required for sequential permits, eliminates the possibility of inconsistent agency conditions, and reduces the time and risk of legal challenge. (1/11/10 Tr. p. 262.) Despite these obvious advantages, Applicant contests the conditions proposed by the Staff and CDFG, contending that such mitigation is too expensive and that lesser mitigation will do. This conflict is discussed below.

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7 “Incidental take” is the capture or killing of listed species that is “incidental to an otherwise lawful activity.” (Fish & Game Code, § 2081(b)(1).)

**B. The Proposed Desert Tortoise Mitigation is Required By CESA and is Consistent with Prior Energy Commission Siting Cases.**

The ISEGS project will permanently use 3713 acres and temporarily disturb an additional 321 acres, thereby affecting about 4034 acres of habitat that is currently relatively undisturbed desert tortoise habitat. (Exh. 300, p. 6.2-8, 29.)<sup>8</sup> The site is within the U.S. Fish and Wildlife Service (USFWS)-designated Northeastern Mojave Recovery Unit for the desert tortoise. (*Id.*, at 29.) The project site is not within designated “critical habitat” for the tortoise, but is within five miles of the Ivanpah Critical Habitat designated by USFWS. (*Id.* at 30.) The USFWS’s 1994 and draft 2008 Desert Tortoise Recovery Plans emphasize aggressive protective management within tortoise “conservation areas,” but also emphasize that land managers should strive to limit the loss of tortoise habitat outside conservation areas as much as possible. (*Ibid.*)

Although the desert tortoise was federally listed in 1989, there is little recovery of the species to show for it. In fact, tortoise populations have been decreasing across its habitat range, particularly in the Ivanpah valley, as a result of human activity. (1/11/10 Tr., p. 409-420, 461.) The proposed federal recovery plan measures have not been adequately funded or implemented. (*Id.*, at pp. 140-141.) Encroachment of human development on habitat, among other things, continues to put pressure on tortoise populations. (*Id.*, at pp. 146-147.) There are numerous measures identified in the federal recovery plan that might result in recovery, including road fencing to avoid vehicular mortality, ending grazing allotments, controlling predators, improving habitat, and purchasing and preserving additional habitat. (*Id.*, at 161-163.)

All parties agree that desert tortoise are present on the ISEGS site, that construction will require capture and removal of the tortoises, that some of these tortoises will be killed by removal or construction, and that the habitat used by the site will not be habitat for the tortoise for at least the duration of the ISEGS project, if ever. (Exh. 1 [AFC], p. 5.2-59.) Some of the tortoises that are removed (in technical jargon, “relocated” or “translocated”) from the site may die, although the USFWS has developed a Relocation/Translocation Plan that is intended to reduce or prevent mortality. (Exh. 300, p. 6.2-49.) Proposed Condition BIO-9 requires that the Applicant develop and implement a relocation/translocation plan that is satisfactory to USFWS, CDFG, BLM, and Staff consistent with federal guidelines for such. (*Id.*, at 6.2-108.) Although such a plan for relocation is essential pursuant to federal law requirements, and will mitigate project impacts to some very limited degree, much more is required if the impact of the project is to be “fully mitigated” pursuant to CESA.

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<sup>8</sup> The precise acreage number is proposed to be reduced by roughly 476 acres in the Applicant’s recently filed “Biological Mitigation Proposal,” at p. 1-2. This brief will use the original footprint numbers, although Staff acknowledges that this number will likely be reduced in accordance with the mitigation proposal.

In order to “fully mitigate” the impacts on tortoise for CESA purposes, the project proponent is required to provide “compensatory mitigation” for habitat loss. Such mitigation is calculated based on the number of acres used by the project (here, 4073), using a 3:1 ratio because of the good quality of the habitat found at the ISEGS site. (Exh. 300, p. 6.2-51.) The 3:1 ratio is required because an offset purchase of habitat for preservation at a 1:1 ratio would not fully compensate for the taking of good habitat, as the net result from the project would be fewer tortoise and less high quality habitat in the future. The ratio is intended to adequately compensate for the habitat taken, even assuming that remaining habitat will be “enhanced” for higher tortoise “carrying capacity,” as well as new land purchased and preserved to “offset” habitat that is taken by the project. (*Id.* at p. 51.) This mitigation approach, effectively implemented, should leave the tortoise no worse off than would be the case had the project not been built. Such is required by Fish and Game Code Section 2081(b)(2), which requires mitigation that is “roughly proportional to the extent of the impact” on the affected species.<sup>9</sup>

This implementation of “full mitigation” pursuant to CESA is statutorily required, and is consistent with the mitigation approach taken in past projects by CDFG and the Energy Commission. (01/11/10 Tr. p. 266-270.) Ratio habitat purchases were required as far back as 1987 for kit fox habitat for the thermally enhanced oil recovery projects in Kern County. The Energy Commission used this approach most recently (with CDFG’s concurrence) in the High Desert and Victorville 2 licenses concerning the incidental take of desert tortoise. (Exh. 300, p. 6.2-52.)

