

1.1 INTRODUCTION

The Panoche Energy Center (PEC) is a proposed simple-cycle power generation project that consists of four (4) General Electric LMS100 natural gas-fired combustion turbine generators (CTGs). The total net generating capacity is 400 megawatts (MW) with each CTG capable of generating 100 MW. The proposed plant will be owned and operated by Panoche Energy Center, LLC (also referred to as the Applicant). The electricity generated by this project would be in support of a contract with Pacific Gas and Electric (PG&E). Section 2.0 describes the contract in more detail.

The Applicant is seeking approval from the California Energy Commission (CEC) to construct and operate a power generation facility within western Fresno County. The GE LMS100 is the first inter-cooled gas turbine system developed especially for the needs of the power generation industry. The LMS100 is designed for cyclic applications with 10-minute starts that provide flexible power generation for peaking and intermediate solutions.

The PEC is located in the unincorporated area of western Fresno County east of the San Benito County line and adjacent to the Panoche Hills. The PEC is adjacent to an existing PG&E substation where the project will interconnect to the PG&E system. The connection will include approximately 300 feet of 230kV transmission line located within the PEC and PG&E substation. Interconnection at this substation minimizes impacts to the PG&E transmission system while providing efficient peaking power.

The generating facility includes four (4) LMS100 natural gas-fired combustion turbine generators, each equipped with water injection to the combustors for reducing the production of oxides of nitrogen (NO_x), a selective catalytic reduction (SCR) system with 19 percent aqueous ammonia injection to further reduce NO_x emissions, and an oxidation catalyst to reduce carbon monoxide (CO) emissions. The total net generating capacity will be approximately 400 MW. Auxiliary equipment will include inlet air filters with evaporative coolers, turbine compressor section inter-cooler, mechanical draft cooling tower, circulating water pumps, water treatment equipment, natural gas compressors, generator step-up and auxiliary transformers, and water storage tanks.

This Application for Certification (AFC) has been prepared in accordance with the CEC's Rules of Practice and Procedure and Power Plant Site Certification (August, 2000), as amended, and is intended to provide:

- A detailed description of the proposed PEC project
- An assessment of the anticipated project impacts on the existing environment
- A discussion of compliance with applicable laws, ordinances, regulations, and standards (LORS)

The remainder of this Executive Summary summarizes the more detailed information presented in the balance of the AFC.

1.2 FACILITY LOCATION AND DESCRIPTION

1.2.1 Facility Location

The project area is located in the unincorporated area of western Fresno County. The site is more specifically described as the Southwest Quarter of Section 5, Township 15 South, Range 13 East, on the United States Geological Survey (USGS) Quadrangle map. The assessor's parcel number (APN) is 027-060-78S.

The proposed plant site will be located on a 12.8-acre site within a 128-acre parcel. The construction area, including laydown and parking, is an 8-acre portion of the 128-acre parcel immediately south of the 12.8-acre plant site. The plant site and construction area are leased by the applicant from the property owners. The 128-acre parcel is currently in agricultural production with pomegranate trees. Offsite improvements associated with the project include a 400-foot access road south of West Panoche Road to the plant site, 2,400 linear feet of new gas pipeline, 300-foot transmission line to tie into the Panoche Substation, and an expansion of the Panoche Substation by approximately 1.1 acres south of the existing substation boundary. The PEC includes the plant site, construction laydown area, and all of the described offsite improvements.

The PEC site is within western Fresno County adjacent to the Panoche Hills and east of the San Benito County line. The project is approximately 50 miles west of the City of Fresno and approximately 2 miles east of Interstate Highway 5. The surrounding area is predominantly used for agriculture with two existing power generation facilities nearby.

1.2.2 Facility Description

The generating facility will consist of four (4) General Electric LMS100 natural gas-fired CTGs, each equipped with water injection to the combustors for reducing production of oxides of nitrogen (NO_x), an SCR system with 19 percent aqueous ammonia injection to further reduce NO_x emissions and an oxidation catalyst to reduce CO emissions. The total net generating capacity will be approximately 400 MW. Auxiliary equipment will include inlet air filters with evaporative coolers, turbine compressor section inter-cooler, mechanical draft cooling tower, circulating water pumps, water treatment equipment, natural gas compressors, generator step-up and auxiliary transformers, and water storage tanks.

Each CTG will generate 100 MW net at summer design ambient conditions. The project will have an annual capacity factor no higher than 57 percent, depending on dispatch to meet summer load demand.

