

Memorandum

Date: October 22, 2009
Telephone: (916) 654-4781
File: 09-AFC-5

To: Commissioner Julia Levin, Presiding Member
 Commissioner James Boyd, Associate Member

From: California Energy Commission - Craig Hoffman
 1516 Ninth Street Siting Project Manager
 Sacramento, CA 95814-5512

Subject: ABENGOA MOJAVE SOLAR (09-AFC-5)
 ISSUES IDENTIFICATION REPORT

DOCKET	
09-AFC-5	
DATE	<u>OCT 22 2009</u>
REC'D	<u>OCT 22 2009</u>

Attached is staff's Issues Identification Report for the Abengoa Mojave Solar project. This report serves as a preliminary scoping document that identifies issues that Energy Commission staff believes will require careful attention and consideration. Energy Commission staff will present the issues report at the Informational Hearing and Site Visit to be separately noticed by the assigned Committee for the project at a date in early December.

This report also provides a proposed schedule pursuant to the 12-month Application for Certification process, with a footnote discussion of staff's current workload.

Attachment

cc: Proof of Service List
 Docket 09-AFC-5

ABENGOA MOJAVE SOLAR

(09-AFC-5)

ISSUES IDENTIFICATION REPORT

CALIFORNIA ENERGY COMMISSION

Siting, Transmission and Environmental Protection Division

ISSUES IDENTIFICATION REPORT ABENGOA MOJAVE SOLAR

(09-AFC-5)

Table of Contents

PROJECT DESCRIPTION.....	1
POTENTIAL MAJOR ISSUES.....	3
SOILS AND WATER RESOURCES.....	4
SCHEDULING	5

ISSUES IDENTIFICATION REPORT

Energy Commission Staff Report

PURPOSE OF THE REPORT

This report has been prepared by the California Energy Commission staff to inform the 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 our discussions with federal, state, and local agencies, and our review of the Abengoa Mojave Solar (AMS) Application for Certification (AFC) filed August 10, 2009 and the AFC Supplement filed September 24, 2009. The Issues Identification Report contains a project description, summary of potentially significant environmental and engineering issues, and a discussion of the proposed project schedule. The staff will continue to address the status of issues and progress towards their resolution in periodic status reports to the Committee.

PROJECT DESCRIPTION

The proposed project site is located approximately nine miles northwest of the town of Hinkley in unincorporated San Bernardino County, approximately halfway between the city of Barstow and the community of Kramer Junction (Highway 395 / Highway 58 junction). Project access is provided by Harper Lake Road, which is located approximately twenty miles west of Barstow along the Highway 58 corridor. The project site is approximately six miles north of the intersection of Harper Lake Road with Highway 58. The existing Solar Electric Generating Stations (SEGS) VIII and IX facilities, owned by NextEra™ Energy Resources, are located immediately northwest of the project site.

The project site is comprised of private property that was historically used as the Lockhart Ranch complex. The property has served as an agricultural and cattle center for over sixty years and, in that capacity, has utilized water from ground wells; farming activities included flood irrigation and ultimately the pivot system of irrigation of quarter section (160 acres) areas. Currently there are residential areas on the property; there is one active pivot irrigation field in production on the site. The property is designated Rural Living (RL) by the San Bernardino County General Plan and also zoned Rural Living (RL).

The proposed AMS project is a solar electric generating facility to be located on approximately 1,765 acres. The project would utilize solar parabolic trough technology to activate a heat transfer fluid. The proposed collector fields of parabolic trough solar collectors are modular in nature and comprise many parallel rows of solar collectors, with parabolic shaped reflectors, aligned on a north-south axis.

As heat transfer fluid is circulated through the solar field, light from the sun reflects off the solar collector's parabolic troughs and is concentrated on the heat collection elements located at the focal point of the parabola. This heat transfer fluid provides a high-temperature energy source which is used to generate steam in solar steam generators. As this steam expands through the steam turbine generators, electrical power is generated.

The project would have a combined nominal electrical output of 250 megawatts (MW) from twin, independently-operable solar fields, each feeding a 125-MW power island. The twin solar fields would be 884 acres and 800 acres, respectively, and joined at a transmission line interconnection substation, that is located on-site, to form one full-output transmission interconnection. An additional 81 acres, shared between the plant sites, would be utilized for the construction of drainage facilities for receiving and discharging of on-site and off-site drainage.

The sun would provide 100 percent of the power supplied to the project through solar-thermal collectors; no supplementary fossil-based energy source (e.g., natural gas) is proposed for electrical power production. However, natural gas for the AMS project's ancillary purposes, such as the auxiliary boilers, space heating, and the like would be supplied by an existing natural gas pipeline that runs to the project boundary; no off-site pipeline facilities are proposed as a part of this project. Each power island would also have a diesel engine-driven firewater pump for fire protection and a diesel engine-driven backup generator for power plant essentials.