BLM’s “1:1 ratio” for habitat is a mitigation formula that may not result in the purchase of new habitat for preservation. Rather, the 1:1 ratio will translate into an acreage-based amount of money that the applicant must pay, that BLM will then use for tortoise “habitat enhancement, rehabilitation, or [land] acquisition in the East Mojave Recovery Unit.” (*Ibid.*) In the past such money has commonly been used for habitat enhancement. (1/11/10 Tr. p. 113.) Staff recognizes this important BLM mitigation, but is adding additional funding for 2:1 mitigation that will be used largely for the purchase of offset habitat, although it may also be used in part for habitat enhancement. (Exh. 300, p.6.2-55.)

Applicant has agreed to a 3:1 ratio in concept. (*Ibid.*, See also Exh. 63, p. 2.) Conflict between Staff and Applicant arises regarding how the mitigation is calculated, who will calculate it, and whether it is legally required. In essence, Applicant contends that it is legally required to do no more than what BLM would require—the payment of mitigation money based on a 1:1 ratio of acres taken by the project. This is explained in Applicant’s Exhibit 63, which is the principle document setting forth Applicant’s disagreement with Staff regarding CESA mitigation for desert tortoise. (Exh. 65

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<sup>9</sup> The “fully mitigated” requirement in CESA has a notable parallel in CEQA, which provides that an approved habitat conservation plan can avoid the necessity of an EIR if the plan “avoid[s] any net loss of habitat and the net reduction in number of the affected species, or . . . preserve[s], restore[s], or enhance[s] sufficient habitat to mitigate the reduction in habitat and the number of the affected species to below a level of significance.” (Cal. Code Regs, tit. 14, §15065(b)(2)(C).)

[unpaginated proposed revisions to BIO-17, stating that the “rationale for these changes” are those set forth in Exh. 63].<sup>10</sup>

### **1. CESA is More Stringent than the Federal ESA, and Its Provisions Must Be Satisfied.**

The Applicant’s position is that the Energy Commission’s CESA mitigation for desert tortoise should be determined by BLM. (Exh. 63, p. 2.; Exh. 65 [unpaginated proposed revisions to BIO-17].) Applicant contends that the federal and state Endangered Species Acts have the same intent and purpose, and thus should require the same mitigation; moreover, that BLM has determined that for projects on BLM land this translates to a 1:1 ratio (theoretical acreage) reduced to a monetary amount. (Exh. 63, 1/11/10 Tr. 113.) The benefit, from Applicant’s perspective, is that it is required to merely write a check to BLM and be done with the issue. (Exh. 63, p. 2.) Although it claims that no more is legally required, Applicant states that it is willing to triple the amount of this money paid to BLM in keeping with its support of a “3:1” ratio. (*Ibid.*) Applicant believes that this will result in much less cost for mitigation, while contending that the Staff/CDFG-proposed CESA mitigation puts “too much economic burden on renewable energy projects” and will cause them to fail. (*Id.*, at p. 1.)

There are several problems with this remarkable and inchoate argument. First, and most glaring, is that BLM has not fixed the amount it would require per acre taken, as reflected in Tables 1 and 2 of Exhibit 63. Thus CESA mitigation, even when reduced to a monetary amount, has not been specified and would effectively be delegated to a federal agency with no experience enforcing the provisions of CESA.

Even more important, CESA and the federal ESA are *not* identical, and the manner in which federal agencies provide ESA mitigation is markedly different from the manner that CDFG (and the Energy Commission) must implement the “incidental take” requirements of CESA. As discussed previously, CESA requires that impacts to endangered species from incidental take be “fully mitigated,” and that “the measures required to meet this obligation shall be roughly proportional in extent to the impact of the authorized taking on the species.” (Fish & Game Code, § 2081(b)(2).) The requirement for measures “roughly proportional in extent to the impact” effectively imposes a CESA “obligation” for a take permit is to leave the species no more

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10 Although the issue of how much mitigation is necessary has been contested, Staff is unable to find any evidence other than Exhibit 63 setting forth Applicant’s specific disagreement with the Staff’s “fully mitigated” conditions. At the January 11, 2010, evidentiary hearing, Applicant’s witness reiterated Exhibit 63 arguments that BLM should determine all tortoise mitigation, and that CDFG’s proposals should be rejected. (1/11/10 Tr. pp. 113-130.) However, neither Exhibit 63 nor the hearing testimony—nor any other evidence in this proceeding—addresses how such yet-to-be-determined BLM tortoise mitigation can be said to comply with the CESA requirements that a project’s effects involving “incidental take” listed species be “fully mitigated” to “the extent of the impact,” and that such mitigation be “adequately funded and monitored.”

threatened and endangered than if the project had not been allowed; indeed, this is how CDFG interprets the statute. (1/11/10 Tr. p. 264.)

Federal law differs. There is no similar provision in the federal ESA requiring that effects from an incidental take be “fully mitigated.” The regulatory device for federal ESA incidental take permits is the Biological Opinion, which is required to address (1) whether the federal action will result in “jeopardy to the continued existence of the species,” and (2) whether the federal action will destroy or adversely affect specifically designated “critical habitat”; if the answer to these two questions is negative, the take permit may issue without any significant mitigation. (See 6 Manaster & Selmi, *California Environmental Law* (2009 ed.) Endangered Species Regulation, § 81.14[3][d], pp. 81-81 to 81-89.) Although incidental take that will not result in jeopardy to the listed species requires the Biological Opinion to include an “incidental take statement” that lists “reasonable and prudent measures,” such measures “cannot alter the basic design, location, scope, duration, or timing of the action and may involve only minor changes.” (*Id.*, at pp. 81-88 to 81-88.1.) In other words, the federal ESA has no requirement at all for robust mitigation except for the most serious incidental take permits involving species jeopardy and critical habitat.

