STATE OF CALIFORNIA

Energy Resources Conservation and Development Commission

In the Matter of: The Application for Certification for the Ivanpah Solar Project Power Plant Licensing Case	Docket No. 07-AFC-5

COMMENTS OF INTERVENOR COUNTY OF SAN BERNARDINO RE PRESIDING MEMBER'S PROPOSED DECISION

August 20, 2010

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I.
Introduction

San Bernardino County ("County") appreciates the opportunity to have participated in the permitting process and to provide comments and request changes to the recommended conditions of certification on the application for certification of the Ivanpah Solar Electric Generating System ("ISEGS" or "Project"), a proposed 370 MW solar electric generating facility on approximately 3600 acres of BLM land in unincorporated eastern San Bernardino County.

The County supports all forms of renewable energy, if appropriately sited, with mitigation that provides protection for existing property owners and County interests. In its opening brief, the County cited three measures taken to demonstrate this commitment. First, the County's Greenhouse Gas Emissions Reduction Plan that is currently under development, with renewable energy likely to be a key component of those efforts. Second, the County's adoption in 2007 of the "Green County San Bernardino" program, designed to spur the use of the so-called "green" technologies and building practices, including the use of renewable sources of energy. Third, the County's MOU with the Bureau of Land Management ("BLM") in order to expedite the review of development on public lands within the County's boundaries (Exhibit 1101)[1]

[1] http://www.sbcounty.gov/sbco/cob/AG031808/agenda.pdf

During the pendency of this action, in April[2] and July of this year, the County Board of Supervisors took a fourth step by adopting a position statement on renewable energy projects that are being proposed for construction in the desert portions of the County[3]. A copy of this position statement is Attachment "1." In this policy statement, the County identifies four critical issues it faces from the proliferation in the desert of renewable energy projects such as ISEGS: (1) Endangered species mitigation which frequently (as here) requires the acquisition of acreage in multiples of the project area; (2) Infrastructure impacts, such as those to emergency services; (3) Impacts to ongoing operations and maintenance of infrastructure; and (4) Impacts to historical and recognized land use impacts. These policy issues vis-à-vis this Project will be discussed below.

In addition, the Commission should be aware that the National Association of Counties ("NACo") adopted two resolutions at its July 2010 meeting,[4] both of which were sponsored by San Bernardino County. Copies of these resolutions are collectively Attachment "2." NACo represents more than 2,300 counties serving more than 80 percent of the nation's population. By these resolutions, NACo requests that the land and wildlife management agencies adopt procedures that provide for project mitigation other than through land transfer from private to

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[2] A copy of the initial version of the Position Statement was attached to the County's Reply Brief, April 16, 2010.

[3] http://sanbernardino.granicus.com/MediaPlayer.php?view_id=13&clip_id=1712

[4] http://www.naco.org/newsroom/countynews/Current%20Issue/8-9-10/Pages/Delegatesadoptnewpolicydirections.aspx

public ownership and that historic uses of the properties targeted for renewable energy projects be recognized.

II.

The PMPD Does Not Adequately Address or Mitigate Cumulative Impacts on Land Use

Under the California Environmental Quality Act ("CEQA") Guidelines, "a cumulative impact consists of an impact which is created as a result of the combination of the Project evaluated in the EIR together with other projects causing related impacts" (14 California Code of Regulations ("Cal Code Regs") §15130(a)(1)). Cumulative impacts must be addressed if the incremental effect of a project, combined with the effects of other projects is "cumulatively considerable" (14 Cal Code Regs §15130(a)). As further described, the incremental effects are to be "viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects" (14 Cal Code Regs §15165(a)(3)).

In the alternatives section, the Commission has determined that ISEGS will be cumulatively significant. "The contribution of ISEGS, in combination with the many other renewable energy projects proposed for the Ivanpah Valley and Mojave Desert, to the loss of desert lands, is cumulatively significant. Lands formerly available for multiple uses—habitat, grazing, recreation, and open space

— would no longer be available for those uses once a power plant is constructed." (Presiding Member's Proposed Decision ("PMPD"), Alternatives, p. 2)

The huge swaths of native desert land required for these projects is staggering of itself, but the permitting agencies and resource agencies require the project applicant to acquire additional vast reserves of private desert property to serve as mitigation. In this case, the project applicant will be required to acquire no less than 8,146 acres of land suitable for desert tortoise habitat. Thus, between the project site and the mitigation lands, at a minimum, 12,219 acres (nearly 20 square miles) will be made unavailable for any other economic use. As a point of reference, a tract comprising 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. In addition, the set-aside of a tract of land of this dimension is unidentified, but should require its own CEQA (and National Environmental Policy Act) analysis.

The land use impacts of this project will be intensified because of the significant number of renewable energy projects under application within the County's boundaries. The Final Staff Assessment ("FSA") identifies 66 solar projects and 63 wind project applications, with a total overall area of over one million acres within the California Desert Conservation Area, with many of those projected to be sited within the County's boundaries. (FSA 6.12-33)

This incredible consumption of desert land for the amount of power generated is illustrated by comparison to another power project within San

Bernardino County approved within the last ten years. The Mountainview Power Plant Project (00-AFC-2) approved on March 22, 2001, generates 1056 MW but on a site of only 54 acres. Obviously, a natural gas-fired power plant like Mountainview creates other impacts, but it produces nearly three times the power on less than half of one percent of the land impacted by ISEGS.

The County is cognizant of the dual approval process for this Project but to the extent possible, the Commission should coordinate with the BLM in seeking to further mitigation strategies already identified and discussed at length in the Applicant's Opening Brief (pages 76-79). Clearly, acquisition of mitigation land is one of the mitigation strategies, it should not be the sole strategy; and definitely should not automatically be required in multiples of the project acreage. Staff appears to agree that alternative mitigation strategies are viable. "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." (Staff's Opening Brief, page 9)

In short, the County strongly urges the Commission to step up its work with the resource agencies to develop a comprehensive in lieu fee program that will mitigate the biological impacts without the onerous and unrealistic requirement of every renewable energy project acquiring mitigation land in multiples of the project acreage.

III.

The PMPD Does Not Adequately Address or Mitigate Impacts on County Fire and Emergency Services

As a prelude to the discussion of this topic, the County and the Project applicant have been in ongoing negotiations related to this topic. The County believes that the parties have the expectation of a mutually agreeable outcome and the County will keep the Commission advised of the anticipated favorable outcome. If successful, the provisions agreed to will result in mitigation of these impacts to a level less than significant.

Absent that, however, the County wishes to make its position clear. The County posits that the PMPD recognizes that the both the construction and operation of the ISEGS constitutes a dangerous industrial environment. "Workers at the ISEGS Project will be exposed to loud noises, moving equipment, trenches, and confined space entry and egress problems. The workers may experience falls, trips, burns, lacerations, and various other injuries. They may be exposed to falling equipment or structures, chemical spills, hazardous waste, fires, explosions, electrical sparks, and electrocution." (PMPD Worker Safety/Fire Protection, p. 1 citing the FSA)

Similarly, the PMPD recognizes that the very nature of the Project poses the risk of fires, large and small, and the possibility of wildfires. (PMPD Worker Safety/Fire Protection p. 3) Although some of the conditions of certification

require that the project applicant address both fire and emergency conditions on site, it is left to the San Bernardino County Fire Department ("SBCFD") to provide the primary public fire protection and emergency services. (*Id.*) While internal fire protection control measures and other emergency training are important, they are not sufficient to protect the employees, traveling public and surrounding potential for wildfire and potential injuries without backup from SBCFD and other professional emergency service providers.

But fire protection and emergency response, including first response and the expectation of a response time of 45 minutes (*Id.* at p. 3-5) are not the only services of the County on which the Project relies. The Commission will charge the SBCFD with

- reviewing and commenting upon the Construction Fire Prevention Plan and Emergency Action Plan (*Id.* at p. 6),
- reviewing and commenting upon the Operations Fire Prevention Plan and Emergency Action Plan (*Id.*),
- reviewing and commenting upon the Hazardous Materials Business Plan (PMPD, Hazardous Materials Management p. 7, appendix A-18),
- acting as the Certified Unified Program Authority (*Id.*, Appendix A-18), the consolidation of six state environmental programs into one; and,

- responding to hazardous materials permits and spills; the PMPD recognizes that firefighters require specialized training for emergency responses to industrial hazards and that the remoteness of the site means a full resources response time of 3 to 4 hours. (PMPD, Worker Safety/Fire Protection, p. 4)

Although the findings of fact (PMPD, Worker Safety/Fire Protection p. 5) are summary conclusions that the existing fire and emergency service resources are adequate to meet project needs, no findings are made about the impacts of the Project on these services.

The County has been in the process of developing its response to these solar energy projects, and the parties and the Commission were alerted to this. In its opening brief, the County provided the following:

> The County respectfully disagrees with 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. 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 is just within an hour travel time under perfect conditions regardless of the precautions and conditions taken on-site.

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 on-site and even off-site environmental degradation.

The County has contracted for this impact study and provides that study as Attachment "3." This information has been endorsed and presented by CEC Staff in two pending certification cases, the Calico Solar Project ("Calico") (08-AFC-13) and the Abengoa Mojave Solar Project Power Plant ("Abengoa") (09-AFC-5). The power generation at Calico in relation to acreage involved for ISEGS as compared to Stirling dish technology is about the same (PMPD Alternatives p. 22).

Abengoa uses parabolic trough technology, and the PMPD indicates that if ISEGS used this technology, 2000 to 3000 acres of land, and possibly more, would be required for a 400 MW solar trough power plant. (PMPD, Alternatives p. 20) Thus, for similar sized projects located in remote portions of the same desert region and served by the same public services, it is difficult to make the argument that two cause impacts and the third does not. The Commission's failure to include the impacts upon worker safety and fire protection creates the scenario of inconsistency among the conditions of certification and findings among these similarly situated projects. Thus, the County recommends that the Commission impose conditions of certification to adequately address the Project's impacts on County fire protection and emergency services.

Two sets of proposed conditions are attached. Attachment "4" represents those proposed by staff in Abengoa. In Abengoa, the staff adopted the County's consultant's calculations whole-cloth and in Attachment "4," the figures calculated from Attachment "3" are inserted. At a minimum, the Commission should impose the two Conditions of Certification that were included in the Abengoa PMPD, Attachment "5," a hybrid of what have become colloquially known as the "Colusa Conditions" from the Colusa Generating Station Power Plant Project (06-AFC-09).

IV.

The PMPD Does Not Adequately Address or Mitigate Other Impacts

The PMPD does not address the overarching consideration that the Project will employ a relatively novel technology virtually untested in the Mojave Desert. For that matter, the technology is largely untested by this applicant whose apparent sole experience has been the construction of one "pilot plant" in Israel with 1600 heliostats, or less than 1% of the number of heliostats required for this Project, even as it has been reduced in size towards the end of the permitting process. Moreover, this pilot plant has been in operation for only one and a half years. (Evidentiary Hearing Transcript, Gilon, 12/14/09, 108:25 -109:17).

The County respectfully disagrees with the PMPD's conclusion that hazardous materials impacts would pose no significant threat. (PMPD, Hazardous Materials Management p. 7) Despite the County calling these to the Commission's attention, it appears that not all State requirements were thoroughly researched and reviewed prior to the resultant conclusions. There is no reference to the State Above-Ground Petroleum Storage Act, Health & Safety Code §§ 25270 et seq. (FSA 6.4-4) Conclusions regarding air modeling for aqueous ammonia and sulfuric acid are nonexistent. 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. Further study on these and other issues are necessary before conclusions can be drawn.

