

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 higher education facilities use CHP in the recovery of waste heat to produce thermal energy for cooling and heating in their facilities.



COMBINED HEAT & POWER

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.

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.



SYRACUSE
UNIVERSITY

SUNY COLLEGE OF ENVIRONMENTAL SCIENCE AND FORESTRY (ESF)

Project: As part of the SUNY ESF campus expansion, the new, high-performance Gateway Center building provides a centerpiece for campus activities. The building is utilizing renewable energy to produce its own power and create a carbon-neutral facility. The GEM Energy CHP installation consists of three C65 Capstone micro turbines that will provide 195 kW of electric power and an exhaust fired steam generator to produce steam for heating. The micro turbine CHP system complements a biomass (wood chip) boiler system that produces high-pressure steam generating electricity via a steam turbine before it is used to heat campus buildings.

Results: Gateway Center and four other buildings on campus will benefit from both thermal and electrical energy. This system is expected to provide approximately 65 percent of campus heating needs and 20 percent of campus electrical needs while reducing the campus-wide carbon footprint by 22 percent.