In this statutory context, it is understandable that BLM addresses federal ESA mitigation very differently than CDFG implements CESA. As explained by the CDFG witness, BLM does its mitigation as a land management agency, normally with habitat enhancement on its own lands. (1/11/10 Tr. 273-274.) Mitigation for impacts like those at Ivanpah are of a second order, and not required by the ESA; they are required instead by the BLM’s Northern and Eastern Mojave Desert Management Plan (NEMO), a programmatic document. In distinct contrast, CDFG is required to “fully mitigate” individual projects involving incidental take, is not limited to land management jurisdiction, and frequently requires purchase of offset habitat. (1/11/10 Tr. p. 273-274.) CDFG has in the past required ratio habitat acquisition for other non-Energy Commission projects on BLM land. (*Id.*, at p. 280-281.)

Equally important, CESA requires that a permit can be issued only where there is a demonstration that the mitigation for the species affected will be “adequately funded and monitored,” an additional requirement that is fundamental to CESA. (Fish & Game Code, § 2081(b)(4).) If left to a future determination by BLM, it is unclear how or whether CESA’s obligations will be discharged.

Thus, CESA is clearly more protective than the federal ESA, and this fact is important in a federal law context. The Federal Land Management Policy Act (FLPMA) requires right-of-way permits to contain, among other things, terms and conditions that “require compliance with State standards for public health and safety, *environmental protection, and siting* . . . if those standards are more stringent than applicable federal standards.” (43 U.S.C. A. § 1765(a)(iv.) [emphasis added].) It follows that even if there were no applicable state permit, BLM would be required to enforce the more rigorous terms of CESA. However, since ISEGS requires an applicable state permit, these more stringent conditions can and must be imposed by the State’s permit. (See *California*



*Coastal Comm. v. Granite Rock Co.* (1987) 480 U.S. 572, 586-589 [holding that state permits imposing environmental regulations apply on federal lands subject to FLPMA.]

## **2. CESA Requires That “Take” Mitigation be Adequately Funded and Monitored.**

CDFG and Staff have proposed specific and elaborate provisions in BIO-17 to implement the “adequately funded and monitored” requirements of CESA. (Exh. 300, pp. 6.2-53 to 55, 120 to 125.) These provisions, which are consistent with provisions in prior Energy Commission decisions involving endangered species “incidental take,” require a “security” instrument, in the form of an irrevocable letter of credit, pledged savings account, or similar financial guarantee that is sufficient to cover total costs for (1) offset habitat land acquisition, (2) initial habitat improvements, and (3) an endowment to support long term management of the offset habitat property. (*Ibid.*)

The BIO-17 condition proposed by Staff and CDFG is also specific about how these costs are to be calculated. The amount of the endowment is established by a Property Analysis Record (PAR), a computerized database developed by the Center for Natural Lands Management. (Exh. 300, p. 6.2-53.) This results in a specifically crafted management plan which includes the habitat value of land to be acquired and any required habitat enhancement measures and monitoring. (*Ibid.*) Based on records from CDFG regarding recent land purchases in the region, Staff and CDFG have proposed a specific per acre acquisition fee (\$910/acre) upon which to base the mitigation, as well as the other factors necessary to calculate the total security required. (*Id.* at p. 54-55.) Fundamental to the purchase of offset habitat is the requirement that such lands be managed in perpetuity for the benefit of the species. (*Ibid.*) Since BLM does not normally require land purchase with the 1:1 monies it requires, BLM’s mitigation requirements would omit this significant cost factor from its mitigation charge.

BLM’s “1:1” mitigation requirement would be calculated on a different land value (probably \$500/acre) based on past prices in the eastern Mojave. (Exh. 300, pp. 6.2-54, 55.) To this, BLM would add a 15 percent acquisition cost, as well as other costs. (*Ibid.*) No endowment for land management would be required, and it is not likely that land would be purchased. The money that BLM would require for mitigation would be considered to provide one-third of the total acreage requirement in Staff’s 3:1 condition; Staff’s additional 2:1 requirement would be based on CDFG/Staff calculations, and would be subject to its “security” requirement. (*Ibid.*)

BIO-17 would also allow for purchase of offset habitat outside of the Northeastern Mojave Recovery Unit, based on Staff and CDFG belief that such purchases may be more practical and beneficial to the long-term goal of species recovery than limiting purchases to within a specific recovery unit. BLM has stated that it either will not or cannot consider purchases outside of that unit, but has also stated that there may be only limited possibilities for purchase of private lands within it. (Exh. 300, p. 6.2-56.)