Staff proposed Condition of Certification REC-1 to conform to Public Resources Code §25529 that would require the applicant to establish an area for public use by the development of a Solar / Ecological Interpretive Center. The Applicant, in its Opening Brief, disputed this condition as one that could be legally imposed, a position evidently adopted in the PMPD since Recreation has been dropped as a topic altogether. The County disagrees with the applicant and concurs, in principle, with this recommendation and is currently engaged in discussions with the applicant in formulating a joint approach to the creation of a facility along these lines on land under the County's jurisdiction. Again, the Commission will be kept apprised of those discussions.

To evaluate whether the proposed Project and alternatives would generate a potentially significant impact as defined by CEQA on recreational resources, the Staff evaluated them against checklist questions posed in the 2006 CEQA Guidelines, Appendix G, Environmental Checklist established for Recreational Resources. These questions are:

A. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

B. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

Testimony elicited during the hearing revealed that annual visitors to the Clark Mountains range in estimates from 12,300 to in excess of 41,000. Per BLM guidelines, a "high use level" is considered to be 10,000 visitors or more. (Kanemoto, 12/14/09, 179:7-21) Just considering recreational use at the Project site, the Ivanpah Dry Lakebed alone is visited by an estimated 5,000 visitors annually. (PMPD, Biological Resources, p. 33, Table 3)

The activities of these visitors are widely varied, from merely enjoying wide open desert landscapes (hiking, camping, windsailing), to historical study (mining, ranching, etc.), to enjoyment and study of nature (bird watching, flora, fauna, wildlife, geological, etc.). Filling in these wide open spaces with miles and miles of mirrors and brightly lit towers would certainly detract from and discourage these recreational experiences. Again, the loss of recreational opportunities on another unidentified 12,000 acres of desert land set aside for mitigation is not addressed.

The County requests that proposed Mitigation Measure REC-1 be reinstated to mitigate the loss of recreation by establishing a viewing platform to see the Project facility. The proponent should also be required to pursue a permit from Caltrans for a freeway sign for the viewing facility exit.

V.

Conclusion

The Commission has a daunting task of striking a balance between meeting the State's renewable energy goals and imposing mitigation for the unavoidable impacts that this Project will create. The projected long operational life of this Project demands even greater scrutiny, and the County is empathetic to the pressures created by the executive and legislative branches of state government, as well as the urgency imposed by the promises of short-lived federal largesse.

This project also underscores those challenges that come from the fact that 84% of the property within the County is within federal jurisdiction. What is more, this project illustrates the dichotomous condition in which the County finds itself, not only with regard to the instant project but as to a myriad of other renewable energy projects that are in various stages of the planning and certification process. On the one hand, these projects promise some direct benefits to County residents such as construction and operations jobs. But on the other, they generate real impacts on County services, plus biological mitigation requirements threaten to forever eliminate tens of thousands of acres of private property from any kind of economic use. When these projects are sited on federal land, such as with this project, the impact is exacerbated. The County has limited, if any, land use authority and thus cannot condition these projects in the ways to mitigate these impacts that it would when federal land is not involved.

Potential tax revenues are also diminished given the tax exemptions that have been mandated to foster this class of energy production.

Thus, although the County supports in a general sense the creation of renewable energy, that support is conditioned on the imposition of appropriate mitigation to the specific County impacts articulated here and throughout these proceedings.

Dated: August 20, 2010

Respectfully submitted,

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By _____
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San Bernardino County Position on Desert Renewable Energy Projects

April 2010

San Bernardino County supports renewable energy and looks forward to the positive economic impact the development of these projects will bring to our local economy. The proliferation of utility scale and smaller energy projects in the Mojave Desert portions of our County have caused careful evaluation and consideration of the appropriate mitigation measures that are needed to protect the environment, future development, and the economy of our region. Projects fall into three general categories:

1. Solar thermal projects producing less than *50 Megawatts (MW)*, and all wind energy and solar photovoltaic projects on *private land* are completely within the County's land use jurisdiction.

2. Projects on *public land* (typically BLM) fall under the jurisdiction of the applicable federal land owner. The County's role in these cases is that of a cooperating agency. As such we are able to review and contribute to draft environmental documents before public distribution.

3. Solar thermal energy projects producing *50 MW or greater, whether on private or public land*, fall under the jurisdiction and procedures of the California Energy Commission (CEC) for permitting and environmental review. If on federal land, a joint permitting and environmental review is conducted with the applicable federal agency. The County may provide public comment or intervene, in which case it may participate in the evidentiary hearing proceedings with the ability to pursue legal action if necessary.

Projects in the first category described above can be conditioned to address impacts on County infrastructure and operations/maintenance costs. Projects in categories 2 and 3 will require a different approach to protect the County's interests. The most critical issues to address in these categories include the following:

- **Endangered Species Mitigation**
    - Support the implementation of an in lieu fee program that will provide much needed funding for conservation, habitat restoration, implementing species recovery strategies, and predation control, but not be used to purchase vast tracts of mitigation lands or impose additional restrictions on public or private land.
    - Oppose the acquisition of habitat at a multiplied (e.g. 3:1) mitigation ratio for desert renewable energy projects because the scale of the proposed projects would render vast portions of private land unavailable for future use and could severely limit the ability of future development to adequately mitigate its impacts.
    - Rationale to support these positions includes:
        1. Federal ownership (84%) of land within the County significantly reduces tax revenue needed to serve these public lands.

ATTACHMENT 1

2. The County general fund already subsidizes fire service in the desert and maintains roads on BLM lands – further development of federal properties exacerbates an existing problem.
3. Current proposed renewable energy projects could require 1 million acres for project sites and another 3 million acres or more for mitigation, effectively using up all available mitigation land for future development.

- **Mechanism to Address Infrastructure Impacts**
  - No current mechanism exists to address the impacts these projects will have on public safety facilities and transportation infrastructure in San Bernardino County.
  - Large scale development in desert areas already underfunded for public safety facilities because of significant federal ownership, will only exacerbate impacts on the County's limited financial resources.
  - The County is open to a variety of approaches to address this issue, including targeted Development Impact Fees and/or direct mitigation in the form of developer constructed facilities, and is requesting that the state and federal energy and resource agencies (Fish and Game, Fish and Wildlife Service, CEC, BLM, etc) implement policies and procedures requiring developers of utility scale renewable energy projects to enter into mitigation agreements, pay appropriate fees, or develop other mechanism to mitigate impacts on local agencies.

- **Mechanism to Address Ongoing Operation/Maintenance Cost Impacts**
  - No current mechanism exists to address the impacts these projects will have on the ongoing costs of providing adequate public safety and transportation services, as well as the loss of recreation/tourism revenue.
  - The County is open to a variety of approaches to address this issue, including Possessory Interest Tax, Federal Lease Revenue Sharing, Community Facilities District Formation, and others. Preliminarily it appears that the ongoing operation and maintenance costs will be addressed by a Possessory Interest Tax, which should approximate property tax revenue given the expected long term of a federal land lease.

- **Historic and Recognized Land Use Impacts**
  - Support mitigation requirements, implemented through the National Environmental Policy Act (NEPA) process, that address the loss of historic and recognized land uses including dispersed recreation (OHV use, hunting), livestock grazing, and general public access to public lands.
  - Projects that remove large areas of relatively flat, accessible land historically providing for grazing allotments, access routes to back country, and open OHV play should be mitigated by the dedication of other areas of public land to such activities or possibly the acquisition of lands that can be so dedicated.

If the County is unsuccessful in negotiating appropriate impact mitigation for these energy projects, its recourse would be to legally challenge the environmental document for projects in category 2, and to legally challenge the CEC decision for projects in category 3.

Resolution on acquisition of private land for wildlife mitigation, associated with renewable energy development, with subsequent transfer to federal agencies

Issue: Wildlife agencies (State and Federal) have required the purchase of private land and its transfer to government agencies or non-governmental organizations (NGOs) as mitigation for projects that will occupy habitat or impact species with status under Federal or State law or regulation. Such acquisitions remove private land from tax rolls. When the land becomes Federal, many counties not only lose the property tax revenue, they fall outside the limit of Payment in Lieu of Taxes (PILT) accounting. Large renewable energy development projects have exacerbated the situation.

Proposed Policy: NACo requests the land and wildlife management agencies adopt procedures that provide for project mitigation other than through land transfer from private to public ownership. When such transfers are deemed the only appropriate mitigation, and offsetting PILT will not occur, then agencies must provide that project developer would continue to pay the property tax on the transferred land, or fees in lieu of taxes, in perpetuity, unless the land were restored to private ownership at a future date.

Background: The land and wildlife management agencies have sought land mitigation for impacted habitat for a variety of species, mostly those with listed status under the Endangered Species Act. Such mitigation often is required at a multiplied factor, e.g. 3:1, in which the project developer must "donate" a multiple of private land to the permitting agency or designated entity as mitigation. Such land is removed from the tax rolls.

Many projects are located in counties in which PILT payments are capped because of already large Federal estates; thus transfers may add to the Federal estate and counties do not receive additional PILT payment reflecting the expanded Federal estate. Further, since the acquiring agencies are usually BLM or the Forest Service, counties cannot receive PILT under Sections 6904 or 6905.

Most projects utilize significant parts of local government infrastructure, including the use of county roads for project development, operation and maintenance. In addition development may use other county services, including solid waste disposal, law enforcement, public health, and fire and emergency medical response during the life of the project.

Offsetting the loss of tax base must become an essential part of renewable project mitigation, even when mitigation land is transferred to a state agency or NGO. Mitigation should be accomplished by project developers depositing funds for use to provide other kinds of mitigation investment equivalent to the amount that might otherwise be invested in land acquisition.

Policy options: Expand current PILT requirement that only additions to the Federal estate by NPS or in National Forest wilderness can receive payment under Section 6904. If such change were made, remove the 5-year limit on such payments.

Fiscal Urban/Rural Impact: While development may provide some positives to local economies, local governments should not be left with losses and costs associated with the project. The policy will assure a steady revenue stream regardless of mitigation requirements as well as funding for county infrastructure and services.

Sponsor: Brad Mitzelfelt, Supervisor, San Bernardino County, California

ATTACHMENT 2

Resolution on mitigation for historic and recognized federal land multiple uses when renewable energy projects are developed on federal land

Issue: Renewable energy projects, particularly large scale solar development, remove large blocks of land from the federal estate from historic multiple use activities, including dispersed recreation, livestock grazing, and general public access. Mitigation is too often focused only on wildlife and cultural resources. Other multiple uses receive only passing mention in the environmental documentation, and are seldom offset, replaced or otherwise mitigated.

Recommended Policy: NACo requests the Bureau of Land Management and Forest Service adopt policies that provide real and substantial consideration of historic uses in the project plans and environmental documentation, and commit project developers to providing mitigation for their loss.

Background: As renewable energy development expands, the potential exclusion of historic permitted uses on Federal public lands becomes more apparent. Some projects may be benign, such as wind energy on ridge lines. Other developments such as solar on flat accessible land, remove huge areas which have historically been essential parts of grazing allotments, contained the access routes to back country, or provided areas that BLM designated as "open" for OHV recreation. Ancillary facilities and safety closures, however, for all projects, may remove areas and access from previous uses.

