CALIFORNIA ENERGY COMMISSION
1516 NINTH STREET
SACRAMENTO, CA 95814-5112

July 9, 2008

TO: AGENCY DISTRIBUTION LIST

REQUEST FOR AGENCY PARTICIPATION IN THE REVIEW OF THE SES SOLAR TWO PROJECT, APPLICATION FOR CERTIFICATION (08-AFC-5)

On June 30, 2008, Stirling Engine Systems Solar Two, LLC, (SES Solar Two, LLC) submitted an Application for Certification (AFC) to the California Energy Commission to develop the Stirling Engine Systems Solar Two Project (SES Solar Two Project) on both private land and federal land managed by the Bureau of Land Management (BLM) in Imperial County, California.

PROJECT LOCATION

The SES Solar Two Project site is located primarily on federal land managed by the BLM. The project site is approximately 100 miles east of San Diego, 14 miles west of El Centro, and 4 miles east of Ocotillo. The following sections or portions of sections in Township 16 of the San Bernardino Meridian identify the project site and the planned boundary for development of the SES Solar Two Project.

Within Township 16 South, Range 11 East of the San Bernardino Meridian defined by:

- the portion of Section 7 south of the railroad right-of-way (ROW),
- the portion of the southwest quarter section and the north half of the southeast quarter section of Section 9 south of the railroad ROW,
- the southeast quarter-quarter section of the northeast quarter section and the east half of the southeast quarter section of Section 14 north of the I-8 ROW and east of Dunaway Road,
- the southwest, northwest, and southeast quarter-quarter sections of the southwest quarter section of Section 15, and the southwest quarter-quarter of the southeast quarter section of Section 15,
- the northwest quarter and southeast quarter of Section 16,
- all of Section 17,
- Section 18, excluding the southwest and southeast quarter-quarter sections of the northeast quarter section,
- the northwest quarter and the portion of the west half of the southwest quarter of Section 19 north of the I-8 ROW,
- the portion of Sections 20 and 21 north of the I-8 ROW, and
- the portion of the north half of the northwest quarter section and the northwest quarter-quarter section of the northeast quarter section of Section 22 north of the I-8 ROW.

Township 16 South, Range 10 East defined by:

- the portions of Sections 12, 13, and 14 south of the railroad ROW,
- the portions of Section 22 south of the railroad ROW,
- all of Sections 23 and 24, and
- the portions of Sections 25, 26, and 27 north of the I-8 ROW.

The proposed SES Solar Two Project also includes an electrical transmission line, water supply pipeline, and a site access road. The off-site 6-inch-diameter water supply pipeline would be constructed a distance of approximately 3.40 miles from the Imperial Irrigation District (IID) Westside Main Canal to the project boundary. The water supply pipeline would be routed in the Union Pacific Railroad ROW, or adjacent to this ROW on federal and private lands. Approximately 7.56 miles of the 10.3-mile double-circuit generation interconnection transmission line would be constructed off-site. The transmission line would connect the proposed SES Solar Two substation to the existing San Diego Gas & Electric (SDG&E) Imperial Valley Substation. A site access road would be constructed from Dunaway Road to the eastern boundary of the project site, generally following an existing BLM road.

PROJECT DESCRIPTION

The proposed SES Solar Two project would be a nominal 750-megawatt (MW) Solar Stirling Engine project, with construction planned to begin in either late 2009 or early 2010. Although construction would take approximately 40 months to complete, power would be available to the grid as each 60-unit group of Stirling Engine modules is completed. The primary equipment for the generating facility would include approximately 30,000, 25-kilowatt solar dish Stirling systems (referred to as SunCatchers), their associated equipment and systems, and their support infrastructure. Each SunCatcher consists of a solar receiver heat exchanger and a closed-cycle, high-efficiency Solar Stirling Engine specifically designed to convert solar power to rotary power then driving an electrical generator to produce electricity. The 6,500-acre project site is located on approximately 6,140 acres of federal land managed by the Bureau of Land Management (BLM) and approximately 360 acres of privately owned land.