The AMS project is proposing to connect to Southern California Edison Company's Kramer-Cool Water 230-kV transmission line which is located adjacent to the southern border of the proposed project site. All AMS project-related transmission facilities would be within the project boundaries except the connection to the existing transmission system adjacent to the site.

The AMS project proposes to use wet cooling towers for power plant cooling and owns adjudicated water rights to the Harper Valley Groundwater Basin for this purpose. The Mojave Water Agency administers these water rights. According to laboratory analysis of groundwater samples collected from the active Ryken well, which is located within the project site, the expected groundwater supply will be brackish and therefore not suitable for municipal supply or other potable uses without treatment. The solar project proposes to utilize 2,163 acre-feet of water per year, for 30 years. The AMS project through ownership or purchase options has rights to 10,478 acre-feet of groundwater per year.

Water from onsite groundwater wells will be treated and used for cooling tower makeup, process water makeup, and other industrial uses such as Solar Collector Array (SCA) washing, as well as to supply water for employee use (e.g., drinking, showers, sinks, and toilets). No off-site backup cooling water supply is planned and no off-site water pipelines are included with this application; multiple onsite water supply wells would be used.

The project will include four 5-acre evaporation ponds for industrial wastewater. The ponds will be lined to contain any deposits from the cooling and water treatment processes. A sanitary septic system and on-site leach field will be located on-site to dispose of sanitary wastewater on each power island.

If approved, construction of the generating facility, from site preparation and grading to commercial operation, is expected to take place from the fourth quarter of 2010 to the fourth quarter of 2012 (24 months total). If approved, the applicant anticipates that the project would be on line and in commercial service by the fourth quarter of 2012.

POTENTIAL MAJOR ISSUES

This portion of the report contains a discussion of the potential issues the Energy Commission staff has identified to date. The Committee should be aware that this report might not include all of the significant issues that may arise during the case. Discovery is not yet complete, and other parties have not 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 and on our judgment of whether any of the following circumstances could 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 or potential conflict between the parties; and
- Areas where resolution may be difficult or may affect the schedule.

The following table lists all the subject areas evaluated and notes Soil and Water Resources as an area where potentially significant issues have been identified. Identification of an area as having no potential issues does not mean that an issue will not arise related to the subject area during the course of the AFC review process.

This report will not limit the scope of staff's analysis throughout this proceeding, but it acts to aid in the analysis of the potentially significant issues that the Abengoa Mojave Solar proposal poses. The following discussion summarizes the potential issues, identifies the parties needed to resolve the issues, and where applicable suggests a process for achieving resolution. At this time, staff does not see these potential issues as non-resolvable.

The table on the following page lists all the subject areas evaluated and notes that only Soils and Water Resources has currently identified potentially significant issues. The table also indicates the subject areas in which staff, at the present time, expects to issue data requests (DRs). DRs in additional areas may become necessary as the case progresses.

Major Issues	DRs	Subject Area	Major Issues	DRs	Subject Area
No	Yes	Air Quality	No	No	Project Overview
No	Yes	Alternatives	No	Yes	Public Health
No	Yes	Biological Resources	No	Yes	Reliability
No	Yes	Cultural Resources	No	No	Socioeconomics
No	No	Efficiency	Yes	Yes	Soils and Water Resources
No	No	Facility Design	No	No	Traffic and Transportation
No	Yes	Geological Hazards	No	No	Trans. Line Safety & Nuisance
No	Yes	Hazardous Materials Handling	No	Yes	Transmission System Design
No	Yes	Land Use	No	Yes	Visual Resources
No	No	Noise	No	Yes	Waste Management
No	Yes	Paleontological Resources	No	Yes	Worker Safety

SOILS AND WATER RESOURCES

The applicant proposes pumping groundwater from the Mojave River Basin (MRB) for power plant cooling. Information presented by the applicant shows that groundwater would be extracted from a portion of the basin that is high in total dissolved solids and can be considered impaired for most municipal and potable water uses. The use of impaired groundwater is generally consistent with State Water Resources Control Board and Energy Commission water policies regarding use of freshwater as a last resort choice for power plant cooling. Furthermore, availability and sustainability of groundwater supplies for potable use have become an issue of statewide concern particularly given the current drought conditions and restrictions on Sacramento-San Joaquin Delta pumping. Impaired water supplies generally have limited potential for use as a municipal or potable water supply. In desert environments like the project site, however, the threshold for what would be considered an impaired water body or supply can be relatively high depending on the need and use for water established in a given area.

