



<b>DOCKET</b>	
<b>05-AFC-3</b>	
DATE	OCT 16 2007
RECD.	OCT 23 2007

October 16, 2007

Mr. Robert Worl  
Project Manager  
Energy Facilities Siting and  
Environmental Protection Division  
1516 9<sup>th</sup> Street MS 15  
Sacramento, CA 95814-5512

Subject: Valle Del Sol, Sun Valley Energy Project  
Documentation Demonstrating Compliance with  
Priority Reserve Rule 1309.1 (c)(5)(B)

Dear Mr. Worl:

Previously on August 31, 2007, Sun Valley Energy Project (SVEP) provided documentation on compliance with Criteria Pollutant & Toxics Requirements and technical supporting data. In response to subsequent multiple SCAQMD requests, SVEP is providing documentation demonstrating compliance with the requirement of Rule 1309.1 (c)(5)(B) dealing with renewable / alternative energy criteria.

Renewable / alternative energy is not a viable option for the power to be generated at the proposed site. For the purpose of this rule, renewable / alternative energy is hydropower, wind and wave power, solar and geothermal, and fossil fuel-based energy (provided emissions are no more than from a fuel cell) in lieu of natural gas fired EGF. As with our responses for the Walnut Creek Energy Park, our demonstrations are based on California Energy Commission (CEC) findings and other supplemental information.

First, we submit the results of an analysis completed by the CEC staff, which found that renewable energy is not a viable option to replace the generation proposed at the SVEP site. CEC's Preliminary Staff Assessment on SVEP, September 2007, Chapter 6 – Alternatives, discussed consideration of a reasonable range of alternatives. These included alternative generation technology (hydropower, geothermal, biomass, solar, and wind). Wave power was not evaluated as the site is distant from the ocean. The CEC concluded that these technologies do not fulfill a basic objective of the proposed project to provide peak load serving capability in order to ensure a reliable supply of electricity in the region. The CEC consequently stated that renewable technologies do not present feasible alternatives to the proposed project. Chapter 6 – Alternatives of the PSA is attached.

Second, SCAQMD made a further request for "an analysis to see if at least 50 MW of power can be generated on-site using solar, wind and fuel cell technology or any combination thereof." We provide the following supplemental information:

Edison Mission Energy  
18101 Von Karman Avenue  
Suite 1700  
Irvine, CA 92612 1046

PROOF OF SERVICE (REVISED 9/23/07) FILED WITH  
ORIGINAL MAILED FROM SACRAMENTO ON 10/23/07

CF

## **Wind**

Edison Mission Group, SVEP's parent company, is one of the largest builders, owners and operators of wind generation in the US, with 1000 MW currently operating or under construction. A state-of-the-art wind turbine generator has a hub height of about 260 feet and a rotor diameter of about 295 feet, for a total height of a little over 400 feet. The closest that wind turbine generators can be spaced is about 800 feet apart. SVEP's site is approximately 500 x 1500 feet, so it might be theoretically possible to accommodate two 2 MW wind turbine at the widest part of the parcel, but that would put the turbine at an unsafe clearance from neighboring structures & existing SCE power distribution lines. Moreover, an average wind speed of 6.5 m/s is considered the minimum for economic wind energy, and the average wind speed in the area of SVEP's site is less than 2 m/s, so the theoretical wind turbine would generate little, if any, electricity.

## **Solar**

SVEP's site is simply too small to accommodate solar generation. The proposed Victorville powerplant seeks the option (but not the obligation) to install 250 acres of solar thermal collectors to supply thermal energy to the combined cycle's steam turbine. The solar portion of the plant would generate 0.2 MW per acre; less than that when the land required for the steam turbine, ancillary equipment, and cooling tower are included. A 400 MW solar-only powerplant in Ivanpah has applied to the CEC for certification. Each 100 MW phase would require 850 acres, including all ancillary and heat rejection equipment, and would thus produce 0.12 MW per acre. SVEP's entire 20 acre site would only support 2-4 MW of solar generation if our current plan was totally discarded. The cost of solar generation must also be considered. The California Independent System Operator (CAISO) testified in CPUC Case A.06-08-010 that solar thermal generation had a levelized cost of \$120 per MWh of electricity, and that is for construction in remote areas where land is much less expensive than in the City of Industry. The forward price for on-peak electric energy in southern California over the next several years is \$75-80 per MWh, placing the cost of solar at least 50% above market.