The project will be constructed in two phases. Phase I of the project will consist of up to 12,000 SunCatchers configured in 200 1.5-MW solar groups of 60 SunCatchers per group and have a net nominal generating capacity of 300 MW. Phase II will add approximately 18,000 SunCatchers, expanding the project to a total of approximately 30,000 SunCatchers configured in 500-1.5-MW solar groups with a total net generating capacity of 750 MW.

The Applicant has applied for a ROW grant for the project site from the Bureau of Land Management (BLM) California Desert District. Although the project is phased, it is being analyzed in this Application for Certification as if all phases will be operational at the same time.

Within the project boundary, the SunCatchers in Phase I require approximately 2,600 acres and those in Phase II require approximately 3,500 acres. The total area required

for both phases, including the area for the operation and administration building, the maintenance building, and the substation building, is approximately 6,500 acres. The 230-kV transmission line required for Phase I would parallel SDG&E's existing Southwest Powerlink transmission line within the designated ROW. A water supply pipeline for the project would be built on the approved Union Pacific Railroad ROW.

PROCESS DESCRIPTION

The SunCatcher is a 25-kilowatt-electrical (kWe) solar dish Stirling system designed to automatically track the sun and collect and focus solar energy onto a power conversion unit (PCU), which generates electricity. The system consists of a 38-foot-high by 40-foot-wide solar concentrator in a dish structure that supports an array of curved glass mirror facets. These mirrors collect and concentrate solar energy onto the solar receiver of the PCU.

The PCU converts the focused solar thermal energy into grid-quality electricity. The conversion process in the PCU involves a closed-cycle, four-cylinder, 35-horsepower reciprocating Solar Stirling Engine utilizing an internal working fluid of hydrogen gas that is recycled through the engine. The Solar Stirling Engine operates with heat input from the sun that is focused by the SunCatcher's dish assembly mirrors onto the PCU's solar receiver tubes, which contain hydrogen gas. The PCU solar receiver is an external heat exchanger that absorbs the incoming solar thermal energy. This heats and pressurizes the hydrogen gas in the heat exchanger tubing, and this gas in turn powers the Solar Stirling Engine.

A generator is connected to the Solar Stirling Engine; this generator produces the electrical output of the SunCatcher. Each generator is capable of producing 25 kWe at 575 volts alternating current (VAC)/60 hertz (Hz) of grid-quality electricity when operating with rated solar input. Waste heat from the engine is transferred to the ambient air via a radiator system similar to those used in automobiles.

The hydrogen gas is cooled by a standard glycol-water radiator system and is continually recycled within the engine during the power cycle. The conversion process does not consume water. The only water consumed by the SunCatcher is for washing of the mirrors to remove accumulated dust and replenishing small losses to the cooling system radiator in a 50-50 glycol-water coolant.

TRANSMISSION

The project would include the construction of a new 230-kV substation approximately in the center of the project site. This new substation would be connected to the existing SDG&E Imperial Valley Substation via an approximately 10.3-mile, double-circuit, 230-kV transmission line. Other than this interconnection transmission line, no new transmission lines or off-site substations would be required for the 300-MW Phase I construction. The full Phase II expansion of the project, and delivery of the additional renewable power to the San Diego regional load center, would require the construction of the 500-kV Sunrise Powerlink transmission line project proposed by SDG&E.

WATER USE AND DISCHARGE

When completed, the Solar Two Project will require a total of approximately 32.7 acre-feet of raw water per year. SunCatcher mirror washing and operations dust control under regular maintenance routines will require an average of approximately 23.3 gallons of raw water per minute, with a daily maximum requirement of approximately 39.2 gallons of raw water per minute during the summer peak months each year, when each SunCatcher receives a single mechanical wash.

Water for Solar Two Project SunCatcher mirror washing, fire water, and domestic use will be provided by the Imperial Irrigation District (IID) via the existing Westside Main Canal. SunCatcher mirror washing requires the water to be demineralized to prevent mineral deposits forming on the SunCatcher mirrors. Processes available for demineralization are reverse osmosis (RO) and ion exchange, with RO being the preferred process. The appropriate technological process will be determined during the environmental review process.

