

# Memorandum

Date: June 2, 2008  
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File: 08-AFC-2

To: Commissioner Karen Douglas, Presiding Member  
Commissioner Jeffery Byron, Associate Member

From: California Energy Commission -  
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Sacramento, CA 95814-5512

Bill Pfanner  
Siting Project Manager

Subject: **BEACON SOLAR ENERGY PROJECT (08-AFC-2)  
ISSUES IDENTIFICATION REPORT**

<b>DOCKET</b>	
<b>08-AFC-2</b>	
DATE	JUN 0 2 2008
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Attached is the staff's Issues Identification Report for the Beacon Solar Energy Project (08-AFC-2). This report serves as a preliminary scoping document that identifies the issues that the California Energy Commission staff believes will require careful attention and consideration. Energy Commission staff will present the Issues Identification Report at the Informational Hearing and Site Visit to be held on June 11, 2008.

This report also provides a proposed schedule pursuant to the 12-month Application for Certification process.

cc: Docket (08-AFC-2)  
Proof of Service List

Attachment

PROOF OF SERVICE (REVISED 5/22/08) FILED WITH  
ORIGINAL MAILED FROM SACRAMENTO ON 6/2/08  
IMS

**BEACON SOLAR ENERGY PROJECT**

(08-AFC-2)

June 2, 2008

**ISSUES IDENTIFICATION REPORT**

**CALIFORNIA ENERGY COMMISSION**

**Energy Facilities Siting Division**

**ISSUES IDENTIFICATION REPORT  
BEACON SOLAR ENERGY PROJECT  
(08-AFC-2)**

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# ISSUES IDENTIFICATION REPORT

California Energy Commission Staff

This report has been prepared by the California Energy Commission staff to inform the Beacon Solar Energy Project Committee and all interested parties of the potential issues that have been identified in the case thus far. These issues have been identified as a result of staff's discussions with federal, state, and local agencies, and our review of the Beacon Solar, LLC Application for Certification, Docket Number 08-AFC-2. The Issues Identification Report contains a project description, summary of potentially significant environmental issues, and a discussion of the proposed project schedule. The staff will address issues and progress towards their resolution in periodic status reports to the Committee.

## PROJECT DESCRIPTION

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On March 14, 2008, the California Energy Commission received an Application for Certification (AFC) from Beacon Solar, LLC (Beacon Solar), a subsidiary of FPL Energy, LLC (FPLE). The proposed project would be a concentrated solar electric generating facility on an approximately 2,012-acre site in eastern Kern County, California. The project would use parabolic trough solar thermal technology to produce electrical power using a steam turbine generator fed from a solar steam generator. The solar steam generator receives heated transfer fluid from solar thermal equipment comprised of arrays of parabolic mirrors that collect energy from the sun. The project would have a nominal electrical output of 250 megawatts (MW).

Beacon Solar's primary objective for the proposed project is to construct, operate and maintain an efficient, economic, reliable, safe and environmentally-sound solar powered generating facility. The facility is intended to help meet the State of California objectives mandated by SB 1078 (California Renewable Portfolio Standard Program); AB 32 (California Global Warming Solutions Act of 2006); and other local mandates adopted by the State's municipal electric utilities for the long term wholesale purchase of renewable electric energy for distribution to their customers.

The project site is located in eastern Kern County at the western edge of the Mojave Desert. The project site is located along the California State Route (SR)-14 corridor, approximately four miles north-northwest of the northern boundary of California City, approximately 15 miles north of the town of Mojave, approximately 17 miles north of Edwards Air Force Base, and approximately 24 miles northeast of the city of Tehachapi. Koehn Lake (usually dry) is located approximately five miles to the east-northeast, and Red Rock Canyon State Park is located approximately four miles to the north.

The project would use a wet cooling tower for power plant cooling. Water for cooling tower makeup, process water makeup, and other industrial uses such as mirror washing, would be supplied from onsite groundwater wells, which also would be used to supply water for employee use (e.g., drinking, showers, sinks, and toilets). A package water treatment system would be used to treat the groundwater to meet potable standards for employee use and a septic system and onsite leach field would be used to dispose of sanitary wastewater.