The use of groundwater in the MRB has been adjudicated because of long-term overdraft conditions and basin-wide impacts on all pumpers. The use of groundwater is now managed by a court appointed watermaster. The watermaster is responsible for implementing a physical solution that is designed to maintain proper water balances in the basin for all pumpers. An underlying assumption of the court's judgment is that sufficient water will be made available to meet the needs of the basin in the future from a combination of natural supply, imported water, water conservation, water reuse and transfers of production allowances among pumpers. The applicant has provided supporting information showing they have pumping rights and access to supplemental supplies within the basin.

Staff is concerned that even though the applicant may be able to assert themselves as a pumper in the basin and stipulate to the physical solution, the basin is in an overdraft condition and any additional pumping could result in significant impacts to other users.

Staff is also concerned that project pumping in this portion of the basin could change hydraulic gradients and cause migration of impaired groundwater towards portions of the basin where there is relatively high quality groundwater. Based on preliminary review of groundwater modeling, staff also has questions and concerns regarding the adequacy of the characterization of potential impacts.

The Energy Commission staff will be working with the Mojave Water Agency, the Mojave Water Agency watermaster and the applicant to fully evaluate potential impacts, feasible mitigation measures, and alternative water sources and alternative cooling technologies (i.e., air-cooling or an air-water hybrid) to resolve these issues.

PROJECT SCHEDULE

On the following page is staff's proposed 12-month schedule for the key events of the project. Meeting the proposed schedule will depend on: the applicant's timely response to staff's data requests; the timing of the Mojave Desert Air Quality Management District (MDAQMD) filing of the Determination of Compliance; determinations by other local, state and federal agencies; the submittal of required applications and approval of permits by federal agencies; and other factors not yet known. The approval of applications and conditions of approval by other agencies will greatly affect the proposed schedule. This is particularly true of the Section 7 consultation with the U.S. Fish and Wildlife Service regarding potential impacts to federally listed sensitive species, such as desert tortoise, and related mitigation options.

The MDAQMD will be required to provide a Preliminary Determination of Compliance (PDOC) and a Final Determination of Compliance (FDOC) that will be incorporated into staff analysis.

STAFF'S PROPOSED SCHEDULE – Abengoa Mojave Solar - (09-AFC-5)

	ACTIVITY	DATE
1	Applicant files Application for Certification (AFC)	8/10/09
2	Commission's determination that AFC is complete	10/21/09
3	Staff files Issues Identification Report	10/22/09
4	Staff files data requests	10/22/09
5	Applicant provides data responses	11/23/09
6	Data response and issue resolution workshop	12/8/09
7	Informational Hearing and Site Visit	12/9/09
8	Technical staff request final comments and conditions from appropriate agencies	12/22-30/09
9	Technical staff complete administrative draft Staff Assessment sections	1/11/10
10	Local, state and federal agency draft determinations AQMD files PDOC (staff should work to get these earlier)	1/21/10
11	Staff Assessment (SA) published	2/18/10
12	Staff Assessment Workshop	3/9/10
13	Local, state and federal agency final determinations AQMD files FDOC (staff should work to get these)	3/21/10
14	Supplement to Staff Assessment prepared	4/21/10
15	Prehearing Conference*	TBD
16	Evidentiary hearings*	TBD
17	Presiding Members Proposed Decision (PMPD)*	TBD
18	Committee Hearing on PMPD*	TBD
19	Addendum/Revised PMPD	TBD
20	Energy Commission Decision*	TBD

* The assigned Committee will determine this part of the schedule.



BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT
COMMISSION OF THE STATE OF CALIFORNIA
1516 NINTH STREET, SACRAMENTO, CA 95814
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APPLICATION FOR CERTIFICATION
FOR THE **ABENGOA MOJAVE**
SOLAR POWER PLANT

Docket No. 09-AFC-5

PROOF OF SERVICE
(Established 10/21/09)

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DECLARATION OF SERVICE

I, April Albright, declare that on October 22, 2009, 2009, I served and filed copies of the attached Abengoa Mojave Solar (09-AFC-5) Data Request Set 1A (nos. 1-93); and Issues Identification Report, dated October 22, 2009. 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: [\[http://www.energy.ca.gov/sitingcases/mariposa/index.html\]](http://www.energy.ca.gov/sitingcases/mariposa/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 or by depositing in the United States mail at Sacramento, CA, with first-class postage thereon fully prepaid and addressed as provided on the Proof of Service list above 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
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docket@energy.state.ca.us

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

Original signed by: _____
April Albright