DELIVERING POWER WHERE FACILITIES NEED IT MOST

With Combined Heat & Power (CHP) as a form of onsite power generation, you control your electricity rates. Learn more about how these businesses use CHP in the recovery of waste heat to produce thermal energy for cooling and heating in their facilities.

Capstone® Turbine Corporation AUTHORIZED DISTRIBUTOR

COMBINED HEAT & POWER

PEARL VALLEY CHEESE

Project: Pearl Valley Cheese is an 80-year old, family-owned company that manufactures and distributes natural cheeses from its facilities located in Coshocton County, OH. The company's 40,000 square-foot operation houses a retail store, administrative offices, cold storage warehousing and manufacturing facilities. The advanced power system installed at Pearl Valley Cheese is powered by a C65 Capstone micro turbine which is capable of producing 65 kW of electricity. The system runs off fuel produced by dairy waste from the cheese production facility. When utilizing digester gas it is important to remove moisture. GEM Energy added a high pressure moisture removal system to make the gas usable with the turbine.

PEARL VALLEY
CHEESE
SWISS FAMILY TRADITION
SINCE 1928
100% NATURAL - PASTEURIZED

Results: The system provides operational savings in excess of $40,000 per year. Methane has a greenhouse gas impact on the atmosphere that is 21 times that of carbon dioxide, and burning methane in a flare completely wastes its energy value. By generating electricity with a waste product, Pearl Valley Cheese is reducing the amount of coal-generated electricity it uses. In addition greenhouse gas emissions are also reduced, helping the company meet its sustainability goals.

HUNTINGTON CENTER ENTERTAINMENT FACILITY

Project: To supplement the facility's heating, cooling and electricity needs. GEM Energy installed a combined heat and power system made up of four C65 Capstone micro turbines with integral hot water heat recovery modules and natural gas compressors, as well as an absorption chiller.

HUNTINGTON CENTER

Results: The system runs year round to produce electricity. In the winter, the exhaust energy is recovered to provide heating for the facility. In the summer, this energy is used to drive the absorption chiller. Under low load conditions, the system generates enough heat and power for the entire facility. Total output is 260 kW electricity, 1,600 MBH heating and 100 tons of cooling.

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CHART YOUR OWN ENERGY DESTINY

When harvesting exhaust energy, a GEM Energy CHP system powered with Capstone micro turbines drives down energy use, reducing your facility's overall operational costs.

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COMBINED HEAT & POWER

TOLEDO MUSEUM OF ART

Project: Install a combined heat and power system featuring four C65 Capstone micro turbines with integral hot water heat recovery modules and remote natural gas compressors. The units interface directly with the existing hot water system and electrical distribution to provide supplemental heat and on-site power.

The existing four Capstone C65 micro turbines have been saving the museum energy and dollars since 2003. Building on this success story, two new Capstone C65s were installed in the Glass Pavilion located across the street from the museum's main building. These turbines produce 130 kW of electric power, and exhaust heat recovery modules that produce a total of 800,000 BTU per hour of hot water. Connected to the hot water stream is a 20-ton absorption chiller.

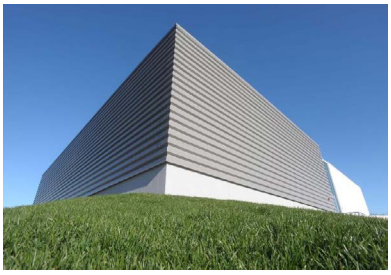
Toledo Museum of Art

Results: Under low load conditions, the turbines generate enough heat and power to meet the loads of the entire facility. Output of the system is 260kW electricity and 1,600 MBH heating. Two turbines are powering the working glass shop in the Pavilion. Hot air from the glass-blowing furnace gets recirculated through the building during the winter which means increased comfort for Museum visitors and employees in this unique all-glass building.

In total the six turbines generate 15 percent of the museum's electrical power and had a relatively short return on investment--four years. Annual net utility savings are in excess of $87,000.

SYRACUSE UNIVERSITY DATA CENTER

Project: GEM Energy was chosen to design and build one of the world's most energy efficient computer data centers. The tri-generation system includes 12 Capstone C65 Hybrid UPS turbines that run off natural gas, function as uninterruptible power and produce 65 kilowatts each. The center produces its own heating and cooling by recovering the turbine waste heat. Absorption chillers are used to make cold water to directly cool the computers.



SYRACUSE UNIVERSITY

Results: The data center has its own onsite power plant, and estimates that it uses 50 percent less energy than a typical data center of its size. It is able to operate off-grid due to the tri-generation system. Syracuse University's data center is one of the "greenest" data centers in the world.

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