Some uses, such as grazing, can be mitigated through compensation or buy-out, though the effect will be a reduction from past use. There may be offsetting economic value from the energy project, but it is essential that benefits and losses both be weighed in the NEPA process and the process commit the developer to providing such mitigation.

Access through project areas cannot be addressed by the market. Development plans must provide alternate access routes. OHV open areas, if such has been legitimately provided in BLM or FS land use plans, should be similarly mitigated for, by designation of other appropriate areas or the acquisition of areas by the developer for such dedication and designation.

Failure to provide at least a degree of mitigation can result in sprawling of dispersed uses to areas of private land, encouraging trespass, and requiring engagement of law enforcement at high cost to both the land management agencies as well as local government.

NACo does not oppose development of renewable energy on public land, but wishes to assure that the NEPA process and plan of development explicitly address historic use and commit the developer to mitigation.

Policy options: None.

Fiscal Urban/Rural Impact: Renewable energy development may or may not have positive impacts on the land and the area. Projects normally result in total exclusion of the public, but their output will provide energy, employment, and increase renewable portfolios required by many states. Mitigation for impacts and use loss may add to project costs. Providing such mitigation may have an overall positive impact since the area may benefit from the new use plus retain of all or part of the current use. Providing such mitigation will also reduce the effect on local law enforcement to control trespass use that could occur if mitigation is not provided.

Sponsor: Brad Mitzelfelt, Supervisor, San Bernardino County, California

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MEMORANDUM

To: Gerry Newcombe, County Administrative Office, San Bernardino County
Chief Peter Brierty, San Bernardino County Fire Department

From: Stan Hoffman, President, Stanley R. Hoffman Associates, Inc.

Date: June 30, 2010

Subject: Estimated Allocation of Fire Facility Costs to Proposed Solar Energy Installations

Project #: 1210

Overview

This memorandum presents an allocation of capital costs (fire station and equipment) for proposed County fire department facilities among the 14 proposed solar farm projects in San Bernardino County. The primary purpose of this analysis from the development impact fee (DIF) perspective is to allocate capital costs from new fire stations to provide coverage for the potential fire protection-related and emergency medical services needs of the proposed solar projects. In doing so, the allocation methodology assigns a 'fair share' cost to the proposed solar projects by establishing the nexus between their impact on fire protection-related and emergency medical services and capital improvement costs to provide these services. We also show, for comparison purposes, an allocation of ongoing operations and maintenance costs to the solar projects from upgrades to existing stations and the proposed new fire stations.

The general locations of these proposed County fire facilities and proposed solar farms are shown in Figure 1. As shown in Table 1, the allocation of capital costs, based on a weighted matrix that evaluates emergency response risk, is very much dependent upon whether the solar facilities are photovoltaic or the larger solar thermal systems, which use chemical substances such as Therminol and gaseous hydrogen to transfer heat. The higher allocated capital costs rounded to the nearest thousands are for Abengoa ($860,000), Ivanpah ($526,000) and Solar One ($1,187,000). In comparison, the photovoltaic systems are allocated lower capital costs ranging from about $67,000 to about $202,000. A similar allocation was performed for distributing estimated operations and maintenance costs for proposed upgrades and proposed new stations. As shown in Table 2, allocations of the annual operations and maintenance costs range from about $62,000 to $187,000 for the photovoltaic systems and about $485,000 to $1,095,000 for the thermal systems.

Overview of Solar Energy Technology

Solar energy technologies can be summarized under two general categories: photovoltaic (PV) and thermal. Photovoltaic systems generate energy directly from the sun, while thermal systems harness the sun's energy to heat transfer mediums like water or Therminol to drive steam-turbine generating plants. In the solar thermal hydrogen systems, the sun's energy causes the expansion and contraction of hydrogen to drive the turbine. In the United States, the power industry has focused on solar thermal technologies mainly because it is perceived as more commercially viable than solar PV technologies. However, PV systems are becoming more competitive as technological advancements allow manufacturers to increase panel efficiency and reduce costs. Appendix A provides a more detailed description of the technologies underlying PV and thermal solar energy systems. The advantages and disadvantages of thermal systems relative to photovoltaic systems are summarized below:

Advantages

- Thermal systems produce more energy than PV systems. As shown in Table 3, in San Bernardino County the three thermal systems range from 250 to 850 megawatts, while the PV systems range from 1.3 to 104.0 megawatts.
- Solar thermal systems can work in the shade for brief amounts of time, since the heated fluids they depend on can stay hot enough to generate electricity for some time without the sun.

Disadvantages

- Thermal systems present a much higher fire risk than PV systems. As shown in Table 4, the San Bernardino County Fire Department and California Energy Commission staff jointly ranked the three thermal projects as very high priorities for emergency fire response, while the 11 PV projects were ranked as only low to moderate priorities.
- Unlike PV systems, thermal systems require on-site staff to perform operations and maintenance. Because individuals are required to work on-site, these systems require additional public services such as fire protection, rescue, hazardous materials spill response and emergency medical response.
- Thermal systems are larger and require more land than PV systems. As shown previously in Table 3, the three proposed thermal systems in San Bernardino County have disturbed acreages ranging from 1,765 acres to 8,230 acres, while the 11 proposed PV systems have disturbed acreages ranging from 12 acres to 922 acres.

San Bernardino County Proposed Solar Projects

As shown in Table 3, a total of 14 solar energy projects are proposed for San Bernardino County (two projects shown in Table 3 are wind energy projects). Of the 14 total solar projects, 11 are

based on PV technology and 3 are based on thermal technologies (1 each of water, Therminol and gaseous hydrogen). There is large disparity between the PV projects and the thermal projects in terms of size (disturbed acreage) and installed capacity (megawatts). As shown in Table 3, the 11 PV projects are smaller in acreage, with lower installed capacity compared to the 3 thermal projects. The PV projects range from Soltech Solar (12 acres, 1.3 megawatts) to Rabbit Springs Solar (922 acres, 104.0 megawatts), while the thermal projects range from Abengoa (1,765 acres, 250.0 megawatts) to Solar One (8,230 acres, 850.0 megawatts). As shown in Table 3, on a megawatts per 1,000 acres basis, the installed capacity of the PV projects range from Lucerne Valley Solar (87.2) to Axio Power Holdings, El Mirage (142.0), while the installed capacity of the thermal projects ranges from Solar One (103.3) to Abengoa (141.6).

The 14 proposed solar farm projects are located in the Desert region of San Bernardino County, which is comprised of three economic sub-areas (ESAs) – Morongo Basin, Outlying Desert, and Victor Valley-Barstow – as designated under the County General Plan. Shown in Table 5 are the concentrations of proposed solar projects by each of these geographic sub-areas. The Outlying Desert ESA, which contains one each of solar thermal-water and thermal-hydrogen projects and one PV project, has the largest aggregate installed capacity (1,255 megawatts) and disturbed acreage (11,910 acres). The Victor Valley-Barstow ESA has the most solar projects (eight PV and one thermal), totaling 583 megawatts and 4,496 disturbed acres. The Morongo Basin ESA contains two PV projects and no thermal projects, for a total of 65 megawatts and 673 disturbed acres. The estimated on-site employment for the thermal systems ranges from 80 employees for the Abengoa project to 164 employees for the Solar One project near Calico. The PV and wind projects are estimated to have insignificant full-time employment on-site.

Total Fire Facility Capital and Operations and Maintenance Costs

As shown in Table 6, the capital costs for both proposed ($12.5 million) and future fire stations ($14.1 million) total an estimated $26.6 million. Cost estimates for annual operations and maintenance costs are shown separately in Table 6. The capital cost estimates are for new fire facilities, and the operations and maintenance costs are for upgrades to existing stations as well as new facilities. In many cases, the existing stations in more remote areas are operated on a paid-call basis and do not have a full time fire personnel staff.

Methodology

The total megawattage output estimated for each solar farm facility, as shown in Table 1, is grouped into one of four megawattage categories: 1) less than 50 megawatts; 2) 50 to less than 100 megawatts; 3) 100 megawatts to less than 500 megawatts; and 4) 500 megawatts or greater. Power plants greater than 50 megawatts are under the authority of the CEC. For power plants between 50 and 100 megawatts, the CEC often grants a Small Power Plant Exemption (SPPE) which then allows for local enforcement; anything greater than 100 megawatts requires a full Application for Certification (AFC), an environmental review and continued enforcement by the CEC. A power plant of 500 megawatts or larger is considered a medium to large power plant.

These megawattage categories are then weighted according to an "emergency response matrix," as shown previously in Table 4. The emergency response rating for each solar farm project was developed by the San Bernardino County Fire Department in conjunction with staff from the California Energy Commission. Solar projects were rated based on five criteria to determine the urgency of the need for additional resources and mitigation, with a higher rating indicating greater emergency response urgency. The five criteria were: 1) Inspections; 2) Fire/Explosion risk; 3) HazMat risk; 4) Rescue First Alarm; and 5) EMS response of certified medic. Each factor was then weighted according to its estimated proportionate contribution to the composite ranking. As shown in Table 4, the weighting factors range from a low of 1.0 for several of the photovoltaic systems to a high to 4.4 for the Calico system.

Establishing Development Impact Fee Nexus

Following the 'nexus' criteria to allocate the fair share costs of potential capital improvements to new development, we first establish the impact of projected background demographic growth on demand for new fire services. This impact is established by applying a geographically appropriate per capita level of fire service to the projected population growth within the three ESAs where the solar projects are located. As shown in Table 7, based on information obtained from the San Bernardino County Fire Department, the population served per station facility varies greatly among the five County Fire Divisions, ranging from around 14,000 persons per station in the more urbanized areas of the Valley Division and the Victorville Division to only about 2,900 persons per station in the South Desert Division. An average level of service of about 5,400 persons per station for the North and South Divisions taken together was considered

appropriate to apply to the background demographic growth projected to occur within the three Desert ESAs (Morongo Basin, Outlying Desert and Victor Valley-Barstow) over the 2008 to 2020 time period, where the solar projects are located.

As shown in Table 8, based on information obtained from the County Land Use Services Department, a total population growth of 9,457 persons is projected for the Desert Planning Area under the current County General Plan. Further, this growth was allocated down to the three ESAs – Outlying Desert, Victorville/Barstow and the Morongo Basin, as show in Table 8. The estimated projected growth within these areas results in a total demand for 1.75 new stations, applying the level of service factor of 5,400 persons per station. This projected residential demand comprises a share of 58.4 percent of the total 3 new fire stations proposed by the County Fire Department to potentially provide coverage for the solar projects. Following this method, it is estimated that the remainder 41.6 percent of net new demand for fire services originates from all other non-residential uses, including commercial activities and traffic-related calls.

In order to get a finer breakdown of all other non-residential calls, and as a check for the percent share attributed to projected new residential calls, we examined the County Fire Department call volume data for 2009 by different call origin types (residential, traffic and commercial) distributed by Urban, Rural and Remote areas within the County, as shown in Table 9. Given the location of the solar projects in the desert areas of the County, a weighted percent call distribution for the combined Rural and Remote areas was considered reflective of the possible call volume pattern serviced by the 3 proposed new stations. The weighted average call volume for 2009 in the Rural and Remote areas indicates 59.7 percent of all calls had residential origin, which is similar to the population growth projection-based estimate of 58.4 percent. Further, the call volume data indicates that of the remainder 40.3 percent of service calls, 28.8 percent were commercial-related and 11.4 percent were traffic-related, as shown in Table 9. Following from this, we assume a rounded factor of 29.0 percent for commercial-related calls as representative of the fair-share allocation of costs from new capital improvements to the solar projects, as shown in Table 9. Applying the 29.0 percent factor to the total capital improvement costs of $12.54 million from proposed new fire stations, results in a fair-share allocation of $3.64 million to the proposed solar projects. The above fair-share cost was then allocated to each solar project based on its composite weighting, as described next.

