



## Avenal Power Center, LLC

### Overview

Avenal Power Center, LLC (“APC”) is developing a proposed 600-MW natural gas–fueled, air-cooled electric power plant in the City of Avenal, Kings County, California to serve the ever-growing demand of the San Joaquin Valley of California.

Utilizing highly efficient technology, Avenal Energy will provide enough generating capacity to power 450,000 homes and small businesses. In addition, the project will contribute additional reactive power capability to improve area transmission system voltage, meaning more direct local service to meet electricity demand.

### Location

- Avenal Energy will be located on 25 acres of a 148-acre parcel of land zoned for industrial use in the northeast corner of the City of Avenal, in Kings County, California, approximately 55 miles from Fresno.
- The project will be situated south of the Fresno County line and about two miles east of Interstate 5. Although the proposed project is within the City of Avenal city limits, it is located in an area zoned for industrial use approximately six miles from the city’s residential and commercial districts. Current land use at the project site is irrigated agriculture, as is the surrounding land use.

### About the Project

Avenal Energy will be a 600-MW combined-cycle power plant with two natural gas–fired turbines and one steam generator. The following outlines specific aspects of the plant’s technical operation:

- Water usage – Avenal Energy will be air-cooled (dry cooling process) and will utilize water recycling equipment to reduce the normal average water consumption to less than 12.4 gallons per minute. The City of Avenal would provide untreated water to the project from the City’s water treatment plant adjacent to the site. Groundwater from three local wells would provide a backup water source to the project via two separate pipelines totaling less than 1.4 miles in length.
  - Electric transmission – To minimize visual impact, Avenal Energy’s 230-kV electric transmission line will parallel an existing transmission corridor adjacent to the site, north to the Pacific Gas & Electric (PG&E) Gates substation located approximately six miles away.
  - Natural gas utilization – Natural gas will be used to fuel Avenal Energy. Natural gas is a vital component of the world’s supply of energy and one of the cleanest, safest and most useful of all energy sources.



- Natural gas supply – Natural gas fuel for the plant will be provided through approximately two miles of new pipeline that will connect with an existing PG&E natural gas pipeline that runs parallel to Interstate 5.

## Permitting

On December 16, 2009, the California Energy Commission approved the Avenal Energy project, Appropriate documents have also been filed with the U.S. Environmental Protection Agency and San Joaquin Valley Air Pollution Control District. The project is expected to be fully permitted by early 2011.

## Environmental Considerations

Additional special measures have been taken by Avenal Power Center, LLC to address the potential impact of this essential infrastructure project on the environment.

- Land use – Avenal Energy is planned on land zoned for industrial use and near existing gas, water and electric transmission infrastructure facilities. Because current land use at the project site is irrigated agriculture, as is the surrounding land use, there will be minimal construction-related environmental impacts.
- Water recycling – The proposed project would recycle water to the maximum extent possible through the use of a zero liquid discharge facility (ZLDF) to further minimize water consumption and eliminate wastewater discharge. The ZLDF will purify and recycle process water. This greatly minimizes water consumption and eliminates process-associated wastewater discharge.
- Plant noise – Equipment design includes noise attenuation technology that will not only contribute to a safe working environment within the plant but will also ensure compliance with local noise standards.
- Air quality – Equipment to control emissions to the air will be provided in accordance with the San Joaquin Valley Air Pollution Control District's BACT (Best Available Control Technology) requirements. The project design, construction and operation also includes a concentrated program to control the generation of dust so as not to affect surrounding agricultural operations.

## Implementation Schedule

Plans call for beginning construction in mid-2011, with commercial operation beginning mid-2013.

## Ownership Structure

Avenal Power Center, LLC's Avenal Energy project is being developed, built and will be managed by Macquarie Energy LLC ("Macquarie Energy"), a subsidiary of Macquarie Group Limited ("Macquarie"). Macquarie has significant experience managing energy and utility investments in the U.S. and around the world. Macquarie has a strong track record of responsible management of energy-related infrastructure and essential service assets.

Macquarie Energy is an energy development, trading and marketing company servicing North American electricity producers, mid-sized utilities, industrial users and other large wholesale energy sector participants. In particular, Macquarie Energy specializes in developing and operating state-of-the-art baseload and intermediate load-serving electric supply to meet a growing demand for reliable and economic energy. Macquarie Energy is headquartered in Houston, Texas.