### 3. Applicant's Revisions to BIO-17 Do Not Comply with CESA.

Applicant's proposal is to delete the Staff/CDFG BIO-17 condition and re-write the provision to turn all CESA mitigation over to BLM, based on the 1:1 mitigation ratio set forth in BLM's Northern and Eastern Mojave Desert Management Plan, or "NEMO." (Exh. 63.) Applicant's "gutting" of BIO-17 would remove all elements of specificity set forth in the condition, and leave most of it to be determined by BLM in the future. (Exh. 65 [unpaginated "Proposed Revisions to BIO-17"].) Although BLM staff generally agrees with Staff and CDFG regarding the kinds of measures that would be used to mitigate for tortoise, BLM "cannot make pre-decisional firm commitments to implement specific actions for such mitigation." (Exh. 300, p. 6.2-56.) Thus, for the Energy Commission to leave tortoise mitigation up to BLM would be to defer mitigation for future determination. Applicant's BIO-17 version would also forbid the purchase of offset habitat (what it calls "parcel by parcel acquisitions") and instead require that all compensatory mitigation be devoted to funding measures for tortoise recovery identified in the NEMO. (Exh. 65 [unpaginated "Proposed Revisions to BIO-17"].) Tortoise mitigation would be restricted to "implementation of region-wide management plans and land use planning as described in the NEMO." (*Ibid.*)

Even if the Applicant's proposal would defer mitigation to some future BLM determination, the net result of Applicant's proposed changes is obvious: it will cost much less, and provide much less mitigation for the project's take of the tortoise. It would provide a far lower level of funding for mitigation, and no offset habitat could be purchased, preserved, or enhanced to "fully mitigate" the project's "take" of tortoise and significant incursion on tortoise habitat. The specific requirements for funding and monitoring—an essential CESA requirement—would disappear from the condition entirely.

Although the record for this proceeding is well-developed and includes much testimony from an array of biological experts, no substantial evidence supports Applicant's proposed revisions to CESA requirements. Applicant has provided no evidence at all that the mitigation it proposes (which is in fact not yet determined by BLM) will actually "fully mitigate" for tortoise impacts. The only documents in the record that Staff can find are Exhibits 63 and 65. The former is a two-page letter written by counsel that incorrectly equates federal ESA and CESA requirements. The latter is nothing more than unexplained language changes to BIO-17, referencing the two-page letter as its underlying "rationale." Such "evidence" – an inaccurate statement of legal requirements – is insufficient to support Applicant's revisions to Staff's proposed condition of certification or Energy Commission findings, even if such findings could otherwise be squared with applicable law.

Moreover, Applicant's ill-defined and ill-justified proposal cannot be squared with the basic tenets of CESA. It is completely inconsistent with the take permit requirements in prior Energy Commission decisions that have incorporated CESA "take" requirements. Staff strongly opposes an unprecedented Energy Commission "override" of CESA

provisions. However, override findings would be the only prudent course if the Commission should choose to adopt requirements similar to those Applicant advocates, rather than imposing the CESA requirements for full mitigation in BIO-17.

**C. Impacts to Rare Plants Are Significant, but Staff Has Proposed Mitigation to Reduce the Impact to Less than Significant.**

As described under “A.,” above, the ISEGS site has plants that are “rare” pursuant to CEQA, and the incidental take of such plants is a significant impact pursuant to the CEQA Guidelines’ “mandatory findings of significance.” (See Cal. Code Regs., tit. 14, §§ 15065(a)(1), 15380(d).) Two of these plants are exceedingly rare in California and have been found only in this region near the Nevada border. One is found only within California. (Exh. 305, Figure 9.) Applicant has changed the project to avoid some of the largest concentrations of rare plants found at the site. Adoption of the Applicant’s Phase 3 “Biological Mitigation Proposal” reduces the impacts to rare plants by excluding part of the Phase 3 area (476 acres) from the project site. However, the Biological Mitigation Proposal does not include Staff’s proposed avoidance of rare plants in Phase 1, and the project will still affect a high number of Mojave milkweed, one of the rarest species. Staff has thus proposed additional mitigation in its FSA supplement which could reduce the impact to all species to less than significant. This mitigation was subject to testimony at the March 22 hearing; it is discussed further under the “Alternatives” section below.

**D. Fish And Game Code Section 1603 Requirements are Applicable LORS With Which Applicant Must Comply.**

As discussed in “A.,” above, Staff and CDFG include “streambed alteration agreement” requirements in proposed condition BIO-20 of the FSA. Applicant proposes to delete this requirement, based only on this terse explanation: “It is our understanding based on our professional expertise in preparing environmental reviews that mitigation is not required in the absence of a significant unmitigated impact.” (Exh. 65 [unpaginated, titled “BIO-20”].) This statement might make sense if it pertained to CEQA. However, the requirement for “streambed alteration agreements” comes from separate provisions in Fish and Game Code sections 1600 *et seq.* Those provisions require “any person” to inform CDFG of any changes or diversions to “the bed, channel, or bank of any river, stream, or lake,” and for CDFG to develop “proposals that are acceptable to the department [CDFG] and the affected person.” (Fish & Game Code, § 1603.) The result of this process is what is generally called a “streambed alteration agreement” between CDFG and any person or entity altering a stream or its bank.