Allocation of Fair-share Capital Costs to Individual Solar Projects

As previously shown on Table 1, each project's emergency response rating (from Table 4) was then multiplied by its megawattage category to determine its weighted megawattage ranking. Each project's megawattage was obtained from the project's application as is shown on Table 3. Then, each project's individual share of total weighted megawattage ranking – expressed as a percentage – was then used to distribute fire facility capital cost responsibilities. As shown on Table 1, the total capital cost for proposed stations of $12.54 million was multiplied by the fair-share factor of 29.0 percent to estimate the proposed solar farms' aggregate capital cost responsibility of about $3.64 million.

This methodology spreads the costs proportionally among the stations in the Desert region of San Bernardino County even though some of the facilities are in more urbanized areas versus more remote areas within the Desert region. While one station may be the first responder to an emergency, the other stations will provide backup support depending upon the location and severity of the emergency.

Conclusions

Approximately $3.64 million of the $12.54 million required for proposed fire facility capital costs has been allocated to solar farms in the Desert region of San Bernardino County, as shown previously in Table 1. The distribution of capital costs to solar thermal projects ranges from about $526,000 to $1,187,000, while the distribution of capital costs to PV projects ranges from about $67,000 to $202,000 per project. This difference is the result of solar thermal projects having a significantly greater emergency response rating and size (as measured by megawattage), and therefore greater potential impacts on County fire services capabilities. While relatively little commercial growth is projected in the Outlying Desert area of San Bernardino County, if significant commercial growth does occur or other solar farms are proposed, then the County may consider a reallocation of the fire facility costs and reimbursement agreements in the future for projects that have already contributed toward off-setting those fire facility costs.

As discussed earlier, a similar allocation was performed for distributing estimated operations and maintenance costs for proposed upgrades and proposed new stations. As shown previously in

Table 2, allocations of the annual operations and maintenance costs range from about $62,000 to $187,000 for the photovoltaic systems and about $485,000 to $1,095,000 for the thermal systems.

A taxable Possessory Interest may exist whenever there is a private, beneficial use of publicly-owned, non-taxable real property. Such interests are typically found where private individuals, companies or corporations lease, rent or use federal, state or local government owned facilities and/or land for their own beneficial use. For those solar farm projects that have long-term leases, whatever future possessory interest property tax is collected by the County will be used to help off-set the annual fire facility operations and maintenance costs.

Figure 1
Proposed Solar Farms and San Bernardino County Fire Facilities

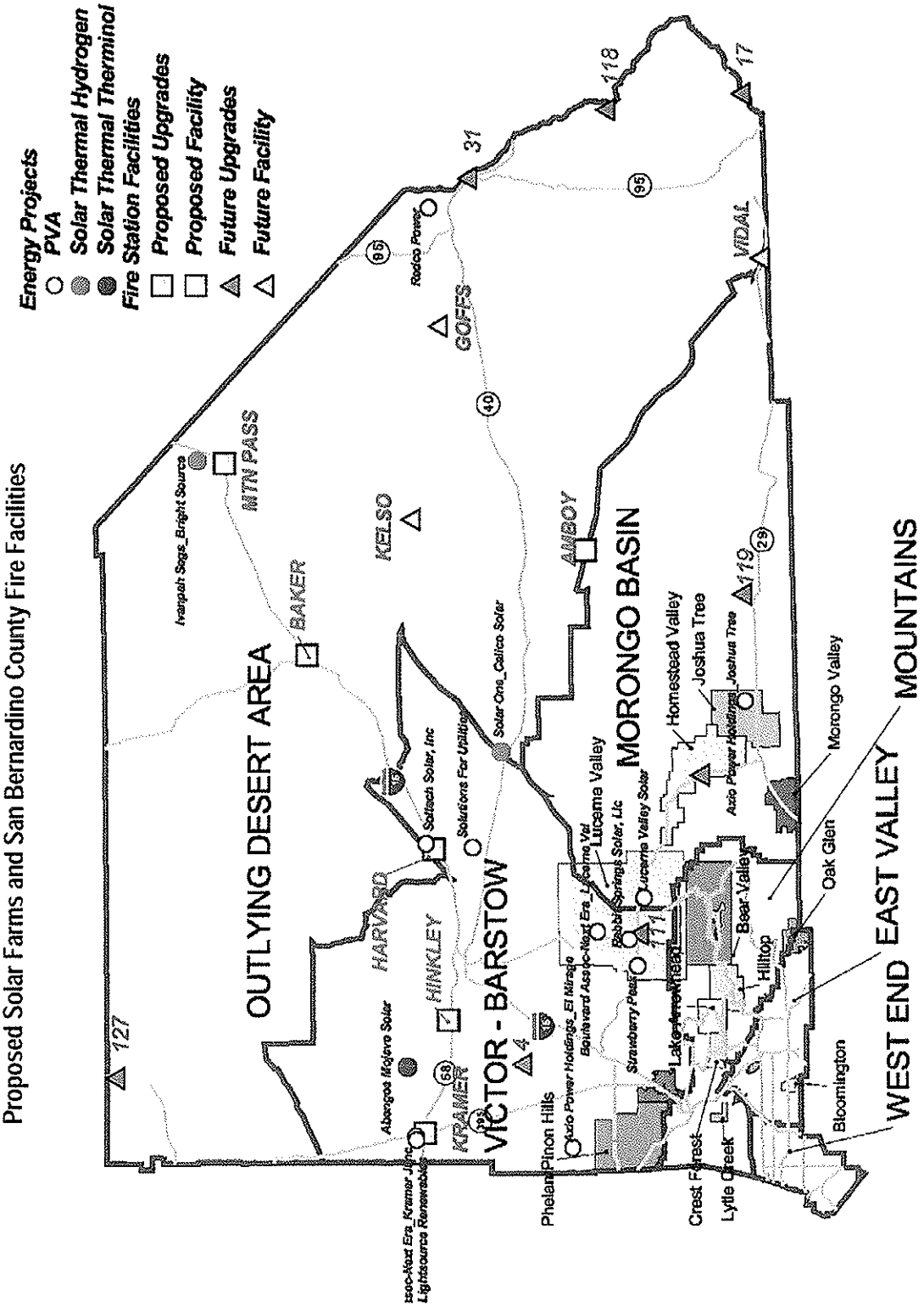


Table 1
Estimated Distribution of Capital Cost Responsibilities by Solar Farm Project

Serial Number	Project Name	Technology	Emergency Response Matrix Rating[1] (A)	Megawatts by Project[2]	Size Impact Rating[3] (B)	Weighted Composite Response and Size Rating[4] (A X B)	Percentage Distribution of Weighted Rating[5]	Allocation of Capital Costs by Project[6]	Rounded Allocation of Capital Costs by Project[7]
1	Soltech Solar, Inc	PVA	1.0	1.3	1.0	1.0	1.86%	$67,466	$67,000
2	Solutions For Utilities	PVA	1.0	3.0	1.0	1.0	1.86%	$67,466	$67,000
3	Strawberry Peak	PVA	1.0	15.0	1.0	1.0	1.86%	$67,466	$67,000
4	Boulevard Assoc-Next Era, Kramer Junction	PVA	1.0	20.0	1.0	1.0	1.86%	$67,466	$67,000
5	Lightsource Renewables	PVA	1.0	40.0	1.0	1.0	1.86%	$67,466	$67,000
6	Boulevard Assoc-Next Era, Lucerne Valley	PVA	1.0	60.0	2.0	2.0	3.71%	$134,933	$135,000
7	Rabbit Springs Solar, Llc	PVA	1.0	104.0	3.0	3.0	5.57%	$202,399	$202,000
8	Redco Power	PVA	1.0	5.0	1.0	1.0	1.86%	$67,466	$67,000
9	Axio Power Holdings, Joshua Tree	PVA	1.0	20.0	1.0	1.0	1.86%	$67,466	$67,000
10	Axio Power Holdings, El Mirage	PVA	1.0	90.0	2.0	2.0	3.71%	$134,933	$135,000
11	Lucerne Valley Solar	PVA	1.8	45.0	1.0	1.8	3.25%	$118,066	$118,000
12	Abengoa Mojave Solar	Solar Thermal Therminol	4.3	250.0	3.0	12.8	23.65%	$860,197	$860,000
13	Ivanpah SEGS, Bright Source	Solar Thermal Steam	2.6	400.0	3.0	7.8	14.47%	$526,238	$526,000
14	Solar One, Calico Solar	Solar Thermal Hydrogen	4.4	850.0	4.0	17.6	32.65%	$1,187,410	$1,187,000
			23.0	1,903.3		53.9	100.00%	$3,636,442	$3,632,000

TOTAL CAPITAL COST[8]	$12,539,455
COST SHARE OF SOLAR PROJECTS[9]	$3,636,442
ALLOCATION FACTOR[10]	29.00%

MEGAWATTAGE IMPACT CATEGORIES[11]

Megawatts	Rating
<50	1
50 to <100	2
100 to 500	3
Above 500	4

1. The emergency response weightings have been developed by the San Bernardino County Fire Department based on factors shown in Table 4.
2. This is the estimated total megawattage by project as provided by the project proponents applications.
3. See note 11.
4. Estimated weighted rating based on megawattage size category when multiplied by the emergency response matrix rating.
5. Percentage distribution of weighted rating by project; this weighting will be used to distribute capital cost responsibilities by project.
6. The allocation of capital cost responsibility to project is based on distributing the allocated fire facility cost share based on the weighted rating percentages.
7. Cost allocations rounded to the nearest thousands.
8. Estimated total new and upgraded fire facility capital costs.
9. Estimated fire facility capital cost share of proposed solar farm projects based on allocation factor as provided by San Bernardino County Fire Department.
10. Allocation factor based on call volumes associated with commercial development, as reported by the San Bernardino Fire Department and shown in Table 9.
11. Projects were also rated for demand for County fire services due to absolute size using project megawattage output to group the projects into four impact categories.

Source: Stanley R. Hoffman Associates, Inc.

