

CALIFORNIA ENERGY COMMISSION

1516 NINTH STREET
SACRAMENTO, CA 95814-5512
www.energy.ca.gov



DOCKET
08-AFC-1

DATE FEB 11 2009

RECD. FEB 11 2009

February 11, 2009

Dear Librarian:

DOCUMENT HANDLING FOR THE AVENAL ENERGY (08-AFC-1) PROJECT

The enclosed Preliminary Staff Assessment (PSA) contains the California Energy Commission (Energy Commission) staff's draft environmental and engineering evaluation of the Avenal Energy project. Please make this PSA available for those who may wish to be informed about the project. We request that you not allow the PSA or any of its contents to be removed from the library.

To increase accessibility of the document, we ask, if possible, that you cross reference it as a general reference work under the title and author categories, as well as under such subjects as "Energy Commission," "electricity energy/generation," "power plant siting," or any other relevant subject. Please retain the enclosed letter to the public behind the front cover of the PSA.

The Energy Commission's siting process is open to the public and incorporates the input of the public as well as local, state and federal agencies. To facilitate public participation in our review process, the Energy Commission distributes copies of staff documents such as the PSA to public libraries in communities near the proposed project and in major cities throughout the state.

Thank you for your cooperation. If you have any questions, please contact Ivor F. Benci-Woodward, Project Manager, at (916) 654-3911, or by e-mail at: IBenciwo@energy.state.ca.us.

Sincerely,

Original signed by

Eileen Allen, Manager
Siting, Transmission and Environmental
Protection Division

Enclosure

PROOF OF SERVICE (REVISED 02/03/09) FILED WITH
ORIGINAL MAILED FROM SACRAMENTO ON 02/13/09

AA

CALIFORNIA ENERGY COMMISSION

1516 NINTH STREET
SACRAMENTO, CA 95814-5512
www.energy.ca.gov



February 11, 2009

To: MEMBERS OF THE PUBLIC

**PUBLIC PARTICIPATION IN THE REVIEW OF THE AVENAL ENERGY
PRELIMINARY STAFF ASSESSMENT (08-AFC-1)**

The enclosed Preliminary Staff Assessment (PSA) contains the California Energy Commission staff's initial engineering and environmental evaluation of the Avenal Energy (AE) project Application for Certification (08-AFC-1). With the exception of Air Quality, Biological Resources, Cultural Resources, Land Use and Traffic and Transportation, staff finds that the AE project is in conformance with all Laws, Ordinances, Regulations and Standards (LORS). Staffs preliminary conclusions are also that significant adverse direct, indirect or cumulative impacts are not likely to occur. The issues associated with the five technical areas in which staff is continuing its analysis, are summarized as follows:

- Air Quality - Inter-pollutant trade ratios to be resolved between the staff, the applicant and the San Joaquin Valley Air Pollution Control District for sulfur oxides and particulate matter.
- Biological Resources – Mitigation for habitant loss and other potential biological impacts is required by the United States Fish and Wildlife Service and California Department of Fish and Game.
- Cultural Resources – The proposed project would significantly impact Pacific Gas & Electric's Tesla–Midway 230-kV transmission line. Staff is currently investigating whether this impact can be mitigated to a less than significant level.
- Land Use - Mitigation is required for conversion of Prime farmland under the requirements of the California Environmental Quality Act and Guidelines, Appendix G Agricultural Resources section.
- Traffic and Transportation - Construction worker and truck traffic could interfere with local school bus service or compromise the safety of the bus or school children. Mitigation measures could include a flexible traffic control schedule that addresses staff concerns.

On February 21, 2008 Avenal Power LLC, submitted an Application for Certification (AFC) to construct and operate Avenal Energy a nominal 600-megawatt (MW) combined cycle power plant. The AE project would consist of two natural gas-fired General Electric 7FA gas turbines with heat recovery steam generators and one General Electric steam turbine, in the city of Avenal just south of the Fresno County line. The proposed site is located in a predominantly agricultural region of southwestern San Joaquin Valley in western Kings County, just south of the Fresno County line, and two miles east of Interstate 5. The proposed AE project would be built on approximately 34 acres of a 148 acre industrial zoned parcel. The approximate 34 acre project would

include the power plant footprint and ancillary infrastructure connections of 1.2 acres of permanent disturbance will occur due to tower footing for an electrical transmission line and approximately 1.3 acres will be used for an access road.

Transmission Lines: Electricity generated by the proposed project would be delivered by 6.4 miles of new, single circuit, 230 kV transmission line extending from the onsite switchyard to the existing PG&E Gates Substation. The new line would be located on a 120-foot-wide right-of-way.

Roads: Access to the proposed Avenal Energy project would be provided by a road and turn-around on the project site that would connect to the Avenal Cutoff Road.

Gas Line: Natural gas would be conveyed by a new 20-inch diameter, 2.5-mile underground pipeline interconnection from existing lines at the PG&E Kettleman compressor station, located approximately 7,000 feet southwest of the proposed Avenal Energy site. For the proposed route of the new interconnecting line, refer to Figure 1.5-3A of the AFC.

Water Supply and Turbine Cooling: The proposed nominally rated 600 MW Avenal Energy project turbines will require an estimated 20 acre-feet of water annually and 104 acre feet in a maximum use year. To minimize water consumption, the project will incorporate dry cooling, a Zero Liquid Discharge (ZLD) for industrial and waste water and closed loop inlet air chillers to minimize water use.