It is estimated that the project would use approximately 1,600 acre feet per year of groundwater. According to pumping test data provided in the AFC, groundwater supply wells on the plant site have sufficient capacity (at least 2,000 gallons per minute) to meet the project's water supply requirements. According to the AFC, the project's groundwater usage would slow down (by less than 20 percent) the rate of groundwater level recovery in the area over recent years that has resulted from the cessation of agricultural activities on and around the project site.

The project's solar thermal technology would provide 100 percent of the power generated by the plant; no supplementary energy source (e.g., natural gas combustion to generate electricity) is proposed. The project would utilize two auxiliary boilers fueled by natural gas to reduce startup time and to keep the temperature of the heat transfer fluid above its relatively high freezing point (54 degrees Fahrenheit (°F)). To provide fuel to the boilers, a new 17.6-mile, eight-inch gas pipeline would be constructed (entirely within already-disturbed rights of way) to connect the project to an existing Southern California Gas Company pipeline west of California City.

Beacon Solar has filed an electrical interconnection request for the project with the Los Angeles Department of Water and Power (LADWP). LADWP's 230 kilovolt (kV) Barren Ridge Switching Station is located across California State Route 14 (SR-14) approximately 1.5 miles southwest of the project site. Beacon Solar is seeking approval of the following two similar options for interconnecting the project to LADWP's transmission system, only one of which would eventually be built:

**Option 1:** Construction of a new, approximately 3.5-mile 230 kV transmission line (approximately 1.6 miles within the 2,012-acre plant site boundary), that would run west from the power block across SR-14 and south across private property to the Barren Ridge Switching Station.

**Option 2:** Construction of a new, approximately 2.3-mile 230 kV transmission line (approximately 1.6 miles within the plant site boundary), that would run west across SR-14 to a new project switching station to be constructed at the location where the project's transmission line first meets LADWP's existing transmission right-of-way (ROW). A second, 230 kV transmission line slightly over one mile long would then be constructed east of and adjacent to the existing Los Angeles Department of Water and Power ROW from the new project switching station down to the Barren Ridge Switching Station.

Both options are being pursued at this time because a final route cannot be selected until the System Impact Study and Facilities Study are completed by LADWP, a more detailed design is completed, and the associated transmission line route easements are secured for the option selected.

If approved, Beacon Solar plans to begin project construction in the third quarter of 2009 and take approximately 25 months for project completion. Commercial operation is planned for the third quarter of 2011.

## POTENTIAL MAJOR ISSUES

This portion of the report contains a discussion of the potential major issues the Energy Commission staff has identified to date. Discovery is not yet complete, and potentially interested parties have not yet had an opportunity to identify their concerns. The identification of the potential issues contained in this report is based on comments of other government agencies received to date and on staff's judgment of whether any of the following circumstances will occur:

- Potential significant impacts which may be difficult to mitigate;
- Potential areas of noncompliance with applicable laws, ordinances, regulations or standards (LORS);
- Areas of conflict between the parties; or
- Areas where resolution may be difficult or may affect the schedule.

The following table lists all the subject areas evaluated and notes those areas where major issues have been identified, as well as areas where staff will be filing data requests (DR). The Committee should be aware that even though an area is identified as having no potential issues, it does not mean that an issue will not arise related to the subject area in the future. In addition, disagreements regarding the appropriate conditions of certification may arise between staff and applicant that will require discussion at workshops and subsequent hearings.

Major Issue	DRs	Subject Area	Major Issue	DRs	Subject Area
Yes	Yes	Air Quality	No	No	Noise and Vibration
Yes	Yes	Biological Resources	No	No	Paleontological Resources
No	Yes	Cultural Resources	No	No	Public Health
No	No	Efficiency and Reliability	No	Yes	Socioeconomics
No	No	Electromagnetic Field/Health Effects	Yes	Yes	Soils & Water Resources
No	No	Facility Design	No	No	Traffic and Transportation
No	No	Geological Resources	No	No	Transmission Line Safety
No	No	Hazardous Materials	No	Yes	Transmission System Design
No	No	Worker Safety and Fire Protection	No	No	Visual Resources
No	No	Land Use	No	Yes	Waste Management
Yes	No	Project Description	No	No	Alternatives

This report does not limit the scope of staff's analysis throughout this proceeding, but acts to aid in the identification and analysis of potentially significant issues that the Beacon project poses. Staff is preparing data requests in the technical areas of Air Quality, Biological Resources, Cultural Resources, Socioeconomics, Soil and Water Resources, Transmission System Design, and Waste Management. The following discussion summarizes major issues, identifies the parties needed to resolve the issue, and outlines a process for achieving resolution.