Table 2
Distribution of Annual Operations and Maintenance Costs

Serial Number	Project Name	Technology	Emergency Response Matrix Rating[1] (A)	Megawatts by Project[2]	Size Impact Rating[3] (B)	Weighted Composite Response and Size Rating[4] (A X B)	Percentage Distribution of Weighted Rating[5]	Allocation of Capital Costs by Project[6]	Rounded Allocation of Capital Costs by Project[7]
1	Soltech Solar, Inc	PVA	1.0	1.3	1.0	1.0	1.86%	$62,190	$62,000
2	Solutions For Utilities	PVA	1.0	3.0	1.0	1.0	1.86%	$62,190	$62,000
3	Strawberry Peak	PVA	1.0	15.0	1.0	1.0	1.86%	$62,190	$62,000
4	Boulevard Assoc-Next Era, Kramer Junction	PVA	1.0	20.0	1.0	1.0	1.86%	$62,190	$62,000
5	Lightsource Renewables	PVA	1.0	40.0	1.0	1.0	1.86%	$62,190	$62,000
6	Boulevard Assoc-Next Era, Lucerne Valley	PVA	1.0	60.0	2.0	2.0	3.71%	$124,381	$124,000
7	Rabbit Springs Solar, Llc	PVA	1.0	104.0	3.0	3.0	5.57%	$186,571	$187,000
8	Redco Power	PVA	1.0	5.0	1.0	1.0	1.86%	$62,190	$62,000
9	Axio Power Holdings, Joshua Tree	PVA	1.0	20.0	1.0	1.0	1.86%	$62,190	$62,000
10	Axio Power Holdings, El Mirage	PVA	1.0	90.0	2.0	2.0	3.71%	$124,381	$124,000
11	Lucerne Valley Solar	PVA	1.8	45.0	1.0	1.8	3.25%	$108,833	$109,000
12	Abengoa Mojave Solar	Solar Thermal Therminol	4.3	250.0	3.0	12.8	23.65%	$792,926	$793,000
13	Ivanpah SEGS, Bright Source	Solar Thermal Steam	2.6	400.0	3.0	7.8	14.47%	$485,084	$485,000
14	Solar One, Calico Solar	Solar Thermal Hydrogen	4.4	850.0	4.0	17.6	32.65%	$1,094,549	$1,095,000
			23.0	1,903.3		53.9	100.00%	$3,352,058	$3,351,000

OPERATIONS AND MAINTENANCE COST[8]	$11,558,820
COST SHARE OF SOLAR PROJECTS[9]	$3,352,058
ALLOCATION FACTOR [10]	29.00%

MEGAWATTAGE IMPACT CATEGORIES [11]

Megawatts	Rating
<50	1
50 to <100	2
100 to 500	3
Above 500	4

1. The emergency response weightings have been developed by the San Bernardino County Fire Department based on factors shown in Table 4.
2. This is the estimated total megawattage by project as provided by the project proponents applications.
3. See note 11.
4. Estimated weighted megawattage when multiplied by the emergency response matrix rating.
5. Percentage distribution of weighted megawattage by project; this weighting will be used to distribute operations and maintenance cost responsibilities by project.
6. The allocation of operations and maintenance cost responsibility to project is based on distributing the allocated fire facility cost share based on the weighted megawattage percentages.
7. Cost allocations rounded to the nearest thousands.
8. Estimated operations and maintenance costs from proposed upgrades and new stations.
9. Estimated operations and maintenance cost share of proposed solar farm projects based on allocation factor as provided by San Bernardino County Fire Department.
10. Allocation factor based on call volumes associated with commercial development, as reported by the San Bernardino Fire Department and shown in Table 9.
11. Projects were also rated for demand for County fire services due to absolute size using project megawattage output to group the projects into four impact categories.

Source: Stanley R. Hoffman Associates, Inc.

Table 3
Physical Characteristics of Proposed Solar Farm Projects

No.	PROJECT NAME/ NUMBER	PROJECT NUMBER	TECHNOLOGY	JURISDICTION	EMPLOYMENT[1]	MEGAWATTS	ACREAGE	MEGAWATTS PER 1,000 ACRES
1	GRANITE WIND	P200700743	Wind	Under County Jurisdiction, Joint Review & Permitting with BLM	n/a	64.4	2,640	24.4
2	DAGGETT RIDGE WIND FARM, LLC	P200800589	Wind	Under County Jurisdiction, Joint Review & Permitting with BLM	n/a	82.5	1,957	42.2
3	SOLTECH SOLAR, INC	P20100018	PVA	County	n/a	1.3	12	112.3
4	SOLUTIONS FOR UTILITIES	P200900339/CUP/CF	PVA	County	n/a	3.0	22	136.4
5	STRAWBERRY PEAK	P200900655/CF	PVA	County	n/a	15.0	160	93.8
6	BOULEVARD ASSOC - NEXT ERA/ KRAMER JUNCTION		PVA	County	n/a	20.0	191	104.7
7	LIGHTSOURCE RENEWABLES	P200900470	PVA	County	n/a	40.0	350	114.3
8	BOULEVARD ASSOC - NEXT ERA/ LUCERNE VALLEY	P200900663/CF	PVA	County	n/a	60.0	440	136.4
9	RABBIT SPRINGS SOLAR, LLC	P200900580/CF	PVA	County	n/a	104.0	922	112.8
10	REDCO POWER	P200900558	PVA	Pre-application	n/a	5.0	40	125.0
11	AXIO POWER HOLDINGS - JOSHUA TREE	P200900666/PAC	PVA	Pre-application	n/a	20.0	157	127.4
12	AXIO POWER HOLDINGS - EL MIRAGE	P200900665/PAC	PVA	Pre-application	n/a	90.0	634	142.0
13	LUCERNE VALLEY SOLAR		PVA	BLM	n/a	45.0	516	87.2
14	ABENGOA MOJAVE SOLAR		Solar Thermal with Therminol Fluid	CEC	80	250.0	1,765	141.6
15	IVANPAH SEGS (BRIGHT SOURCE)		Solar Thermal with Steam	CEC & BLM	90	400.0	3,640	109.9
16	SOLAR ONE (CALICO SOLAR)		Hydrogen Stirling Engines	CEC & BLM	164	850.0	8,230	103.3
				TOTAL	334	2,050.2	21,676	94.6
				TOTAL (SOLAR ONLY)	334	1,903.3	17,079	111.4
				TOTAL (WIND ONLY)[1]	n/a	146.9	4,597	32.0

1. There is no significant full-time employment estimated for the photovoltaic and wind systems.

Source: Stanley R. Hoffman Associates, Inc.
San Bernardino County Land Use Services Department
San Bernardino County Fire Services Department

Table 4
Emergency Response Matrix Ratings by Solar Farm Project

Emergency Response Matrix																				
A. Response Criteria		points	weighting factor	Kramer	Harper	Lucerne	Abengoa	Ivanpah	Solar 1	SolarTech	Solun	Strawbry	Boule KJ	LightSrc	Boule LV	RBT Spgs	Red Co	Axio JT	Axio EM
1. Inspections			0.10																
	a. minimal need	1																	
	b. average need	3		3	3	3				1	1	1	1	1	1	1	1	1	1
	c. significant need	5					5	5	5										
			next -->	0.3	0.3	0.3	0.5	0.5	0.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
2. Fire																			
A. Quantity stored on-site			0.20																
	a. <1,000 gal	1				1		1		1	1	1	1	1	1	1	1	1	1
	b. >1000 and <100,000 gal	2																	
	c. >100,000 gal Thermiol or High Volume High Pressure Hydrogen	5		5	5		5		5										
			next -->	1.00	1.00	0.40	1.00	0.40	1.00	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
B. Fire/Explosion off-site consequences	On site and off site consequence		0.30																
	a. Limited to site	1				1		1		1	1	1	1	1	1	1	1	1	1
	b. Potential for smoke and/or fire and/or	2																	
	blast effects	3			3				3										
	c. Potential for major fire/blast structure damage	4																	
	and/or injuries/fatalities off-site and/or major hwy disruption/closure	5		5			5												
			next -->	1.50	0.90	0.30	1.50	0.30	0.90	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
3. HazMat																			
A. Proximity to or potential for effect on all human receptors			0.05																
	a. no sig quant of hazmats or no potential for off-site impacts within 1/2 mile	1				1		1		1	1	1	1	1	1	1	1	1	1
	b. <10 receptors within 1/2 mile	2																	
	c. >10 receptors within 1/2 mile	3			3														
	d. >50 within 1/2 mile	4					4												
	e. >100	5		5					5										
			next -->	0.25	0.15	0.05	0.20	0.05	0.25	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
B. Hazmat response time			0.05																
	a. <30 minutes	1						1		1	1	1	1	1	1	1	1	1	1
	b. 30 - 60 minutes	3		3	3	3	3												
	c. >60 minutes	5							5										
			next -->	0.15	0.15	0.15	0.15	0.05	0.25	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
4. Rescue First Alarm			0.15																
	a. < 30 minutes	1		1						1	1	1	1	1	1	1	1	1	1
	b. 30 - 60 minutes	3			3	3	3												
	c. >60 minutes	5						5	5										
			next -->	0.15	0.45	0.45	0.45	0.75	0.75	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
5. EMS Response of Certified Medic																			
EMS response time			0.15																
	a. No Staff on site	1								1	1	1	1	1	1	1	1	1	1
	b. <15 minute response time	2				2													
	c. >15 <30 minute response time	3			3		3												
	d. >30 and < 60 minute response time	4		4															
	e. >60 minute response time	5						5	5										
			Net -->	0.60	0.45	0.30	0.45	0.75	0.75	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
	Sum weighting factors		1.00																
TOTAL SCORE			==sum==>	3.95	3.4	1.75	4.25	2.60	4.40	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
LOW Priority: additional resources and mitigation may be needed.		< or =1																	
MEDIUM Priority: additional resources and mitigation needed.		1.0 - 2.5																	
HIGH Priority: very significant need for additional resources and mitigation.		2.5 - 3.0																	
VERY HIGH Priority: urgent need for additional resources and mitigation.		>3.0																	

SOURCE: San Bernardino County Fire Department
California Energy Commission Staff.

Table 5
Summary of Solar Farm Project Characteristics by Sub-Area

	Morongo Basin	Outlying Desert	Victor Valley-Barstow	TOTAL
Proposed Energy Projects				
A. Number				
Photovoltaic	2	1	8	11
Solar Thermal - Steam	0	1	0	1
Solar Thermal - Hydrogen	0	1	0	1
Solar Thermal - Therminol	0	0	1	1
Total	2	3	9	14
B. Megawatts				
Photovoltaic	65	5	333	403
Solar Thermal - Steam	0	400	0	400
Solar Thermal - Hydrogen	0	850	0	850
Solar Thermal - Therminol	0	0	250	250
Total	65	1,255	583	1,903
C. Disturbed Acreage				
Photovoltaic	673	40	2,731	3,444
Solar Thermal - Steam	0	3,640	0	3,640
Solar Thermal - Hydrogen	0	8,230	0	8,230
Solar Thermal - Therminol	0	0	1,765	1,765
Total	673	11,910	4,496	17,079
B. Megawatts per 1000 Acres				
Photovoltaic	97	125	122	117
Solar Thermal - Steam	n/a	110	n/a	110
Solar Thermal - Hydrogen	n/a	103	n/a	103
Solar Thermal - Therminol	n/a	n/a	142	142
All Average	97	105	130	111

Source: Stanley R. Hoffman Associates, Inc.
San Bernardino County Fire Department
San Bernardino County Land Use Services Department.