## **Fuel Cell**

According to the California Energy Commission, "The only [fuel cell] available commercially today is the PureCell 200 (formerly PC-25)<sup>™</sup> built by UTC Power." The cost of the unit is approximately \$4,000/kW. The installed cost of the unit approaches \$1.1 million. At a rated output of 200 kW, this translates to about \$5,500/kW, installed. Other fuel cell types are less developed. At the current price, units are only used in high value, "niche" markets". According to the USDOE, "Today, the most widely deployed fuel cells cost about \$4,500 per kilowatt; by contrast, a diesel generator costs \$800 to \$1,500 per kilowatt, and a natural gas turbine can be \$400 per kilowatt or even less." The largest fuel cell claimed to be commercially available by its manufacturer is a 2.4 MW unit; its manufacturer is in the process of increasing its production capacity from 11 MW per year to 25 MW per year. Clearly, fuel cells are uneconomic at the present time and not available in sufficient volume even if massive cost subsidies were available to purchasers.

## **Combination**

Since neither wind nor solar nor fuel cells are viable options at SVEP's site at 500 MW, 50 MW, or any other capacity, then "any combination thereof" would be non-viable as well.

## **CAISO Study**

Last month CAISO issued a draft "Integration of Renewable Resources Report" in which it explored transmission and operating issues and recommendations for integrating increasing amounts of renewable resources, primarily wind generation, on the CAISO Control Grid. Among its key recommendations were:

- "Include changes in Resource Adequacy standard to require more generation with faster and more durable ramping capabilities that will be required to meet future ramp requirements; and
- Include changes in Resource Adequacy standard to require additional quick start units that will be required to accommodate Hour-Ahead forecasting errors and intra-hour wind variations."

The LMS100 gas turbines to be employed at the SVEP satisfy both requirements. These have the fastest ramp rate of any available gas turbine and qualify as quick start units due to their ability to start and achieve full load in 10 minutes. Consequently, while neither renewable nor alternative energy are viable options for the power to be generated at our site, SVEP's project is a critical enabler for increasing the use of renewable energy in California while maintaining electrical grid stability.

The impracticality of wind or solar generation on an 20 acre site in an urban area, and the commercial infeasibility of fuel cell generation, is obvious, and demonstration of those facts at arbitrary percentages is not going to result in a different conclusion, only further delay.

We appreciate your continued expeditious processing of our overall permitting request. The CEC is nearing completion of its SVEP Final Staff Assessment. And our power sales proposal is due in early January so we request that you provide the finding of compliance with applicable requirements of amended Rule 1309.1 in the next two (2) weeks.

Please contact me at (949) 798-7895 on any questions.

Sincerely,  
  
Victor Yamada  
Director, Environmental, Health & Safety

**Attachment: CEC's Preliminary Staff Assessment of Sun Valley Energy Project,  
Chapter 6 – Alternatives, May 2007**

**Copy: Mohsen Nazemi, SCAQMD  
Mike Mills, SCAQMD  
John Yee, SCAQMD  
Robert Worl, CEC  
Larry Kostrzewa, EME  
Tom McCabe, EME**

Preliminary Staff Assessment

# SUN VALLEY ENERGY PROJECT

Application For Certification (05-AFC-3)  
Riverside County



CALIFORNIA  
ENERGY  
COMMISSION

**DOCKET**  
**05-AFC-3**

DATE \_\_\_\_\_  
RECD. MAY 16 2007

**STAFF REPORT**

MAY 2007  
(05-AFC-3)  
CEC-700-2007-009-PSA

PROOF OF SERVICE (REVISED 5/2/07) FILED WITH  
ORIGINAL MAILED FROM SACRAMENTO ON 5/17/07



## **APPENDIX A: ALTERNATIVES CONSIDERED BUT ELIMINATED**

---

### **SITE ALTERNATIVES**

Potential sites located immediately to the east of the proposed project site and west of Menifee Road were considered and have the Light Industrial land use designation, but are zoned for Industrial Park development. A very large residential development called Menifee Valley Ranch is under construction to the east of Menifee Road. The parcels, zoned for Industrial Park, just east of the proposed project site and west of Menifee Road would serve as a buffering land use between the peaking project and the planned residential development. After review with County officials, this property, available for development as a buffering land use from the residential development, was not considered the preferred site.