The primary water source identified in the AFC is the city of Avenal turnout on the San Luis Canal (located adjacent to the site). The city of Avenal has provided a will-serve letter for the use of the San Luis Canal water. An onsite Service Water/Firewater Storage Tank, providing up to 750,000 gallons of water storage, would be provided on site in the event that water sources are temporarily interrupted or water quality is temporarily degraded. Domestic water, supplied by the city of Avenal, would be treated onsite and used for toilets, showers, emergency eyewash and shower stations. Bottled water would be used for drinking. Additional backup water supplies would come from nearby agricultural wells, requiring several new pipelines.

Emission Controls:

Nitrogen Oxides (NO_x) Controls

Each combustion turbine will use dry low-NO_x (DLN) combustors to maintain low levels of NO_x formation while ensuring complete combustion of the fuel. Exhaust from each turbine will enter the HRSG equipped with duct burners and then enter a Selective Catalytic Reduction (SCR) system before being released into the atmosphere. SCR refers to a process that chemically reduces NO_x to nitrogen (N₂) and water vapor (H₂O) by injecting ammonia (NH₃) into the flue gas stream in the presence of a catalyst and excess oxygen. The process is termed selective because the ammonia preferentially reacts with NO_x rather than oxygen. The catalyst material most commonly used is titanium dioxide, but materials such as vanadium pentoxide, zeolite, or noble metals are also used. Regardless of the type of catalyst used, efficient conversion of NO_x to

nitrogen and water vapor requires the uniform mixing of ammonia into the exhaust gas stream and a catalyst surface large enough to ensure sufficient time for the reaction to take place.

Volatile Organic Compounds (VOC) and Carbon Monoxide (CO) Controls

Emissions of CO and unburned hydrocarbons, including VOC, will be controlled with an oxidation catalyst installed in conjunction with the SCR catalyst. An oxidation catalyst system chemically reacts with organic compounds and CO with excess oxygen to form carbon dioxide (CO₂) and water. Unlike the SCR system for reducing NO_x, an oxidation catalyst does not require any additional chemicals.

Particulate Matter (PM₁₀/PM_{2.5}) and Sulfur Oxides (SO_x) Controls

The exclusive use of pipeline-quality natural gas, a clean-burning fuel that contains very little sulfur or noncombustible solid residue, will limit the formation of SO_x and particulate matter. Natural gas does contain small amounts of a sulfur-based scenting compound known as mercaptan, which results in some SO_x emissions when burned. However, in comparison with other fossil fuels used in thermal power plants, SO_x emissions from natural gas are very low. Particulate matter emissions from natural gas combustion are also very low compared with other fossil fuels. The sulfur content of pipeline-quality natural gas is normally less than 1 grain of sulfur per 100 cubic feet at standard temperature and pressure (gr/100 scf).

Wastewater Discharge: A drainage system will route industrial waste water from contained or curbed power block areas to a zero liquid discharge facility where brine slurry would be separated and reduced to dry solids (salt cake) for disposal at a local Class III (non-hazardous) landfill. Treated water would be recycled back to the power production cycle. A sanitary system would collect wastewater from sinks, toilets, and other sanitary facilities and discharge it to a permitted on-site septic system.

The Energy Commission is responsible for reviewing and ultimately approving or denying all applications to construct and operate thermal electric power plants, 50 MW and greater, in California. The Energy Commission's facility certification process carefully examines public health and safety, environmental impacts and engineering aspects of proposed power plants, and all related facilities such as electric transmission lines and natural gas and water pipelines. The issuance of a certificate by the Energy Commission is in lieu of any local, state, or federal permit (to the extent permitted by federal law). The Energy Commission is the lead agency under the California Environmental Quality Act (CEQA), but produces several environmental and decision documents rather than an Environmental Impact Report.

The Energy Commission will conduct a publicly noticed workshop to discuss the PSA on February 18, 2009, in Avenal. This workshop will be separately noticed. Based on the workshop, comments received on the PSA, and additional information that will be gathered, staff will issue a Final Staff Assessment. The public and local, state and federal agencies are encouraged to participate. Written comments should be provided to Ivor F. Benci-Woodward, Project Manager, by Wednesday, March 11, 2009, at the address on this letterhead or by email to cmcfarli@energy.state.ca.us.

If you desire information on participating in the Energy Commission's review of the project, please contact the Energy Commission's Public Adviser, at (916) 654-4489 or toll free in California, at (800) 822-6228 or by email at: pao@energy.state.ca.us. Technical or project schedule questions should be directed to Ivor F. Benci-Woodward, Energy Commission Project Manager, at (916) 654-3911, or by e-mail at IBenciwo@energy.state.ca.us.

The status of the proposed project, copies of notices, an electronic version of the AFC, and other relevant documents are also available on the Energy Commission's Internet web site at: <http://www.energy.ca.gov/sitingcases/avenal>. News media inquiries should be directed to: Media and Public Communications Office (916) 654-4989 or by email at: mediaoffice@energy.ca.us. You can also subscribe to receive e-mail notification of all notices at <http://www.energy.ca.gov/listservers>.

Note: Please retain this letter behind the front cover of the AFC. Thank You.



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 AVENAL ENERGY PROJECT

Docket No. 08-AFC-1
PROOF OF SERVICE
(Revised 2/3/2009)

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DECLARATION OF SERVICE

I, April Albright, declare that on February 13, 2009, I served and filed copies of the attached Notice of Availability; Document Handling; and Request for Agency Comments on the Preliminary Staff Assessment dated February 11, 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:

[www.energy.ca.gov/sitingcases/avenal]. 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. 08-AFC-1

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.

Original signed by _____
April Albright