Table 6
Estimated Capital Costs and Annual Operations and Maintenance Costs by Facility

STATION_NO	ECNSUBAREA	TYPE OF IMPROVEMENT	CAPITAL COSTS	ANNUAL OPERATIONS AND MAINTENANCE COSTS
PROPOSED STATIONS				
125 - HINKLEY STATION	VICTOR - BARSTOW	Proposed Upgrades	$0	$1,875,094
46 - HARVARD STATION	VICTOR - BARSTOW	Proposed Upgrades	$0	$1,875,094
53 - BAKER CSD STATION	OUTLYING DESERT AREA	Proposed Upgrades	$0	$1,875,094
MTN PASS	OUTLYING DESERT AREA	Proposed Facility	$4,688,636	$1,977,846
AMBOY	OUTLYING DESERT AREA	Proposed Facility	$3,162,183	$1,977,846
KRAMER	VICTOR - BARSTOW	Proposed Facility	$4,688,636	$1,977,846
			$12,539,455	$11,558,820
FUTURE STATIONS				
4 - SILVER LAKES / HELENDALE STATION	VICTOR - BARSTOW	Future Upgrades	0	$1,875,094
17 - BIG RIVER STATION	OUTLYING DESERT AREA	Future Upgrades	0	$1,875,094
31 - NEEDLES CITY STATION	OUTLYING DESERT AREA	Future Upgrades	0	$1,875,094
119 - WEST WONDER VALLEY STATION	MORONGO BASIN	Future Upgrades	0	$1,875,094
127 - NORTH TRONA STATION	OUTLYING DESERT AREA	Future Upgrades	0	$1,875,094
118 - HAVASU LANDING STATION	OUTLYING DESERT AREA	Future Upgrades	0	$1,875,094
111 - LUCERNE	VICTOR - BARSTOW	Future Upgrades	0	$1,875,094
19 - LANDERS	MORONGO BASIN	Future Upgrades	0	$1,875,094
GOFFS	OUTLYING DESERT AREA	Future Facility	$4,688,636	$1,977,846
VIDAL	OUTLYING DESERT AREA	Future Facility	$4,688,636	$1,977,846
KELSO	OUTLYING DESERT AREA	Future Facility	$4,688,636	$1,977,846
			$14,065,908	$20,934,290
		TOTAL	$26,605,363	$32,493,110

Source: Stanley R. Hoffman Associates, Inc.
San Bernardino County Fire Department

Table 7
County Fire Services Level of Service [1]: 2010
San Bernardino County Fire Department

	Mountain Division	North Desert Division	Victorville Division	South Desert Division	Valley Division	County Total	North and South Desert Divisions
Stations	8	20	8	17	15	68	37
Population Served	70,000	150,000	117,000	49,648	210,800	597,448	199,648
Square Miles	616	10,884	74	7,968	585	20,127	18,852
Population per Station	8,750	7,500	14,625	2,920	14,053	8,786	5,396
Sq Miles Served per Station	77	544	9	469	39	296	510

1. All information obtained from the San Bernardino County Fire Department.

Source: Stanley R. Hoffman Associates, Inc.
San Bernardino County Fire Department.

Table 8
Estimated Impact of Population Growth on Demand for Fire Services

	Outlying Desert	Victor-Valley Barstow	Morongo Basin	Desert Total
ESTIMATED 2008 to 2020 GROWTH [1]				
Population	202	7,760	1,495	9,457
Households	47	1,798	346	2,191
Employment	141	5,429	1,046	6,616
COST ALLOCATION TO POPULATION GROWTH				
Estimated Population Served per Station [2]	5,396	5,396	5,396	5,396
Projected Demand for Stations from Growth	0.04	1.44	0.28	1.75
Proposed New Stations [3]	2.00	1.00	0.00	3.00
Share of New Growth on Proposed Facilities				58.4%
Proposed New Station Facility Costs [3]	$7,850,819	$4,688,636	$0	$12,539,455
Cost Allocation to Population Growth				$7,325,673
Balance Costs to Proposed Projects				$5,213,782

1. Based on information provided by the San Bernardino County Land Use Services Department (LUSD) on projected General Plan growth by the three County General Plan Planning Areas -- Valley, Mountain and Desert. The growth projected for the Desert Planning Area was then allocated to the three Desert sub-regions -- Outlying Desert, Victor Valley/Barstow, and the Morongo Basin, based on historic housing permit trends.

2. The population served per station factor was developed from data on current level of services obtained from the County Fire Department for the North and South Desert Divisions.

3. Proposed new stations and their associated capital costs are shown in Table 4.

Source: Stanley R. Hoffman Associates, Inc.
San Bernardino County Fire Department
San Bernardino County Land Use Services Department

Table 9
Type of Service Calls by Geography: 2009
San Bernardino County

	Urban	Rural	Remote	Total	Rural and Remote	
Fire						
Residential	184	79	23	286	102	
Traffic	86	28	53	167	81	
Commercial	149	73	33	255	106	
Subtotal	419	180	109	708	289	
Medical/Other						
Residential	10,258	4,611	373	15,242	4,984	
Traffic	1,326	548	345	2,219	893	
Commercial	4,866	1,862	489	7,217	2,351	
Subtotal	16,450	7,021	1,207	24,678	8,228	
Total Calls	**16,869**	**7,201**	**1,316**	**25,386**	**8,517**	
Total Calls						
Residential	10,442	4,690	396	15,528	5,086	
Traffic	1,412	576	398	2,386	974	
Commercial	5,015	1,935	522	7,472	2,457	
	16,869	**7,201**	**1,316**	**25,386**	**8,517**	
Percent Distribution						Rounded
Residential	61.9%	65.1%	30.1%	61.2%	59.7%	60.0%
Traffic	8.4%	8.0%	30.2%	9.4%	11.4%	11.0%
Commercial	29.7%	26.9%	39.7%	29.4%	28.8%	29.0%
	100.0%	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

Source: Stanley R. Hoffman Associates, Inc.
San Bernardino County Fire Department

APPENDIX A
OVERVIEW OF SOLAR ENERGY TECHNOLOGIES[1]

Photovoltaic (PV) Systems

Photovoltaic systems produce clean, reliable energy through the conversion of sunlight directly into electricity via a process called the photovoltaic effect. PV systems are comprised of individual PV cells (also known as solar cells) made from semiconductor materials which are connected to form PV modules. PV modules generate direct current (DC) electricity, which is then passed through an inverter and converted into alternating current (AC) electricity. This energy can be used in a wide variety of residential and commercial applications, including utility power, lighting, communications, refrigeration, water purification, and crop irrigation.

Advantages of PV Systems

- PV systems require considerably less fire protection than thermal systems. As shown in Table 1, the 11 proposed PV projects in San Bernardino County were judged as a low to medium priority for emergency fire response, while the three thermal projects were judged as a very high priority for emergency fire response.
- Once built, PV systems have a much lower demand for on-site staff to perform operations and maintenance. This means fewer people at PV facilities, which lowers the demand for public services such as fire protection and emergency medical response.
- Unlike thermal systems, PV systems do not require water. This is particularly advantageous in the desert regions where many solar farms are proposed to be located.

Disadvantages of PV Systems

- PV systems are expensive to build. As a result, PV projects tend to be smaller and generate less electricity than thermal projects. For example, in San Bernardino County the most productive proposed PV project has an installed capacity of 104 megawatts (Rabbit Springs Solar), while the three proposed thermal projects have capacities ranging from 250 to 850 megawatts (see Table 1).

---

1 Sources:
U.S. Energy Information Administration <http://www.eia.doe.gov>
Solar Energy International <http://www.solarenergy.org>
Solar Developments <http://www.solardev.com>
SolarPACES <http://www.solarpaces.org>
The Energy Blog < http://thefraserdomain.typepad.com/energy/2005/09/about_parabolic.html >
Jones, J. (2000). "Solar Trough Power Plants." National Renewable Energy Laboratory.
The Center For Land Use Interpretation <http://www.clui.org/>

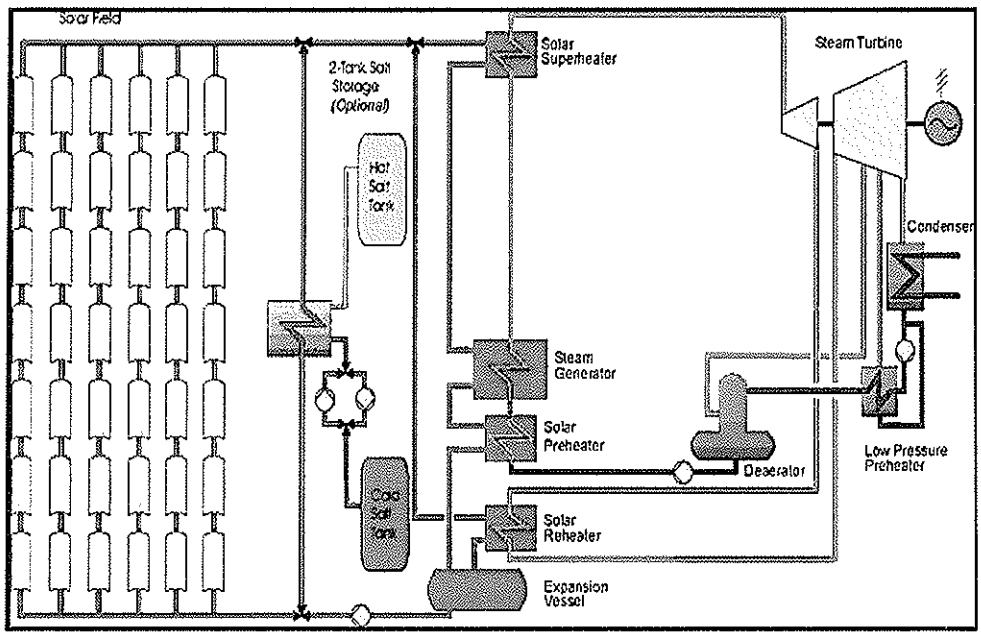
Thermal Systems

Thermal systems harness the sun's energy to heat transfer mediums, such as Therminol, to drive steam-turbine generating plants and produce energy. In the solar thermal hydrogen systems, the sun's energy causes the expansion and contraction of hydrogen to drive the turbine. The three main types of solar thermal systems are parabolic troughs, solar power towers, and dish systems. Each of these systems is represented in San Bernardino County. The Abengoa project uses parabolic trough technology; the Ivanpah project uses solar power tower technology; and the Solar One project uses dish systems technology.

Parabolic Trough

Illustrated in Figure A-1 is a parabolic trough solar thermal energy collector. A solar trough has a long, parabolic mirror that reflects sunlight onto a receiver tube located at the focus of the parabola. Heat transfer fluids such as Therminol run through the tube, absorb the concentrated sunlight, and then heat water to create steam. This steam is piped to an onsite turbine-generator to produce electricity, which is then transmitted over power lines. The solar trough can be rotated to track the sun as it moves throughout the day. On cloudy days, the plant has a supplementary natural gas boiler that can be used to heat the water, creating steam to generate electricity.