The water treatment wastewater generated by the RO unit contains relatively high concentrations of total dissolved solids (TSD). Wastewater or brine generated by the RO unit will be discharged to a concrete-lined evaporation pond, or equivalent. After the brine has gone through the evaporation process, the solids that settle at the bottom of the evaporation pond will be tested by the applicant and disposed of in an appropriate non-hazardous waste disposal facility.

ENERGY COMMISSION AND BUREAU OF LAND MANAGEMENT JOINT REVIEW PROCESS

The BLM and the Energy Commission have executed a Memorandum of Understanding concerning their intent to conduct a joint environmental review of the project in a single National Environmental Policy Act (NEPA)/California Environmental Quality Act (CEQA) process. It is in the interest of the BLM and the Energy Commission to share in the preparation of a joint environmental analysis of the proposed project to avoid duplication of staff efforts, to share staff expertise and information, to promote intergovernmental coordination at the local, state, and federal levels, and to facilitate public review by providing a joint document and a more efficient environmental review process.

Under federal law, the BLM is responsible for processing requests for rights-of-way to authorize the proposed project and associated transmission lines and other facilities to be constructed and operated on land it manages. In processing applications, the BLM must comply with the requirements of NEPA, which requires that federal agencies reviewing projects under their jurisdiction consider the environmental impacts associated with the proposed project construction and operation.

As the lead agency under CEQA, 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 first step in the Energy Commission's review process is for staff to determine whether or not the AFC contains all the information required by its regulations. When the Energy Commission determines the AFC is complete, staff will begin data discovery and issue analysis phases. At that time, a detailed examination of the issues will occur.

ENERGY COMMISSION'S FACILITY CERTIFICATION PROCESS

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 first step in the Energy Commission's review process is for staff to determine whether or not the AFC contains all the information required by its regulations. When the Energy Commission determines the AFC is complete, staff will begin data discovery and issue analysis phases. At that time, a detailed examination of the issues will occur.

Over the coming months, the Energy Commission and BLM will conduct a number of public workshops and hearings on the proposal to determine whether the proposed project should be approved for construction and operation and under what set of conditions. These workshops will provide the public as well as local, state and federal agencies the opportunity to ask questions about, and provide input on, the proposed project. The Energy Commission will issue notices for these workshops and hearings at least 10 days prior to the meeting.

AGENCY PARTICIPATION

During this data adequacy phase, we request that you review the sections of interest to your agency and determine whether the major issues of concern to your agency have been identified. At this time, we are only concerned that such issues are disclosed, not necessarily that they be discussed in detail. We request that you provide any comments you may have regarding the disclosure of potential issues of concern by July 30, 2008. Please address your comments to Christopher Meyer, Project Manager, 1516 Ninth Street, MS-15, Sacramento, CA 95814, or email to cmeyer@energy.state.ca.us.Your agency may also present its comments and recommendations in person at the Energy Commission's August 13, 2008 Business Meeting. The limited purposes of that meeting will be to determine whether the AFC is data adequate in accordance with our regulations and, if so, to assign a committee of two commissioners to oversee the proceeding.

When the AFC is accepted as data adequate, your participation in the proceeding is encouraged and will allow you to identify and try to resolve issues of concern to your agency. There may be specific requests for agency review and comment during the

proceedings after the AFC has been determined to be data adequate. Local agencies may seek reimbursement for costs incurred in responding to those requests. However, this request for comments during data adequacy is not reimbursable under Energy Commission guidelines.

Enclosed is a copy (CD) of the AFC in electronic format. If you would like to have a hard copy of the AFC sent to you, if you have questions, or if you would like additional information on reimbursement or on how to participate in the Energy Commission's review of the project, please contact Christopher Meyer, Project Manager, at (916) 653-1639 or by email at cmeyer@energy.state.ca.us. The status of the project, copies of notices, 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/solartwo. You can also receive email notification of all project related activities and availability of reports by subscribing to the List Server on the website.

Sincerely,

Eileen Allen, Manager
Energy Facilities Siting and Compliance Office

Enclosure