Potential sites located east of the Valley substation were eliminated because they are generally zoned for residential development and would be very near the large-scale residential development currently under construction in the Menifee Valley Ranch.

### **NON-SITE ALTERNATIVES**

This section describes alternatives that did not satisfy the screening criteria for inclusion in a more detailed analysis, and include the following:

- Conservation and Demand-Side Management;
- Hydroelectric and Geothermal Generation;
- Biomass Generation;
- Solar Generation; and
- Wind Generation.

These alternatives, and the reasons for their not being considered in detail in this analysis, are addressed below.

#### **Conservation and Demand-Side Management**

Conservation and Demand-Side Management (DSM) consists of a variety of approaches, including energy efficiency improvement, building and appliance standards, and load management and fuel substitution. Public Resources Code Section 25305(c) states that conservation, load management, or other demand reducing measures reasonably expected to occur shall be explicitly examined in the Energy Commission's energy forecasts and shall not be considered as alternatives to a proposed facility during the siting process. The forecast that addresses this issue is the Energy Commission's 2005 Integrated Energy Policy Report. Thus, such alternatives are not included in this analysis.

#### **Hydroelectric and Geothermal Generation**

While hydropower does not require burning fossil fuels and may be available in California, this power source can cause significant environmental impacts, due primarily to the inundation of many acres of potentially valuable habitat and the interference with fish movements during their life cycles. The Elsinore Valley Municipal Water District and the

Nevada Hydro Company have proposed a 500 MW pumped storage hydroelectric facility, the Lake Elsinore Advanced Pump Storage (LEAPS) Project, which is under Federal Energy Regulatory Commission (FERC) review. Water would need to be pumped for 1 hour at 600 MW in order to allow generation for 1 hour at 500 MW. In addition to inefficient electricity generation and the complexity of a large hydroelectric project, LEAPS also involves a proposed 500-kV transmission through the Cleveland National Forest. FERC is expected to issue a decision sometime during 2007.

It is extremely unlikely that new large hydropower facilities could be developed and permitted in California within the next several years (Aspen 2001) because of the long planning and permitting times (e.g., LEAPS was initially proposed in 1987) generally required. No additional commercial scale hydroelectric resources currently exist in Riverside County. In addition, Riverside County does not have any commercial scale geothermal resources that would be sufficient for electricity generation. For these reasons, hydroelectric and geothermal generation were not considered practical alternatives.

### **Biomass Generation**

Biomass generation uses a waste vegetation fuel source such as wood chips (the preferred source) or agricultural waste. The fuel is burned to generate steam. Biomass facilities generate substantially greater quantities of air pollutant emissions than natural gas burning facilities. In addition, biomass plants are typically sized to generate less than 20 MW, which is substantially less than the capacity of the 500 MW SVEP project. Twenty-five 20 MW biomass facilities would be required to generate 500 MW. At the peak of the biomass industry, 66 biomass plants were in operation in California, but as of 2001, only about 30 direct-combustion biomass facilities were in operation (CEC 2004c). These power plants could have potentially significant environmental impacts of their own. Biomass fuels are not locally available in sufficient quantities to make them a practical alternative fuel. Therefore, this alternative is not included in this analysis.

### **Solar Generation**

There are two types of solar generation: solar thermal power and photovoltaic (PV) power generation.

Solar thermal power generation involves the conversion of solar radiation to thermal energy, which is then used to run a conventional steam power system. Solar thermal is a viable alternative to conventional generation systems and, depending on the technology, is suited to either distributed generation on the kW scale or to centralized power generation on scales up to hundreds of MW. Solar thermal systems use three designs to generate electricity: parabolic trough concentrating collectors, power tower/heliostat configurations, and parabolic dish collectors. Parabolic trough and power tower systems typically run conventional power units, such as steam turbines, while parabolic dish systems power a small engine at the focal point of the collector.

PV power generation involves the direct conversion of light to electricity. PV is best suited to distributed generation uses rather than centralized power generation. PV is the most capital intensive of any alternative generation technology (Aspen 2001). PV power systems consist of solar electric modules (built from PV cells) assembled into arrays of varying sizes to produce electric power proportional to the area of the array and the

intensity of the sunlight. PV arrays can be mounted on either the ground or on buildings. They can be installed on dual-purpose structures such as covered parking lots.