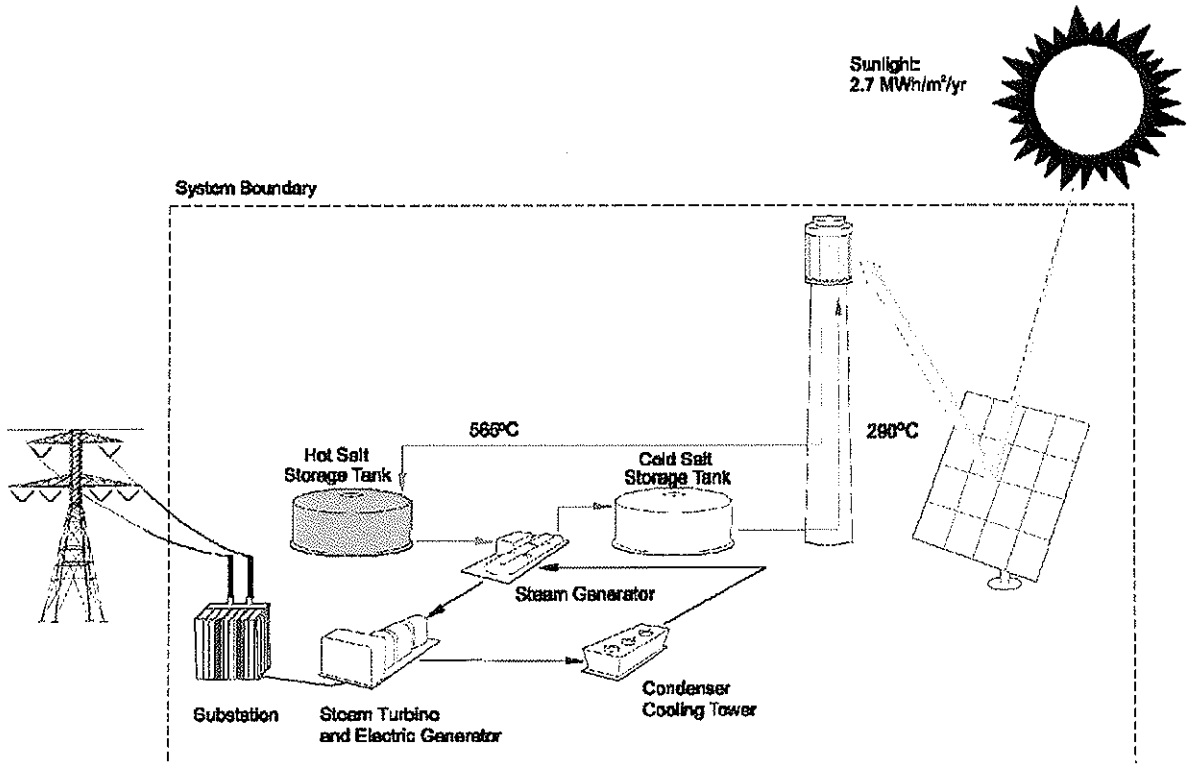
Figure A-1
Diagram of a Parabolic Trough



Solar Power Tower

As shown in Figure A-2, solar power towers are comprised of hundreds of large mirror assemblies, or heliostats, which track the sun and reflect solar energy onto a black tower-mounted boiler that absorbs the heat and converts water into high pressure steam. The high pressure steam is then carried to the ground where the steam is used to spin a series of turbines, much like a traditional power plant. Power towers must be large to be economical. This is a promising technology for large-scale, grid-connected power plants; however, it is in its early stages of development compared to parabolic trough technology.

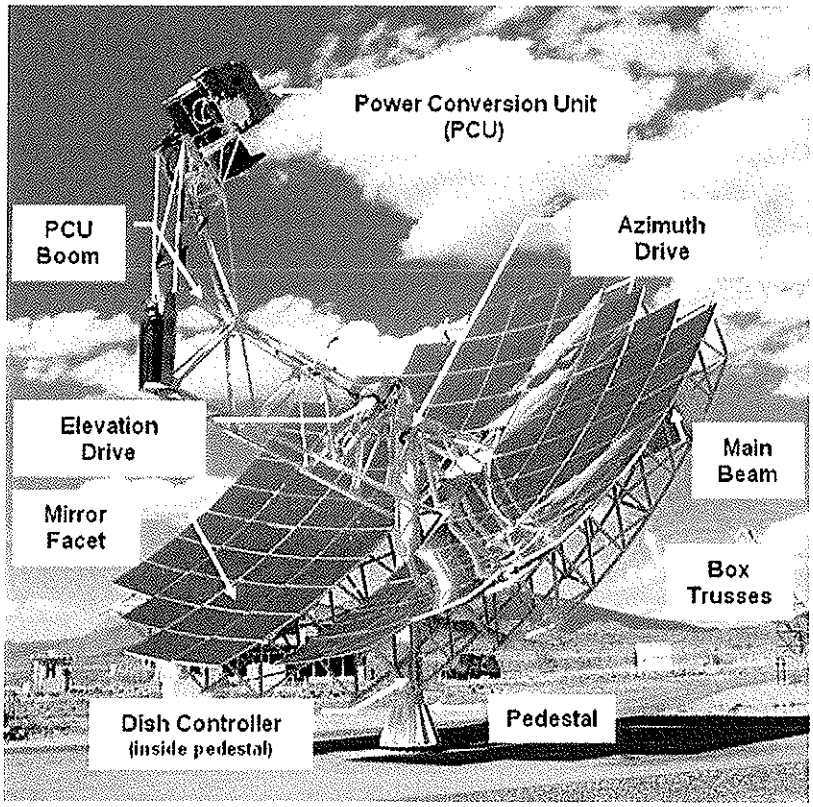
Figure A-2
Solar Power Tower System Schematic



Dish Systems

As shown in Figure A-3, a dish system consists of a large, parabolic dish (similar in shape to a satellite television dish) that reflects sunlight onto a receiver mounted at its center. The expansion and contraction of hydrogen is then used to power an engine. Typically, the receiver is mounted with a Stirling engine, although other types of engines are occasionally used. The engine is coupled with an electric generator that converts mechanical power into electricity. Dish systems can achieve high concentrations of light which result in higher temperatures and a more efficient conversion of solar energy to electricity.

Figure A-3: Dish System



Advantages of Thermal Systems

- Thermal systems produce more energy than PV systems. As shown previously in Table 1, in San Bernardino County the three thermal systems range from 250 to 850 megawatts, while the PV systems range from 1.3 to 104 megawatts.
- Solar thermal systems can work in the shade for brief amounts of time, since the heated fluids they depend on can stay hot enough to generate electricity for some time without the sun.

Disadvantages of Thermal Systems

- Thermal systems present a much higher fire risk than PV systems. As shown previously in Table 1, the San Bernardino County Fire Department and California Energy Commission jointly ranked the three thermal projects as very high priorities for emergency fire response, while the 11 PV projects were ranked as only low to moderate priorities.
- Unlike PV systems, thermal systems require on-site staff to perform operations and maintenance. Because individuals are required to work on-site, these systems require additional public services such as fire protection and emergency medical response.
- Thermal systems are larger and require more land than PV systems. As shown previously in Table 1, the three proposed thermal systems in San Bernardino County have disturbed acreages ranging from 1,765 acres to 8,230 acres, while the 11 proposed PV systems have disturbed acreages ranging from 12 acres to 922 acres.

QUALIFICATIONS and EXPERIENCE

Stanley R. Hoffman Associates is an urban economics and financial consulting firm established in 1981 and incorporated in 1984 providing economic and real estate market research, economic development strategies, as well as fiscal and financial analysis for public agencies and private firms.

Services are designed to meet a variety of client needs, ranging from overall market assessments and general and specific plans to the details of site-specific development analysis seeking to provide innovative solutions for the client's specific requirements.

SERVICES PROVIDED

Services are provided individually and in cooperation with project teams in a variety of planning situations including: preparation of specific plans, redevelopment plans, general plans and amendments, annexation and incorporation studies, development agreements, impact fee analyses and environmental impact reports. There are two offices in California: Los Angeles and Alameda.

Fiscal and Financial Studies. Information is provided on cost and benefit consequences of land use and infrastructure changes to cities and counties. Means are determined for funding public infrastructure improvements required for development. Areas of concentration include:

Fiscal Impact Analysis
Development Impact Fee Studies
Capital Facility Financing Plans

Urban Economic Analysis. Consulting services are provided in the formulation of economic development policies and strategies. Specific areas of emphasis include:

General Plan Economic Policies and Programs
Economic Development Strategies
Downtown Revitalization Studies

Real Estate Market Research. Decision-relevant information on development opportunities is provided for overall market evaluations and site-specific assessments. Techniques include:

Land Use Market Absorption
Financial Pro Formas
Market Feasibility Assessments

Annexations. Fiscal impact and plan of services studies are prepared for proposed jurisdictional boundary changes including:

Annexations
Sphere of Influence Studies
Growth Management Phasing Plans

Stanley R. Hoffman, FAICP

Principal

stan@stanleyrhoffman.com

Education and Affiliations

Master of Arts, Urban Planning, UCLA, 1972
Master of Science, Electrical Engineering, University of Michigan 1967
Bachelor of Science, Engineering, UCLA 1966

Professional Affiliations

2009 FAICP Selection Committee for 2010 APA California Chapter

2009 Planner Emeritus Network Award of Honor, subsidiary of APA California Chapter

2009 Member on Award Jury for Annual SCAG Blueprint Awards

APA Awards Jury, California Chapter APA

2005 Distinguished Service Award Professional, California Chapter APA

2005 Distinguished Service Award Professional, Los Angeles Section APA

Fellow, American Institute of Certified Planners. (FAICP)

Member and Past President, California Planning Foundation, (CPF)

Member and Past President, California Planning Roundtable, (CPR)

Member, American Planning Association (APA), Urban Land Institute, (ULI)

Member, Alumni Council, UCLA Department of Urban Planning

Teaching / Speaking Assignmentsr

Instructor, Urban Public Finance Graduate Course, UCLA School of Public Policy and Social Research

Conference Chair, UCLA Urban Technology Symposium on Climate Action Planning

Speaker, many professional planner panels, conferences and seminars

Stanley R. Hoffman has over thirty-five years experience in planning and urban economics. His fields of interest include economic and demographic analysis, land use projections, fiscal and financial studies, annexations, real estate market research and computer-based financial modeling. He has managed major programs in both the public and private sectors, involving numerous presentations before political and academic bodies and professional audiences.

Since establishing Stanley R. Hoffman Associates in 1981, Mr. Hoffman has specialized in fiscal and economic impact studies and market feasibility studies for residential, office and major retail shopping centers. These studies have been prepared for cities, counties, redevelopment agencies, other public agencies and developers. His firm's work has also focused on large-scale mixed use land developments in many jurisdictions throughout California.

Mr. Hoffman has extensive experience in preparing fiscal impact studies for general and specific plans and annexations for communities throughout Southern California. He has also worked with Community Service Districts related to adequate funding of an urban level of public services and sphere of influence issues.

He has been a member of several planning volunteer organizations as the California Planning Roundtable since 1981 as well as a past President and Treasurer of the California Planning Foundation.

REPRESENTATIVE PROJECT EXPERIENCE

County of San Bernardino Development Impact Fee Study, 2009

For the County of San Bernardino, we have provided a development impact analysis for the updated General Plan. We determined the areas within City spheres of influence and other unincorporated areas to establish which areas have existing fees versus those that have to be calculated. We identified the range of infrastructure that would require fees and provided an approach to cover potential public service deficits. We estimated costs for priority infrastructure categories and established the impact fee spread methodology. We also assessed whether the current fees applied to the projected development.

San Bernardino County General Plan Update, 2008

On a general plan team with URS Corporation, we provided economic and public finance services that included socio-economic trends and forecasts and fiscal impact considerations. We also provided assistance in preparing an Economic Development Element. This helped guide the planning process in the direction of implementation.

Solar Farm DIF Needs Assessment Analysis, County of San Bernardino, 2010

We are currently providing an assessment of development impact fee conditions for proposed solar farm installations. We will identify the areas where solar farms are being proposed along with their acreage, square footage, construction value and employment; also, general information about their operations should be provided. Within the service or planning areas, we will assemble the base demographic, employment and assessed valuation information under the County's General Plan. We will also estimate the future capital cost requirements and obtain statistics, to show the proportion of public safety calls for residential versus non-residential uses.

Fiscal Studies within San Bernardino, 1999-2009

We have prepared several fiscal studies for various cities and developers for projects within the County of San Bernardino for over ten years These proposed developments required the projected public revenues and costs generated for the San Bernardino County General Fund and other affected County funds. Such cities included Big Bear, Chino, Hesperia, Highland, Lake Arrowhead, Lytle Creek, Ontario, Rancho Cucamonga, Redlands, Rialto, Yucaipa and Yucca Valley.