## **PROJECT DESCRIPTION**

### **BACKGROUND AND MAJOR ISSUES**

The AFC discusses in very general terms the construction phase of the project without going into much detail as to how the applicant will plan and execute a very ambitious site preparation effort of moving 5.16 million cubic yards (7.7 million tons) of soil on a project site of over 2,000 acres. Without a more thorough and comprehensive discussion in the application, staff in many disciplines (such as Soil Resources, Biological Resources, Water Resources, Cultural Resources and Air Quality) cannot properly analyze the project's construction related impacts to their respective disciplines. Staff is providing numerous data requests in an effort to more fully understand how the construction phase of the project will take place.

## **AIR QUALITY**

### **BACKGROUND AND MAJOR ISSUES**

Large volumes of soil must be moved and graded in the leveling of the site. Section 5.2.4.4 of the AFC states that there will be sections of at most 60,701 square meters (approximately 14.9 acres) of ground that will be undergoing disturbance at any one time, until the entire site of approximately 2,000 acres is completed. Energy Commission staff needs to understand how the particulate matter (PM10) generated by construction activities will be managed and controlled on an ongoing basis during each phase of construction. Staff is preparing data requests to address this issue.

## **BIOLOGICAL RESOURCES**

### **BACKGROUND AND MAJOR ISSUES**

Pine Tree Creek will be re-routed south and east of the project site, resulting in impacts to 8,150 linear feet of the western channel of this dry wash, and 6,200 feet of the eastern channel. Eliminating the current drainage features will result in impacts to 13.7 acres of State jurisdictional waters. According to Appendix L of the AFC, the new drainage replacing the Pine Tree Creek washes will be a trapezoidal channel having 3:1 side slopes with a minimum bottom width of 345 feet and minimum depth of 8 feet. This engineered channel will be designed to accommodate flood flows up to 20,000 cubic feet per second.

The California Department of Fish and Game (CDFG) has expressed concerns about the potential flooding and erosion that might result from re-routing Pine Tree Creek, and about how the artificial channel could replace the biological and hydrological functions of the natural drainage. Staff shares these concerns. A data response workshop will be scheduled with CDFG, Energy Commission staff, the applicant, and all parties to specifically address flooding and habitat issues relating to re-routing of Pine Tree Creek.

## **WATER AND SOIL RESOURCES**

### **BACKGROUND AND MAJOR ISSUES**

The project proposes using high quality groundwater from onsite wells for site construction and power plant cooling. Peak water usage is expected to be 10 million gallons per day during the initial five month construction period consuming approximately 4,603 acre-feet. It is expected that power plant operation will consume approximately 1,600 acre-feet per year. The groundwater sub-basin from which the project will be drawing water is in a state of overdraft from former agriculture use. Agricultural production ceased in the early to mid-1980s. Staff's preliminary review of data presented by the applicant shows that in the 20 years since former agriculture use has ceased, the water table has rebounded approximately 100 feet or five feet per year. The applicant's position is that the anticipated use will slow down the rate of rebound, but not reverse the current trend. Staff has received calls from adjacent communities that are concerned that this use of fresh water for power plant cooling could impact their groundwater supply, and adversely affect the subbasins recovery from overdraft.

Additional analysis is needed to evaluate whether this fresh water use will result in significant adverse environmental impacts and to determine if it is consistent with Energy Commission water policy. Energy Commission staff are working with water districts/agencies and the applicant to evaluate alternative water sources (e.g. brackish water) and cooling technologies (e.g. air-cooling).