Solar resources would require large land areas in order to generate 500 MW of electricity. Specifically, assuming location in an area receiving maximum solar exposure such as the desert areas of California, central receiver solar thermal projects require approximately five acres per MW, so 500 MW would require approximately 2,500 acres. One square kilometer of PV generation (400 acres) can produce 100 MW of power, so 500 MW would require approximately 2,000 acres. Either of these technologies would use significantly more land area than the area required for the proposed SVEP.

Although air emissions are significantly reduced or eliminated for solar facilities, these facilities can have significant visual effects. Solar generation results in the absence or reduction in air pollutant emissions, and visible plumes. Although water is required for periodic washing of the collectors, water consumption for solar generation is substantially less than for a natural gas-fired plant because there is no thermal cooling requirement. However, development over a large area could affect numerous biological resources and would require careful analysis of potential impacts from either solar or PV generation at such a scale.

Like all technologies generating power for sale into the state's power grid, solar thermal facilities and PV generation require near access to transmission lines. Large solar thermal plants must be located in desert areas with high direct normal insolation, and in these remote areas, transmission availability is limited. Additionally, solar energy technologies cannot provide full-time, quick start availability due to the natural intermittent availability of sunlight. Therefore, solar thermal power and photovoltaic power generation would not successfully meet the proposed project objectives.

## **Wind Generation**

Wind carries kinetic energy that can be used to spin the blades of a wind turbine rotor and an electrical generator, which then feeds alternating current into the utility grid. Most state-of-the-art wind turbines operating today convert 35 to 40 percent of the wind's kinetic energy into electricity. Modern wind turbines represent viable alternatives to large bulk power fossil power plants as well as small-scale distributed systems. The range of capacity for an individual wind turbine today ranges from 400 watts up to 3.6 MW. California's 1,700 MW of wind power represents 1.5 percent of the state's electrical capacity (Aspen 2001).

Although air emissions are significantly reduced or eliminated for wind facilities, these facilities can have significant visual effects. Wind turbines have also caused bird mortality (especially for raptors) resulting from collision with rotating blades, although this effect is more noted in the Altamont Pass area than in other parts of the state.

Wind resources require large land areas in order to generate 500 MW of electricity. Depending on the size of the wind turbines, wind generation "farms" generally can require between 5 and 17 acres to generate one megawatt (CEC 2004a). A 500 MW plant would therefore require between 2,500 and 8,500 acres. The lack of available transmission access is an important barrier to wind power development (Beck et al. 2001). California has a diversity of existing and potential wind resource regions that are near load centers such as San Francisco, Los Angeles, San Diego and Sacramento



(CEC 2004b). However, wind energy technologies cannot provide full-time, quick start availability due to the natural intermittent availability of wind resources. Therefore, wind generation technology would not meet the proposed project's goal, which is to provide peak-serving capacity.

### **Conclusion Regarding Alternative Technologies**

Alternative generation typically has specific resource needs, environmental impacts, permitting difficulties, and intermittent availability. Therefore, these technologies do not fulfill a basic objective of the proposed project which is to provide peak load serving capability in order to ensure a reliable supply of electricity in the region. Consequently, staff does not believe that these renewable technologies present feasible alternatives to the proposed project.

**BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION  
OF THE STATE OF CALIFORNIA**

**APPLICATION FOR CERTIFICATION  
FOR THE SUN VALLEY ENERGY  
PROJECT (SVEP)**

**DOCKET No. 05-AFC-3  
PROOF OF SERVICE LIST  
(Revised 3/23/07)**

**INSTRUCTIONS:** All parties shall 1) send an original signed document plus 12 copies OR 2) mail one original signed copy AND e-mail the document to the web address below, AND 3) all parties shall also send a printed OR electronic copy of the documents that shall include a proof of service declaration to each of the individuals on the proof of service:

**DOCKET UNIT**

**CALIFORNIA ENERGY COMMISSION**

Attn: Docket No. 05-AFC-3  
1516 Ninth Street, MS-4  
Sacramento, CA 95814-5512  
[docket@energy.state.ca.us](mailto:docket@energy.state.ca.us)

