

New Partnership Pursues Distributed Energy Solutions

Created as a partnership to increase the use of distributed energy across business and government, the National Accounts Energy Alliance (NAEA) unites DOE, ORNL, the American Gas Foundation, the American Gas Association, natural gas utilities, the Gas Technology Institute, and national commercial chains in pursuit of energy benefits. The partnership is the first of its kind to assist energy managers who offer their facilities as test sites for distributed energy applications.

Emphasizing energy-intensive industries with nationwide operations, NAEA coordinates tests and assessments of energy-related equipment in varied operational settings. The work is carried out under a subcontract with ORNL. NAEA offers its members a cost-effective way to develop projects to install, test, and assess energy-efficient technologies. The goal is to provide interested parties with information on integration of technologies to the grid and to building loads and knowledge about integrated energy systems applications.

The work holds great promise because of the involvement of well-known national retail, restaurant, grocery, hospitality, and health care chains with the potential to propel technology solutions into broad markets. Reports from field assessments of representative facilities will provide information for thorough case studies and national conferences and exhibitions. The web will be a major communication vehicle. Information will be generated through 2005.

The current NAEA projects include the following.

Russell Development, Portland, Oregon

Utility: NorthWest Natural

Application: General office building

Uniqueness: First-of-kind installation in the United States of a microturbine/hot-water-activated absorption chiller applied to air-conditioning an office building.

Technologies: Capstone, 27-kW microturbine, Unifin heat-recovery heat exchanger, and 10-RT Yazaki hot-water-activated absorption chiller.

Status: Initial data collection is complete—parasitic power is about 10% of total output; average net efficiency is about 20–22%. See www.bpa.gov/Energy/N/projects/200market/.



H-E-B, San Antonio

Utility: City Public Service of San Antonio

Application: Onsite power. Cooling, heating, and power (CHP) and liquid refrigerant subcooling will be tested and verified.

Uniqueness: Cutting-edge CHP/refrigeration research. May also combine critical black-start capability for the first time.

Technologies: Bowman/Elliott 80-kW microturbine and 50-RT



broad absorption chiller in a first-generation system.

Status: Site agreement, initial design completed.

McDonalds, Tampa, Florida

Utility: Tampa Electric

Application: Involves critical latent load removal, onsite power, and demand-reducing food service equipment.

Uniqueness: First-of-kind dehumidification system potentially able to reduce peak load and match building latent load. New engine technology with potential to reduce cost.

Technologies: Desiccant dehumidifier developed by DOE and ORNL in partnership with SEMCO and a new GENERAC 50-kW auto-derivative gas engine.

Status: Scheduled for second quarter of 2003.



A&P, Long Island, New York

Utility: Long Island Power Authority

Application: Onsite power generation with recovered thermal energy to regenerate desiccant dehumidifier, reducing operating costs of dehumidifier and winter heating.

Uniqueness: Dehumidification of refrigerated case aisles coupled with onsite power energy recovery. First-of-kind CHP dehumidification/heating system applied to a supermarket.

Technologies: Capstone 60-kW microturbine, Unifin heat-recovery heat exchanger, and Munters desiccant dehumidifier.

Status: Data analysis under way. Negotiations progressing on interconnection agreement.



Albertsons/Cinemark, Dallas

Utility: Texxon Utilities

Application: Two special Munters condenser-regenerated desiccant rooftop units, a microturbine, and absorption chiller for refrigeration sub-cooling.

Uniqueness: System offers complete power/thermal integration with no cooling tower and with the capability to cool below freezing.

Technologies: Ingersoll Rand 70-kW microturbine with integrated ammonia/water absorption chiller.

Status: Construction delayed by economic downturn. A possible alternative application at a Cinemark theater involves a Hess-Microgen generator and several desiccant units.

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