Texas A&M University Combined Heat and Power System

Deploying High-Efficiency Combined Heat and Power Technology to Serve a Rapidly Growing District Energy Campus

Project Description

Texas A&M University (Texas A&M), located on a 5,200-acre campus with 22 million gross square feet of facilities, plans to increase its campus square footage nearly 10% over the next five years. Texas A&M will meet the energy load growth associated with this campus expansion by installing an additional 7,500 tons of electric chilling capacity, campus-wide electrical distribution system upgrades, and a 45-megawatt (MW) combined heat and power (CHP) system.

The new high-efficiency, natural gas-fired CHP system will consist of a 34 MW combustion turbine, a 210,000-pound-per-hour heat recovery steam generator, and an 11 MW steam turbine generator. The system will operate as a baseload system to serve 50% of Texas A&M's peak power needs, 65% of electrical energy needs, and 80% of the heating loads (steam for cooling included).

Recipient Organization	Texas A&M University
Location	College Station, Texas
Award Date	November 2009
Expected Operational Date	Began operating in August 2011
Funding	$10 million in U.S. Department of Energy funding from the American Recovery and Reinvestment Act of 2009; $40 million in public-sector cost share
Equipment	45 MW CHP system with a GE LM2500 combustion turbine, heat recovery steam generator, and steam turbine generator

The CHP System at Texas A&M University.
Photo courtesy of Texas A&M University

Benefits for Our Industry and Our Nation

This project will create immediate engineering, manufacturing, and construction jobs, as well as long-term maintenance and servicing positions, strengthening the local economy of College Station, Texas, and the surrounding area. In addition, energy cost savings from the installed CHP system can be invested in the creation and preservation of long-term education jobs at Texas A&M. The system will exceed 75% efficiency, save close to 1 trillion British thermal units (Btu) annually, and reduce carbon dioxide emissions by 143,400 tons per year. The system will also enable Texas A&M to isolate critical campus electrical loads during grid disruptions.

Project Partners

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