**APPLICANT**

Jenifer Morris  
Project Manager  
NJ Resources, LLC  
7240 Heil Ave.  
Huntington Beach, CA 92647  
[jenifer@njr.net](mailto:jenifer@njr.net)

**\*Victor Yamada, Project Manager**  
**Edison Mission Energy**  
**18101 Von Karman Avenue,**  
**Suite 1700**  
**Irvine, CA 92612-1046**  
[vyamada@EdisonMission.Com](mailto:vyamada@EdisonMission.Com)

Tom McCabe  
Edison Mission Energy  
18101 Von Karman Avenue  
Irvine, CA 92612  
[tmccabe@edisonmission.com](mailto:tmccabe@edisonmission.com)

**APPLICANT'S CONSULTANT**

CH2M HILL  
Douglas M. Davy, Ph.D., Sr. Project  
Manager  
2485 Natomas Park Dr., Suite 600  
Sacramento, CA 95833  
[ddavy@ch2m.com](mailto:ddavy@ch2m.com)

**COUNSEL FOR APPLICANT**

Galati & Blek, LLP  
Scott Galatti  
Plaza Towers  
555 Capitol Mall, Suite 600  
Sacramento, CA 95814  
[sgalati@gb-llp.com](mailto:sgalati@gb-llp.com)

**INTERESTED AGENCIES**

Songzhe Zhu  
Ca. Independent System Operator  
151 Blue Ravine Road  
Folsom, CA 95630  
[SZhu@caiso.com](mailto:SZhu@caiso.com)

Eric Saltmarsh  
Electricity Oversight Board  
770 L Street, Suite 1250  
Sacramento, CA 95814  
[esaltmarsh@eob.ca.gov](mailto:esaltmarsh@eob.ca.gov)

### **INTERVENORS**

Roland Skumawitz, Superintendent  
Romoland School District  
25900 Leon Road  
Romoland, California 92548

California Unions for Reliable Energy  
Marc D. Joseph  
Gloria D. Smith  
Adams Broadwell Joseph & Cardozo  
601 Gateway Boulevard, Suite 1000  
South San Francisco, California 94080  
[mdjoseph@adamsbroadwell.com](mailto:mdjoseph@adamsbroadwell.com)

### **INTERESTED PERSONS**

**\*Brenda Tomaras**  
**Tomaras and Ogas**  
**10755-F Scripps Poway Parkway,**  
**#281**  
**San Diego, CA 92131**  
**[btomaras@mtowlaw.com](mailto:btomaras@mtowlaw.com)**

**\*Laura Miranda,**  
**Deputy General Council**  
**Pechanga Indian Reservation**  
**Post Office Box 1477**  
**Temecula, CA 92593**  
**[lmiranda@Pachangansn.gov](mailto:lmiranda@Pachangansn.gov)**

### **ENERGY COMMISSION**

John L. Geesman  
Presiding Member  
[igeesman@energy.state.ca.us](mailto:igeesman@energy.state.ca.us)

Jackalyne Pfannenstiel  
Associate Member  
[jpffannen@energy.state.ca.us](mailto:jpffannen@energy.state.ca.us)

Gary Fay  
Hearing Officer  
[gfay@energy.state.ca.us](mailto:gfay@energy.state.ca.us)

Project Manager  
Robert Worl  
[rworl@energy.state.ca.us](mailto:rworl@energy.state.ca.us)

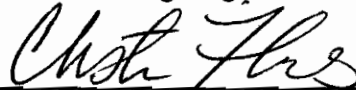
Staff Counsel  
Deborah Dyer  
[ddyer@energy.state.ca.us](mailto:ddyer@energy.state.ca.us)

Public Adviser  
[PAO@energy.state.ca.us](mailto:PAO@energy.state.ca.us)

**DECLARATION OF SERVICE**

I, Christina Flores declare that on October 23, 2007 I deposited copies of the attached VSE to SCAQMD: Priority Reserve Rule Compliance Statement in the United States mail at Sacramento, CA with first class postage thereon fully prepaid and addressed to those identified on the Proof of Service list above. Transmission via electronic mail was consistent with the requirements of California Code of Regulations, title 20, sections 1209, 1209.5, and 1210.

I declare under penalty of perjury that the foregoing is true and correct.



\_\_\_\_\_  
(Signature)