Associated equipment will include emission control systems necessary to meet the proposed emission limits. Stack emission NO_x in normal operation will be controlled to 2.5 parts per million, volumetric dry (ppmvd) corrected to 15 percent oxygen through a combination of water injection in the combustors and operation of the SCR system. The oxidation catalyst will limit normal operation carbon monoxide stack emissions to 6 ppmvd adjusted to 15 percent oxygen.

The plant will connect to the PG&E electrical transmission system at the adjacent Panoche Substation. The connection will require approximately 300 feet of 230kV transmission line located within the plant site and PG&E's substation. Interconnection at this substation minimizes impacts to the PG&E transmission system while providing efficient peaking power for use during peak demand as projected by PG&E.

Refer to the appendices for the engineering design criteria for the project.

1.2.3 Fuel Gas Supply

At full load, each CTG will require approximately 900 MMBtu/hr HHV of natural gas, for a total plant demand of 3,600 MMBtu/hr (HHV). The project will connect to a PG&E high-pressure gas trunk line located east of PG&E's electrical substation through a 16-inch lateral pipeline. The 16-inch high-pressure lateral pipeline will be approximately 2,400 feet in length. The lateral pipeline will connect to the project site along the east side. A new gas metering station and associated on-site piping will be located on the eastern side of the site.

1.2.4 Water Supply and Discharge

Process water for the PEC will be supplied via two onsite supply wells connected to a deep brackish aquifer. The deep well water requirements include fire protection water, plant service water, cooling tower makeup, combustion turbine NO_x injection (after treatment), and combustion turbine inlet air evaporative cooler makeup (partly from treated water). The CTG injection water will be treated using a Reverse Osmosis (RO) system, followed by a mixed-bed deionizer.

Safety water requirements include facility showers, sinks, toilets, eye wash stations, and safety showers in hazardous chemical areas. The safety water will be supplied by a single shallow well and will be treated as necessary to meet all federal, state, and local requirements. Potable drinking water will be supplied by a bottled water purveyor.

Wastewater will be disposed of using a new deep well injection system. The combined wastewater discharge from the plant will consist of cooling tower blowdown, RO rejects, evaporative cooler blowdown, CTG intercooler condensation and effluent from the oil-water separator. Table 3.4-6 in Section 3.4 shows the major waste water streams and the resultant

waste water for disposal. Sanitary wastes drains are sent to a septic tank and leach field in ground that has been determined to be acceptable by a percolation test.

Storm water will be conveyed by overland flow and swales to an infiltration basin located at the southeast corner of the proposed site. The infiltration basin will serve as a storm water treatment facility to manage the quality and quantity of storm water runoff from the proposed site.

1.2.5 Transmission Facilities

The proposed 230kV transmission lines will be overhead conductor design with a transmission line span of 300 feet. There will be two dead-end take off structures. One structure will be at the originating outdoor switchyard located in the new facility and the other structure will be a dead end structure to terminate the incoming 230kV line at the PG&E Panoche Substation.

1.3 PROJECT SCHEDULE

Construction for the PEC is expected to begin in January 2008 following the CEC license to construct. Construction activities will continue through January 2009 and commissioning activities will begin February 2009. It is currently anticipated that the PEC will be on-line at or prior to the date required in the Power Purchase Agreement.

1.4 PROJECT OWNERSHIP

- Owner: Panoche Energy Center, LLC
- Operator: Panoche Energy Center, LLC

1.5 SUMMARY OF ENVIRONMENTAL IMPACTS

The proposed project has the potential to adversely impact the existing environment. In order to limit potential project impacts to a level of insignificance under normal operating conditions, the Applicant has carefully chosen the PEC location and incorporated innovative design measures. Section 5.0 of this AFC assesses environmental impacts according to the following environmental resources:

- 5.2 Air Quality
- 5.3 Geologic Hazards and Resources
- 5.4 Agriculture and Soils
- 5.5 Water Resources
- 5.6 Biological Resources

- 5.7 Cultural Resources
- 5.8 Paleontological Resources
- 5.9 Land Use
- 5.10 Socioeconomic Resources
- 5.11 Traffic and Transportation
- 5.12 Noise
- 5.13 Visual Resources
- 5.14 Waste Management
- 5.15 Hazardous Materials Handling
- 5.16 Public Health and Safety
- 5.17 Worker Safety
- 5.18 Cumulative Impacts

Refer to Section 5.0 for detailed assessments of the environmental impacts of the project on the existing environment.