

Case Study



Cogeneration and Infrastructure Improvement Project

Kings County, California



Background

Kings County, California (the County), located in the state's rich agricultural San Joaquin Valley, is home to about 150,000 people with the majority residing in the County seat of Hanford.

The County had previously undertaken a number of efficiency measures to lower its energy costs, including more efficient lighting and a fuel-efficient generator. Cogeneration was viewed as a smart and economic application to ensure reliable power and reduce energy costs. In early 2005, Kings County selected Chevron Energy Solutions (CES) to design and install infrastructure improvements at its Government Center and Public Library in Hanford.

Solution

CES recommended a program of improvements that addressed the County's current and future facility, operational and budgetary needs. The scope of work included installation of a 600-kW cogeneration system, consisting of ten 60-kW microturbines; a 175-ton absorption chiller; and an expanded energy management system.

The cogeneration system's waste heat is used to heat buildings in the winter and cool them in the summer through the use of an absorption chiller, significantly lowering the County's electricity and natural gas costs.

The energy savings resulting from the cogeneration system allowed the County to add other work to the project, specifically roof replacements for the Branch Jail, Agricultural Building, Agricultural Storage, and the Central Plant, as well as the installation of a 70-ton chiller for the Hanford Library to replace the existing chiller, which was in poor condition.

The project included training for three facility staff on the new Capstone microturbine system at the manufacturer's facility. Training on the energy management system was also provided to three staff members.

To help offset the cost of the project, CES assisted the County in identifying and securing over \$600,000 from the Self-Generation Incentive Program administered by Southern California Edison.

PROJECT FEATURES

Self funding

Turnkey project and construction management

Improved efficiency and power reliability

Enhanced indoor environments

Efficient use of taxpayer dollars

Benefits

The \$3 million project is expected to save Kings County about \$190,000 per year and will result in a net positive cash flow of nearly \$2 million over the life of the project.

Beginning with its comprehensive energy audit through design, installation, commissioning and training, Chevron Energy Solutions' goal was to meet the County's objectives for this project. This self-funding program of improvements reduces energy consumption, lowers costs and operating expenses, and provides environmental benefits through the reduction of greenhouse gas emissions and other pollutants.

The expanded energy management system gives facility staff the ability to operate county buildings more efficiently with better control over HVAC equipment. The upgraded system saves on maintenance costs.

CES recommended and installed equipment that offers long-term benefits beyond the term of the financing contract, thus enhancing the savings available to the County. And the additional energy savings

provided funds to pay for new roofs at four buildings and a new air conditioning system at the Hanford Library. These additional improvements would not have been possible without this project.

To learn more about this and other Chevron Energy Solutions projects, contact Ashu Jain at 714 473 7837.

Chevron Energy Solutions partners with institutions and businesses to improve facilities, increase efficiency, reduce energy consumption and costs, and ensure reliable, high quality power for critical operations. Our customers include schools, colleges, universities, and other institutions; federal, state, county and municipal government facilities; and commercial and industrial businesses.



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