These requirements are acknowledged in the Applicant’s AFC. (Exh. 1, p. 5.2-6.) There are many alluvial streambeds within the ISEGS site. (01/11/10 Tr. 278.) It is unlawful for any person to proceed with any activity altering a stream or its bed until such an agreement has been undertaken and CDFG has found that the activity will not

harm existing fish or wildlife resources. (Fish & Game Code, § 1603(c) and (d).) This requirement applies regardless of any CEQA-like determination of “significant impact,” as CDFG itself testified. (1/11/10 Tr., p. 278.)

The inclusion of the “streambed alteration agreement” requirements in the CEC license is pursuant to the Energy Commission’s exclusive permitting authority, the proposed CEC/CDFG memorandum of understanding, and the Governor’s executive order for expediting solar facility licensing; it is intended to roll all state permit requirements into the Energy Commission license, to consolidate agency requirements, and thereby reduce time and increase efficiency. Applicant’s objection to such a requirement misapprehends its necessity, its nature, and its intent, and provides no reasonable basis for deleting BIO-20.

**E. Although Staff Found No Significant Direct Impact to Bighorn Sheep, Staff Proposes a Mitigation Measure Due to the Project’s Contribution to Regional Cumulative Impacts to the Species.**

Nelson’s Bighorn Sheep is not a species listed as threatened or endangered pursuant to CESA, but is identified as a “species of special concern” by CDFG in the California Natural Diversity Database as an indicator of regional habitat change or a future listed species. (Exh. 1, p. 5.2-7.) There is no question that Nelson’s Bighorn Sheep have been seen near the ISEGS site, and that the sheep inhabit the nearby Clark Mountains. (Exh. 300, pp. 6.2-25, 26.) Staff thus looked for any evidence that the sheep would be affected by the project. Although there was much discussion of the possibility of such impact, there is little concrete evidence to support it other than past sightings in the higher reaches nearby. (*Ibid.*) No studies are available to confirm presence of the sheep in the project area, nor to document the use of Ivanpah Valley as a migratory area. (*Id.*, at 6.2-26; Exh. 85, p. B-4.) However, Staff believes that it is possible that bighorn sheep occasionally use the ISEGS site as spring foraging habitat. (*Id.*, at p. 6.2-26.) While Staff did not find a significant direct impact based on the potential nearby presence of the sheep, the ISEGS project contributes to regional cumulative impacts to the species. (Exh. 300, p. 6.2-46.)

Accordingly, BIO-19 would require Applicant to construct and maintain an artificial water source in the eastern part of the Clark Mountain range. (*Id.*, at p. 6.2-30.) This artificial water source would expand foraging opportunities in the lower elevations of the mountains. Although Applicant’s testimony called for the deletion of this requirement on the ground that no significant impact has been assigned to the sheep (Exh. 65, *supra* [under “BIO-19”]), Applicant has elsewhere indicated that it does not object to satisfying this modest condition “outside the regulatory process.” (*Id.*, under “Project Area”; Exh. 85, p. B-4.)

Although the FSA discussed potential impacts to other species’ foraging habit (including the Golden Eagle, burrowing owls, and American badger habitat (Exh. 300, pp.6.2-73, 74), there is no substantial evidence to support likelihood of a “take” of such species (or

a significant impact to them) as a result of the project. (See Exh. 1, pp. 5.2-23 to 27; Exh. 65 [“Other Special Status Species”]; Exh. 85, pp. B-3 and 4.) Thus, no specific separate mitigation is required for impacts to such species. However, any lands that are purchased or enhanced for desert tortoise mitigation would likely also be of benefit to the wildlife species that frequent the ISEGS site.

#### **IV. PROJECT ALTERNATIVES: STAFF’S ANALYSIS WAS THOROUGH AND SUFFICIENT.**

##### **A. The FSA Includes a Reasonable Range of Project Alternatives.**

Staff analyzed 23 alternatives to the ISEGS project. (Exh. 300, p. 4-1.) These included eight alternative site locations (including a private land alternative), a range of alternative solar and renewable generation technologies, generation technologies using different fuels, and conservation/demand-side management. (*Ibid.*) Staff also analyzed intervenor Sierra Club’s site alternative that proposes to move the entire project onto land closer to the I-15 freeway. Staff concluded that none of the analyzed site locations were environmentally superior to the ISEGS site, such that they would avoid similar significant impacts. (*Ibid.*) Staff’s 90-page analysis provides much detail on the benefits, comparative impacts, and feasibility of these alternatives.

Staff included four site alternatives that were not carried forward for analysis because of their impacts, as well as two that were (01/12/10 Tr., pp. 322-323.) In addition, a “reduced footprint” alternative that reconfigures the project to avoid rare plants was also analyzed. (*Id.*, at p. 323; Exh. 305, p. 8.)