The project proposes to capture, channelize, and divert Pine Tree Creek to convey flows around the property boundary. The applicant has reported that flows as high as 20,000 cubic feet per second are anticipated following a 100 year storm event. This realignment will be accomplished by constructing a channel configured with two 90 degree bends. Given the estimated flows, staff anticipates that severe erosion and flooding may occur in these unnaturally configured segments of the realigned drainage. Staff has provided a data request seeking further analysis of the site hydrology. Staff is not sure whether the applicant's consideration of staff's concern and resulting data requests will result in significant changes to the drainage collection and conveyance design. If significant redesign is needed, a response may take additional time beyond the allowed 30 days for the applicant's data response and may extend the project's 12-month schedule.

### **SCHEDULING**

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Following is staff's proposed 12-month schedule for key events of the Beacon project. Meeting the proposed schedule will depend on: the applicant's timely response to staff's data requests; the timing of the Kern County Air Pollution Control District's (KCAPCD's) filing of the Determination of Compliance; determinations by other local, state and federal agencies; and other factors not yet known. The KCAPCD will be required to provide a Preliminary Determination of Compliance (PDOC) and a Final Determination of Compliance (FDOC). Prior to the publication of the Preliminary Staff Assessment (PSA), staff normally requires a PDOC from the air district, and the FDOC before it publishes the Final Staff Assessment (FSA).

## PROPOSED SCHEDULE

### BEACON SOLAR ENERGY PROJECT (08-AFC-2)

	<b>Activity</b>	<b>Day</b>	<b>Calendar Day</b>
1	Applicant files Application for Certification (AFC)	-45	14-Mar-07
2	Executive Director's recommendation on Data Adequacy	-17	11-Apr-08
3	Decision on Data Adequacy at the Business Meeting	0	7-May-08
4	Staff files Issue Identification Report	27	2-Jun-08
5	Staff files 1st Round Data Requests	28	3-Jun-08
6	Information hearing and site visit	35	11-June-08
7	Applicant provides data responses (round 1)	62	7-July-08
8	Data response and issue resolution workshop (round 1)	76	21-Jul-08
9	Staff files data requests (round 2, if necessary)	87	1-Aug-08
10	Applicant provides data responses (round 2, if necessary)	115	29-Aug-08
11	Local, state and federal agency draft determinations*	120	3-Sept-08
12	Data response and issue resolution workshop (round 2)	135	18-Sep-08
13	Preliminary Staff Assessment filed	164	17-Oct-08
14	Preliminary Staff Assessment workshop(s)	181	3-Nov-08
15	Local, state and federal agency final determinations*	181	3-Nov-08
16	Final Staff Assessment filed	210	2-Dec-08
17	Prehearing Conference**	225	17-Dec-08
18	Evidentiary hearings**	230	22-Dec-08
19	Committee files proposed decision**	304	7-Mar-09
20	Hearing on the proposed decision**	321	24-Mar-09
21	Addendum/revised proposed decision**	350	24-Apr-09
22	Commission Decision	365	9-May-09
* Issuance of PDOC and FDOC by KCAPCD			
**Items 17 thru 21 are scheduled by the Hearing Office			

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

**APPLICATION FOR CERTIFICATION  
For the *BEACON SOLAR ENERGY  
PROJECT***

**Docket No. 08-AFC-2**

**PROOF OF SERVICE  
(Revised 5/22/08)**

**INSTRUCTIONS: All parties shall either (1) send an original signed document plus 12 copies or (2) mail one original signed copy AND e-mail the document to the address for the Docket as shown below, AND (3) all parties shall also send a printed or electronic copy of the document, which includes a proof of service declaration to each of the individuals on the proof of service list shown below:**

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**DECLARATION OF SERVICE**

I, Maria Sergoyan, declare that on June 2, 2008, I deposited copies of the attached Beacon Solar Energy Project (08-AFC-2) Issues Identification Report in the United States mail at with first-class postage thereon fully prepaid and addressed to those identified on the Proof of Service list above.

**OR**

Transmission via electronic mail was consistent with the requirements of California Code of Regulations, title 20, sections 1209, 1209.5, and 1210. All electronic copies were sent to all those identified on the Proof of Service list above.

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

Original Signiture in Dockets \_\_\_\_\_  
**Maria Sergoyan**