DECLARATION OF STANLEY R. HOFFMAN

I, Stanley R. Hoffman, declare as follows:

1. I am the founder and principal of Stanley R. Hoffman Associates, an urban economics and financial consulting firm.

2. A copy of my professional qualifications and experience is attached hereto and incorporated herein by this reference.

3. The attached Memorandum dated June 30, 2010, regarding "Estimated Allocation of Fire Facility Costs to Proposed Solar Energy Installations" was either prepared by me or under my direction for San Bernardino County and the San Bernardino County Fire Department for, among other things, use as evidence in California Energy Commission siting cases for solar energy projects located in San Bernardino County. The information in this Memorandum and the conclusions reached are based upon data from reliable sources, my independent analysis, and my professional experience and knowledge.

4. It is my professional opinion that the prepared testimony is valid and accurate with respect to the issue(s) addressed therein.

5. I am personally familiar with the facts and conclusions related in the testimony and if called as a witness could testify competently thereto.

I declare under the penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

Dated: July 12, 2010

Signed: Stanley R. Hoffman

At: Los Angeles, California

Based on Abengoa Staff Recommendation

WORKER SAFETY-7 The project owner shall either:

(1) Reach an agreement, either individually or in conjunction with a power generation industry association or group that negotiates on behalf of its members, with the San Bernardino County Fire Department (SBCFD) regarding funding of its project-related share of capital and operating costs to build and operate new fire protection/emergency response infrastructure and provide appropriate equipment as mitigation of project-related impacts on fire protection/emergency response services within the jurisdiction.

or

(2) Shall fund its share of the SBCFD capital costs in the amount of $526,000 and provide an annual payment of $485,000 to the SBCFD for the support of new fire department staff, operations, and maintenance commencing with the start of construction and continuing annually thereafter on the anniversary of the payment until the final date of power plant decommissioning.

or

(3) The Project Owner shall fund a Fire Needs Assessment and Risk Assessment conducted by an independent contractor who shall be selected and approved by the CEC Compliance Project Manager (CPM) and fulfill all mitigation identified in the independent "fire needs assessment and a risk assessment. The Fire Needs Assessment would address emergency response and equipment/staffing/location needs while the Risk Assessment would be used to establish the risk (chances) of significant impacts occurring. In no event shall the Project Owner's cost responsibility under this option exceed that under option (2), above.

Should the applicant pursue option (3), above, the Fire Needs Assessment and Risk Assessment shall evaluate the following:

(a) Potential for impacts on the SBCFD and the project allocated costs of new and/or enhanced fire protection/emergency response services (which shall include services for inspections, permitting, fire response, hazardous materials spill/leak response, rescue, and emergency medical services) necessary to mitigate such impacts;

(b) The risk of impact on the local population that could result from potential unmitigated impacts on local fire protection and emergency services (Le. "drawdown" of emergency response resources);

(c) The extent that the project's exemption from local taxes will impact local fire protection and emergency response services; and

(d) Recommendation of an amount of funding that should be provided to mitigate any identified significant impacts on local fire protection and emergency response services.

Compliance Protocols for the Fire Needs Assessment and Risk Assessment shall be as follows:

(a) The Fire Needs Assessment and Risk Assessment shall be conducted by an independent consultant(s) selected and approved by the CPM;

(b) The Fire Needs Assessment and Risk Assessment shall be fully funded by the project owner. The independent consultant(s) preparing the Fire Needs Assessment and Risk Assessment shall work directly for the Energy Commission.

(c) The project owner shall provide the protocols for conducting the independent fire needs assessment for review and comment by the SBCFD and review and approval by the CPM prior to the independent consultant's commencement of the fire needs assessment;

(d) The CPM shall be copied in any correspondence including emails or letters and included in any conversations between the project owner and consultant; and

(e) The CPM shall verify that the Fire Needs Assessment and Risk Assessment are prepared consistent with the approved fire needs assessment protocols and a risk assessment protocols.

No construction of permanent above ground structures shall occur until full funding of mitigation occurs either (i) pursuant to an agreement reached between the project owner (or a power generation industry association or group that includes the project owner) and the SBCFD, or (ii) after payment of the fees. described above for capital improvements and the first annual payment, or (iii) pursuant to the independent Fire Needs and Risk Assessments conducted by an independent consultant approved by the CPM.

Verification: At least thirty (30) days prior to the start of site mobilization, the project owner shall provide to the CPM:

(1) A copy of the individual agreement with the SBCFD or, if the owner joins a power generation industry association, a copy of the group's bylaws and a copy of the group's agreement with the SBCFD; and evidence in each January Monthly Compliance Report that the project owner is in full compliance with the terms of such bylaws and/or agreement.

or

(2) Documentation that the amount of $526,000 has been paid to the SBCFD, documentation that the first annual payment of $485,000 has been made, and shall also provide evidence in each January Monthly Compliance Report during construction and the Annual Compliance Report during operation that subsequent annual payments have been made.

or

(3) A protocol, scope and schedule of work for the independent Fire Needs Assessment and Risk Assessment and the qualifications of proposed contractor(s) for review and approval by the CPM; a copy of the completed Fire Needs Assessment and Risk Assessment showing the precise amount the project owner shall pay for mitigation; and documentation that the amount has been paid.

Annually thereafter, the owner shall provide the CPM with verification of funding to the San Bernardino County Fire Department for required fire protection services mitigation pursuant to the agreement with the Fire Department or the CPM approved independent fire needs assessment.

WORKER SAFETY -8 The project owner shall: Provide a $1,011,000 payment to San Bernardino County Fire Department prior to the start of construction. This funding shall off-set any initial funding required by **WORKER SAFETY-7** above until the funds are exhausted. This offset will be based on a full accounting by the San Bernardino County Fire Department regarding the use of these funds.

Verification: At least 30 days prior to the start of site mobilization the project owner shall provide documentation of the payment described above to the CEC CPM. The CEC CPM shall adjust the payments initially required by **WORKER SAFETY-7** based upon the accounting provided by the San Bernardino County Fire Department.

Based on Abengoa PMPD

WORKER SAFETY-7 The project owner shall either:

(1) Reach an agreement with the San Bernardino County Fire Department (SBCFD) regarding funding of its project-related share of capital and operating costs to improve fire protection/emergency response infrastructure and provide appropriate equipment as mitigation of project-related impacts on fire protection/emergency response services within the jurisdiction;

or

(2) if no agreement can be reached, the project owner shall fund a study conducted by an independent contractor who shall be selected and approved by the CEC Compliance Project Manager (CPM) and fulfill all mitigation identified in the independent fire needs assessment and a risk assessment. The study will evaluate the project's proportionate funding responsibility for the above-identified mitigation measures, with particular attention to emergency response and equipment/staffing/location needs.

Should the project owner pursue option (2), above, the study shall be conducted pursuant to the Fire Needs Assessment and Risk Assessment shall evaluate the following:

(a) The project's proportionate (incremental) contribution to potential cumulative impacts on the SBCFD and the project allocated costs of enhanced fire protection/emergency response services including the fire response, hazardous materials spill/leak response, rescue, and emergency medical services necessary to mitigate such impacts;

(b) The extent that the project's contribution to local tax revenue will reduce impacts on local fire protection and emergency response services; and

(c) Recommend an amount of funding (and corresponding payment plan) that represents the project's proportional payment obligation for the above-identified mitigation measures.

Compliance Protocols shall be as follows:

(a) The study shall be conducted by an independent consultant selected by the project owner and approved by the CPM. The project owner shall provide the CPM with the names of at least three consultants,

whether entities or individuals, from which to make a selection, together with statements of qualifications;

(b) The study shall be fully funded by the project owner.

(c) The project owner shall provide the protocols for conducting the independent study for review and comment by the SBCFD and review and approval by the CPM prior to the independent consultant's commencement of the study;

(d) The consultant shall not communicate directly with the project owner or SBCFD without express prior authorization from the CPM. When such approval is given, the CPM shall be copied on any correspondence between or among the project owner, SBCFD, and the consultant (including emails) and included in any conversations between or among the project owner, SBCFD and consultant; and

(e) The CPM shall verify that the study is prepared consistent with the approved protocols,

or

(3) If the project owner and SBCFD do not agree to the recommendations of the independent consultant's study, the Energy Commission or its designee shall, based on the results of the study and comments from the project owner and SBCFD, make the final determination regarding the funding to be provided to the SBCFD to accomplish the above-identified mitigation.

No construction of permanent above-ground structures shall occur until funding of mitigation occurs pursuant to wither of the resolution options set forth above.

Verification: At least five (5) days before construction of permanent aboveground structures, the project owner shall provide to the CPM:

(1) A copy of the individual agreement with the SBCFD or, if the owner joins a power generation industry association, a copy of the group's bylaws and a copy of the group's agreement with the SBCFD; and evidence in each January Monthly Compliance Report that the project owner is in full compliance with the terms of such bylaws and/or agreement; or

(2) A protocol, scope and schedule of work for the independent study and the qualifications of proposed contractor(s) for review and approval by the CPM; a copy of the completed study showing the precise amount the project owner shall pay for mitigation; and documentation that the amount has been paid.

Annually thereafter, the owner shall provide the CPM with verification of funding to the SBCFD if annual payments were approved or recommended under either of the above-described funding resolution options.

WORKER SAFETY -8 The project owner shall:

> Provide a $200,000 payment to San Bernardino County Fire Department prior to the start of construction. This funding shall off-set any initial funding required by **WORKER SAFETY-7** above until the funds are exhausted. This offset will be based on a full accounting by the San Bernardino County Fire Department regarding the use of these funds.

Verification: At least five (5) days prior to the start of construction the project owner shall provide documentation of the payment described above to the CPM. The CPM shall adjust the payments initially required by **WORKER SAFETY-7** based upon the accounting provided by the San Bernardino County Fire Department.

DECLARATION OF SERVICE

I, **Renee Meyer**, declare that on **August 20, 2010**, I served and filed copies of the attached, **COMMENTS OF INTERVENOR COUNTY OF SAN BERNARDINO RE PRESIDING MEMBER PROPOSED DECISION**. 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: **[http://www.energy.ca.gov/sitingcases/ivanpah/index.html]**.

The document has been sent to both the other parties in this proceeding (as shown on the Proof of Service list) and to the Commission's Docket Unit, in the following manner:

(Check all that Apply)

FOR SERVICE TO ALL OTHER PARTIES:

☒ sent electronically to all email addresses on the Proof of Service list;

☐ by personal delivery;

☒ by delivering on this date, for mailing with the United States Postal Service with first-class postage thereon fully prepaid, to the name and address of the person served, for mailing that same day in the ordinary course of business; that the envelope was sealed and placed for collection and mailing on that date to those addresses **NOT** marked "email preferred."

AND

FOR FILING WITH THE ENERGY COMMISSION:

☒ sending an original paper copy and one electronic copy, mailed and emailed respectively, to the address below (***preferred method***);

OR

☐ depositing in the mail an original and 12 paper copies, as follows:

CALIFORNIA ENERGY COMMISSION
Attn: Docket No. 09-AFC-5
1516 Ninth Street, MS-4
Sacramento, CA 95814-5512
docket@energy.state.ca.us

I declare under penalty of perjury that the foregoing is true and correct, that I am employed in the county where this mailing occurred, and that I am over the age of 18 years and not a party to the proceeding.

Renee Meyer

BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT
COMMISSION OF THE STATE OF CALIFORNIA
1516 NINTH STREET, SACRAMENTO, CA 95814
1-800-822-6228 – WWW.ENERGY.CA.GOV

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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