Among the technologies considered are large scale solar photovoltaic (PV) systems and different solar generation technologies (such as the Sterling dish and parabolic trough). (Exh. 300, p. 4-2.) These technologies would not substantially change project impacts. (*Ibid.*) Other generation technologies, including wind, geothermal, biomass, tidal wave, natural gas, and nuclear, were also considered. However, these technologies were found to be infeasible, fail to meet principle project objectives, or not eliminate impacts from the project without creating their own significant impacts at other locations. (*Ibid.*) Conservation and demand-side management, while attractive and worthwhile measures in their own right and superior in position in the State’s “loading order” for electricity, have already been factored into the State’s electricity forecast, and are insufficient to reduce the need for new generation from renewables to meet the State’s ambitious greenhouse gas (GHG) reduction goals. Similarly, “rooftop” solar PV, or “distributed generation,” has already been factored into the State’s electricity supply and demand forecast and, even at the most optimistic penetration levels, will not meet the State’s requirements set forth in the Renewable Portfolio Standard. (*Ibid.*)

Intervenors criticized Staff’s Alternatives analysis for various reasons, arguing variously that the conclusions were insufficiently supported, that not enough site location

alternatives were considered, that rooftop or distributed solar PV was too quickly discounted, and that the Sierra Club is proposed alternative (also called the “I-15 Alternative”) is in fact superior to the ISEGS site. These criticisms are not objectively fair. Although it is always possible to suggest or posit new alternative sites to any project, it is extremely difficult to find a site alternative that meets ISEGS project objectives and does not have similar impacts to visual and biological resources. Moreover, while Staff did seriously consider the Sierra Club alternative, it concluded that this ill-defined alternative may not be better for comparative biological impacts, and is likely infeasible because of a variety of project site constraints.

Staff credits Sierra Club for proposing a site alternative that, despite its questionable feasibility, provoked a healthy and constructive discussion of the comparative value of tortoise habitat. The Sierra Club alternative was the only site location alternative with supporting analysis and testimony from an intervenor. Intervenor Center for Biological Diversity (CBD) proposed a different alternative—distributed (including rooftop) solar PV. These two intervenor alternatives consumed much of the Alternatives discussion at the evidentiary hearings. A Staff-proposed “reduced footprint” alternative (to avoid rare plants) was also presented in Staff’s testimony, and is important because this alternative has subsequently been proposed (in part) by Applicant. These topics are discussed in order below.

**B. The Sierra Club Alternative is Ill-Defined, Offers Disputed Benefit, and is Infeasible.**

In June 2009, Sierra Club filed a letter requesting that Staff consider an alternative that would locate the project to the land along the west side of I-15. This is land that Applicant had previously suggested could be used for relocating the desert tortoise displaced by the project. (Exh. 300, p. 4-43.) Sierra Club and other intervenors had previously suggested that the land closer to I-15 was not suitable for “translocation,” contending that nearness to the major roadway depletes the area of such tortoise populations. (*Ibid.*) The “I-15 alternative” was not actually located on any map filed by Sierra Club, although Sierra Club did some survey work in areas near the freeway to assess them for presence of tortoise and suitability of habitat. Based on the facts and analysis that accompanied the Sierra Club proposal, Staff delineated the I-15 alternative “site” as an area extending up to almost one and one half miles west of I-15, roughly four miles in length, overlapping with Phase 1 of the proposed project. (Exh. 300, Alts. Fig. 6.)

The I-15 alternative was proposed during a time when Staff was trying to finalize the FSA/DEIS and the draft document was being reviewed by BLM. Nevertheless, Staff did its best to assess the late-proposed alternative and visited the suggested alternative area to assess the quality of the habitat for tortoise and rare plants, as well as other environmental impacts. (Exh. 300, p. 4-43 to 49.) The site reconnaissance was made in August 2009. (*Id.*, at p. 4-44.) The examination of vegetation, ground cover, plant diversity, and other factors indicated that the alternative site is “high quality relatively

undisturbed habitat (creosote bush scrub) for desert tortoises.” (*Ibid.*) Staff concluded that “the I-15 alternative would not significantly reduce impacts to sensitive plant and wildlife species,” and that it would “likely have biological resource impacts similar to those of the proposed ISEGS project [site].” (*Id.*, at p. 4-45.) Staff further concluded that the impacts of the I-15 alternative would be the same for cultural resources (low sensitivity, low impact), but would have worse impacts to visual resources. (*Id.*, pp. 4-47 to 49.)

Intervenor Defenders of Wildlife (DOW) presented testimony that the entire area within three miles of I-15 is a “sink” for desert tortoise, where populations are declining because of the effect of this major road. (01/11/10 Tr. pp. 456-460.) Degradation of the habitat occurs because of proximity to the road, even though the vegetation and other indices for good habitat are still present. (*Ibid.*) The DOW witness testified that placement of “tortoise fence” barriers along the roadway would likely improve such habitat by reducing road mortality. (*Id.*, at p. 461.) While such fencing would reduce “connectivity” between the areas east and west of the road, for genetic purposes, such connectivity would still exist because of drainage channels that allow tortoises to pass underneath the roadway. (*Id.* at pp. 438-439 [Connor].) Western Watershed Project’s Dr. Connor also agreed that road “tortoise fencing” would improve the viability of habitat near the road. (*Ibid.*)

Consistent with this testimony was that of a witness for intervenor Sierra Club, who testified that his site survey found far higher tortoise presence as one moved away from the freeway. (01/12/10 Tr., p. 308.) Roads result in tortoise death from vehicle strikes, removal by passers-by, and predation by ravens that often follow road corridors in their scavenging. (*Id.* at 309.) The Sierra Club witness concluded that locating the project next to the freeway, or nearer the freeway, would be less damaging to the tortoise and its habitat. (*Id.* at 311.) The witness also stated that the Sierra Club alternative does not have a fixed location, and there were no “hard lines established” for such location. (*Id.*, at p. 315.)

