

Integrated Energy Systems Industrial Gas Turbines

Objectives

- Prototype Integrated Energy System (IES) will produce
 - Electricity to local area and electric grid
 - Chilled water for air conditioning and inlet air cooling for gas turbine
 - Space heating
- Fuel efficiency: 70–80%
- An integrated control system will allow ease of operation and remote monitoring
- Modular designs will be adaptable to meet various capacity requirements, space limitations, and grid interconnection
- Reliability will improve with proven on-site generation technologies that isolate facilities from grid power quality problems and outages



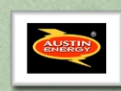
Broad absorption chiller



Solar gas turbine with exhaust ducted to in-line absorption chiller

Burns & McDonnell Project

Burns & McDonnell teamed with Broad USA, Solar Turbines, and Austin Energy to develop a modular system that integrates a 5-MW combustion turbine generator with an advanced waste-heat-fired 2,500-ton absorption chiller. This IES has provided supplemental power and cooling for an office, retail, and high-tech industrial park in Austin, Texas, since June 14, 2004.



Honeywell Project

Honeywell Labs teamed with Broad USA, Chelsea Group, and I. C. Thomasson to demonstrate a 5-MW turbine generator combined with a 1,000-ton absorption chiller with advanced waste-heat-fired design. Turbine exhaust can also be used to produce steam. The packaged CHP system with supervisory controls will maximize the cost-effectiveness of Ft. Bragg Army Base's energy choices.



IES provides cooling, heating, and power to barracks



U.S. Department of Energy

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Office of Distributed Energy