Solar® Turbines
A Caterpillar Company

COMBINED HEAT AND POWER PROJECT

Powering the Global Energy Demand

Kent State University Wins Awards Generating Sustainable Power

Location: Kent, Ohio
Project Engineers: Fosdick & Hilmer, Inc.
Installed: 2003 and 2005

To replace an outdated coal fired boiler house, Kent State University built a new combined heat and power (CHP) plant. CHP is a clean, efficient, and reliable approach to generating power and thermal energy from a single fuel source. Working with project engineering firm Fosdick & Hilmer, the university chose to build the plant based on two gas turbine generator sets from Solar Turbines.

The project was executed in two phases. The first phase, a *Taurus*™ 60, was installed in 2003. A *Taurus* 70 generator set, which exhausts into an unfired HRSG, was added in 2005.

The gas turbines can operate on natural gas or diesel fuel and are equipped with Solar's pollution prevention technology - *SoLoNOx*™. The new CHP plant produces about 13 MW of electricity for the campus. In addition, the plant produces up to 133,000 pph saturated steam at 1250 psig. The steam is used for the heating, cooling, and research needs of Kent State.

The Kent State CHP system has been able to achieve nearly 75 percent efficiency and uses 19 percent less fuel than equivalent separate heat and power. The university was recognized in 2007 by the United States Environmental Protection Agency (EPA) with an Energy Star Award.

The *Taurus* 60 and *Taurus* 70 gas turbine CHP systems effectively reduce CO2 emissions by over 37,000 tons per year, the equivalent to planting 10,150 acres of forest or removing the annual emissions from 6,345 cars. "It is a very clean technology, and it is an economic savings for us," says Thomas Dunn, the associate director for campus environment and operations. "By using steam and electricity, we are able to offset the costs for heating the campus. It's kind of like recycling."

In more than 2,000 cogeneration installations worldwide, *Solar*® gas turbines generate clean electrical power from natural gas, while simultaneously producing useful thermal energy tailored to meet your needs for heating, cooling and process steam.

Our combined heat and power packages are specifically designed to limit the impact on the environment, protect people who operate the equipment, and respect people who live nearby. Due to their exceptional overall efficiency, *Solar* gas turbines can provide significant reductions in greenhouse gas emissions by displacing power and heat from more traditional and carbon-intensive sources, while at the same time maintaining very low pollutant emissions levels.

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