Applicant and Staff criticized the Sierra Club field works for “bias” in terms of the area selected for sample, contending among other things that the sample area was both small and not representative of habitat in the general area. (Exh. 305, p. 24; 01/12/10 Tr. 330-331; Exh. 85, pp. A-2 to A-4.) The Sierra Club fieldwork was limited in scope. (Exh. 305, Fig. 4.) Staff’s on-site inventory conclusion was consistent with USGS models depicting little difference in the quality of habitat in the alternative compared to that of the project itself. (Exh. 305, pp. 33-35, Figure 5.) The chief difference is proximity of the unfenced roadway.

Staff concluded that there was little difference in the quality of the habitat for either tortoise or rare plants, with an important exception—the northern area south and east of Phase 1, nearest the golf course and lowest in elevation (below 2800 feet asl), is likely to have lower habitat value for both plants and tortoise. (Exh. 305, pp. 6-7; 01/12/10 Tr. 326.) The area further south at higher elevation is good habitat for both tortoise and rare plants. (01/12/10 Tr., 329-330.)

Although some of the land in the I-15 Alternative would thus seem to be worse land for tortoise and plants, and thus more suitable for development, the limited amount (1500 acres) and configuration (roughly rectangular shape along the roadway) makes the feasibility of such a site questionable. (Exh. 305, p. 7.) The ISEGS technology uses rather square-shaped parcels, with mirrors focused on a central power tower.

Staff attempted to depict a feasible configuration of the I-15 alternative that would be on less valuable habitat and be in a square-shaped parcel consistent with the “power tower” technology used by ISEGS. This depiction is the yellow box in Exhibit 305, Figure 2. The figure is illustrative of the feasibility issue. Although the land depicted in the yellow box is roughly equivalent in acreage to Phase 3, the alternative itself would overlay more than half of the area of Phase 1.

The site has further constraints, inasmuch as there is a transmission line ROW on the west boundary of the Figure 2 site, a planned Caltrans entry station to the southeast, and a proposed solar photovoltaic project immediately to the north. Within these constraints, the I-15 alternative becomes little more than an alternative configuration for Phase 1 of the project. In other words, the I-15 alternative would only allow for a far smaller project that would not be consistent with project objectives. Moreover, as previously discussed, the testimony indicates that habitat enhancement measures such as fencing the road could rehabilitate otherwise good tortoise habitat that is nearer to the road, diminishing any purported advantage of the alternative.

### **C. Solar Photovoltaic Distributed Generation is not a Feasible Alternative to ISEGS.**

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



Energy Policy Report (IEPR), p. 187.)<sup>11</sup> 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,<sup>12</sup> 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.)

#### **D. Staff Proposed a Reduced Acreage Alternative that Applicant has Now Partially Embraced.**

Staff's PSA drew comments regarding concern for the impact of ISEGS on rare plants, an impact that has been well-substantiated and much discussed through testimony and hearing time. Staff's FSA proposed a "reduced acreage alternative" that would attempt

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11 The 2009 IEPR, as well as previous versions of the IEPR and some documents adopted by the CPUC, the CAISO, and the CARB, will be subject to a separate motion for administrative notice if they have not already been made part of the evidentiary record.

12 Applicant and CBD had conflicting testimony over how DPV should be defined; Applicant testified that DPV is up to 2 MW, and that greater levels are "utility level" projects. (Exh. 85, pp. A-11, 12.) CBD appears to include projects up to 20 MW as DPV, a definition used by the IEPR. (2009 IEPR, p. 197.)

to avoid development of areas within the project that contain rare plants. (Exh. 300, p. 4-52.) The original idea was to essentially “zone” development out of certain parts of the footprint. Such a proposal created complex design issues that Staff could not address, so the proposal changed into condition of certification BIO-18, which would establish a performance standard for plant avoidance and require ISEGS to largely avoid the most valuable biological habitat. (*Ibid.*)

Applicant proposed an approach to meet BIO-18 in public workshops held shortly before the evidentiary hearings. (Exh. 305, p. 8.) The long-term effectiveness of a “within the project” avoidance approach was discussed at great length, and there was “considerable uncertainty” over whether it could be effective. (*Ibid.*) As a result, Staff reintroduced the “reduced acreage alternative” in its rebuttal testimony. This alternative would remove two areas from any development effects: portions (particularly the northern portion) of Phase 3 and portions near the transmission corridor and lay down area, including the northwestern portion of Phase 1. (*Ibid.*) The reduced acreage proposal is depicted in Exhibit 305, Figure 3.

Applicant has subsequently embraced the first half (reduced Phase 3 footprint) of Staff’s alternative in its recent mitigation proposal (Exh. 88), reducing the Phase 3 footprint by 476 acres. This proposal would reduce project impacts to some degree and is a positive change. However, impacts to two plant species, desert pincushion and Mojave milkweed, remain significant because of the high number of these rare plants within the reduced project footprint. Staff has recently filed testimony proposing how the impact to these rare species can be reduced to less than significant in an FSA supplement, so those additional measures will not be further belabored here.

