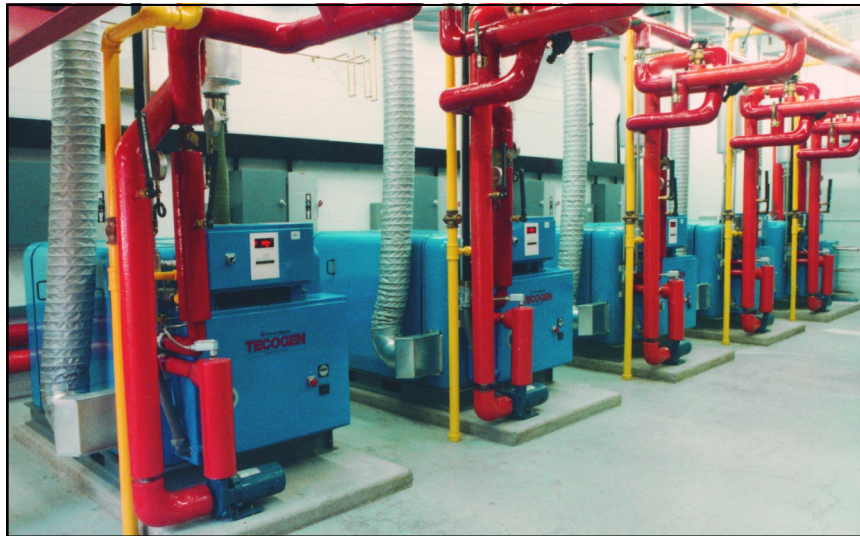


## CM-75 - 75 kW Cogeneration Module



### Waverly Junior-Senior High School, Waverly New York

The one thousand students and staff at Waverly Junior-Senior High School in Waverly, New York study and work in an

environment that is completely lighted, heated, and cooled using power made by its own on-site Tecogen combined heat and power (CHP) plant. School administration, wanting to gain control of energy costs, turned to a distributed generation strategy, moving the school away from their complete dependence upon electric utility power. By generating

The Waverly project won the 1993 Governor's Award for Energy Excellence.

its own electricity and using the thermal energy by-product, the school saves over \$100,000 annual using Tecogen technology.

In August of 1990, the 200,000 square foot, two-story high school went online with their cogeneration

system. Five CM-75 Tecogen cogeneration modules convert natural gas into electrical power and hot water. The Tecogen CM-75 modules each produce 75 kW of electricity along with 470,000 Btu/hr of hot water. The combined 375 kW of electricity produced by the on-site plant runs the lights, computers, motors and all other

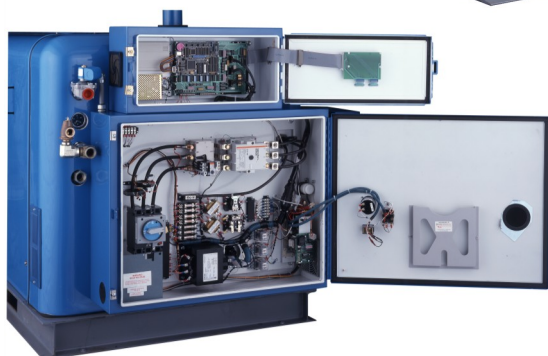
electrically-powered equipment. The hot water by-product of the plant is used for domestic hot water, hydronic space heaters in each room and absorption chillers for air conditioning. Before the installation of the Tecogen CHP system, the Waverly Junior- Senior High School was completely dependent upon electric utilities. Electricity for lighting, space heating, air conditioning and even water heating was purchased from local power plants.

Fran Harper of Hunt Engineers and Architects (Horseheads, New York 607-358-1000) designed the CHP system. Harper and Waverly School Superintendent Walter Cain pursued the idea an on-site CHP system. An economic analysis confirmed a short payback period on the investment and the State Energy Office awarded an Energy Conservation Measure grant of \$365,000. This enabled the school district to go ahead with the Tecogen project.

The first 36 months of operation led to \$309,000 in savings and, according to Building & Grounds

supervisor Walt Robbins, savings are increased as the district refines its programming of the system and the actual energy required to run the system is reduced. The new system also allows the nearly ten thousand people in the Waverly School District to reap the benefits of money used for education that is not literally “going up the chimney.”

The CHP plant is monitored and adjusted by a sophisticated energy management system, which directs the operation of the system as well as the distribution of the electricity and hot water. The plant can also run on LP Gas, ensuring the school district with an option when buying fuel. On October 22, 1993, the Waverly project won the 1993 Governor’s Award for Energy Excellence. This award is given each year by the New York State Energy Office and the New York Power Authority. The award given to the Waverly School District recognizes achievement in energy -efficiency, innovation and education.



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