## **V. THE ENERGY COMMISSION SHOULD MAKE OVERRIDE FINDINGS.**

AB 32, the Global Warming Solutions Act, enacted in 2006, established the goal of reducing greenhouse gas emissions (GHG) to 1990 levels by 2020, and creates a comprehensive programmatic framework for reducing the emissions that contribute to climate change. The California Air Resources Board (CARB) has adopted a Scoping Plan to implement AB 32 policies, and this Plan relies heavily on reductions in emissions from the State’s electricity sector. Such reductions are to be achieved through an electricity supply “loading order” that relies first upon conservation and demand reduction programs and secondarily on greatly increased reliance on renewable sources of electricity generation.

These AB 32 goals were further detailed by 2002 legislation creating a Renewable Portfolio Standard (RPS) requiring retail sellers of electricity to procure 20 percent of retail sales from renewable energy by 2017. (Sen. Bill No. 1078 (2001-2002 Sess.) §§ 1, 3.) This goal was accelerated by 2006 legislation that required the 20 percent goal to be achieved by 2010 (rather than 2017). (Sen. Bill No. 107 (2005-2006 Sess.) § 2.) In addition, the Governor has issued an executive order establishing an RPS target of 33 percent by 2020 (Governor’s Exec. Order No.S-14-08 (2008)), and a subsequent

executive order to CARB to act as lead agency to implement the 33 percent RPS goal. (Governor's Exec. Order No. S-21-09 (2009).)

The effect of this legislation, the executive orders, and the CARB Scoping Plan implementing AB 32, is nothing less than the transformation of the electrical system to one that has far greater reliance on renewable generation. The goals are very aggressive, and the 2020 goal of 20 percent reliance of renewable generation will not be achieved. The agencies implementing the policies of AB 32—including CARB, the Energy Commission, and the California Public Utilities Commission—must therefore aggressively redouble efforts to achieve RPS goals and increase the renewable generation contribution to the electricity system.

In its 2009 Integrated Energy Policy Report (2009 IEPR) “Recommendations for Electricity,” the Energy Commission recognized that “electricity from renewable resources provides a number of significant benefits to California’s environment and economy, including improved local air quality and public health, reduced global warming emissions, a diversified state energy supply, improved energy security, enhanced economic development, and the creation of green jobs.” (2009 IEPR, p. 231.) This passage goes on to state that:

Increasing the portion of California’s electricity that comes from renewable power will be essential to achieving statewide GHG emission reductions from the electricity sector. However, the state has encountered significant roadblocks in its effort to meet the 20 percent by 2020 Renewable Portfolio Standard (RPS) goal that continues to present challenges to achieving 33 percent renewables. Major issues associated with meeting the target include difficulty in securing financing, delays and duplication in [state and federal] siting processes, time and expense in new transmission development, the cost of renewable energy in a highly fluctuating energy market, integration of large amounts of renewable resources into the electricity grid, and challenges in maintaining the state’s existing renewable facilities. (2009 IEPR, p. 231.)

Regarding RPS goals, the 2009 IEPR recommends that the state “accelerate the permitting of renewable energy infrastructure and facilities in California,” that state agencies (including the Energy Commission) “continue to work together to implement a 33 percent renewable electricity policy,” and that the CPUC “ensure that investor-owned utilities meet RPS targets and . . . consider the imposition of strong penalties for noncompliance.” (2009 IEPR, pp. 231-232.)

ISEGS will provide an important contribution to the RPS goal. The state’s investor-owned utilities have already contracted for the RPS electricity that it will provide. Although it has significant impacts to visual resources, traffic, and land use (the latter two issue areas were impacts that are strictly cumulative), the project has important economic and environmental benefits that outweigh these unavoidable adverse impacts, making these adverse impacts “acceptable” in a CEQA framework. (Cal. Code Regs., tit. 14, § 15093(a).) Staff thus recommends such override findings.

## VI. CONCLUSION.

The Energy Commission should license the ISEGS project with all the conditions of certification proposed by Staff and CDFG. It is the first of a series of large solar thermal projects that will help the State meet its AB 32 and RPS goals. Apart from visual and cumulative traffic and land use impacts, its impacts can be mitigated. Conditions proposed by Staff and CDFG fully mitigate impacts to desert tortoise and rare plants. Applicant's preference for less rigorous requirements for tortoise would not comply with CESA. Rare plant impacts can likewise be mitigated, and Staff has proposed conditions for such.

Date: April 1, 2010

Respectfully submitted,

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**BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT  
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APPLICATION FOR CERTIFICATION  
FOR THE *IVANPAH SOLAR ELECTRIC  
GENERATING SYSTEM*

DOCKET No. 07-AFC-5  
PROOF OF SERVICE  
(Revised 3/11/10)

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DECLARATION OF SERVICE

I, Janet Preis, declare that on April 1, 2010, I served and filed copies of the attached, Energy Commission Staff's Opening Brief, dated April 1, 2010. The original document, filed with the Docket Unit, is accompanied by a copy of the most recent Proof of Service list, located on the web page for this project at: [[www.energy.ca.gov/sitingcases/ivanpah](http://www.energy.ca.gov/sitingcases/ivanpah)].

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\_\_\_\_\_  
/s/ Janet Preis  
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