NORTHEAST

U.S. DOE

CHP TECHNICAL ASSISTANCE PARTNERSHIPS

Gurwin Jewish Nursing & Rehabilitation Center

Three 150 kW CHP Systems

Project Overview

Gurwin Jewish Nursing & Rehabilitation Center has a 64 acre campus on Long Island, which includes a 460-bed nursing home and 200 assisted living apartments.

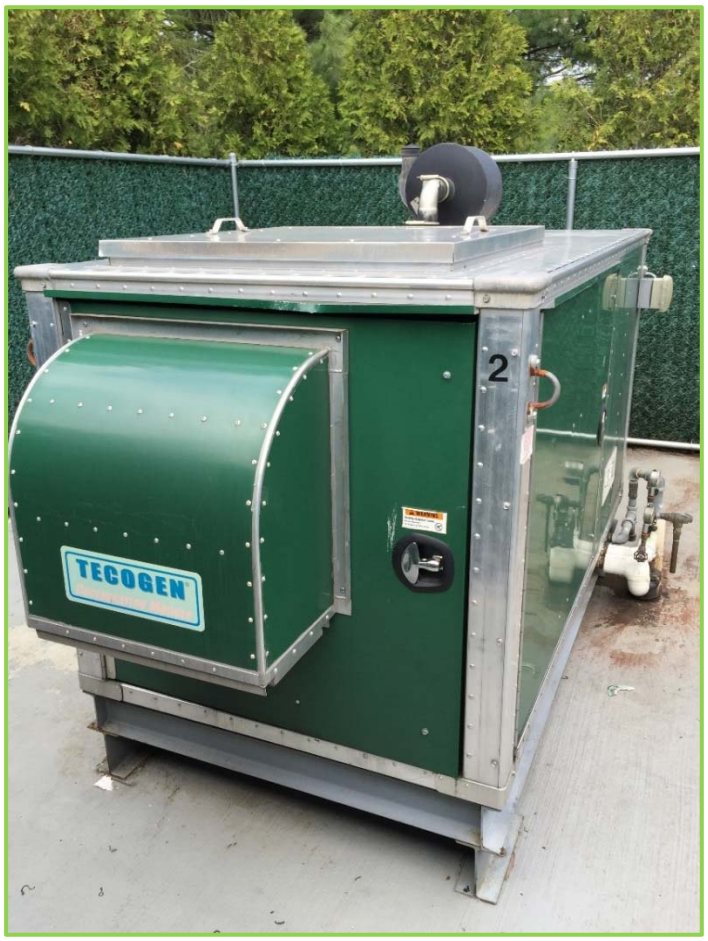
Several years ago, Gurwin staff researched energy efficiency and alternative energy measures that could reduce operating costs in their facilities, including combined heat and power (CHP), geothermal and solar systems. Analysis showed that CHP would be the most cost-effective option and provide significant cost savings, so Gurwin hired All Systems Cogeneration to install three CHP systems on their campus in 2010.

The highly efficient CHP systems have operated very successfully, generating about one third of the facility's electricity needs and a substantial amount of the hot water needed for their commercial kitchen, domestic hot water, and space heating. With net annual savings of approximately $375,000, Gurwin's investment in CHP paid for itself in approximately three years.

Quick Facts

LOCATION: Commack, NY
MARKET SECTOR: Nursing home & assisted living
FUEL: Natural gas
EQUIPMENT: 3 CHP systems, each with 2 Tecogen CM75 CHP modules with reciprocating engines
OPERATION: 24/7
SYSTEM CAPACITY: 450 kW total for 3 systems
USE OF THERMAL ENERGY: Domestic hot water, space heating
ANNUAL ELECTRICITY GENERATION: 3.7 MWh
ANNUAL SAVINGS: $375,000
SIMPLE PAYBACK PERIOD: 3 years
BEGAN OPERATION: 2010

Gurwin Jewish Nursing & Rehabilitation Center



Tecogen CHP Module

System Design and Operation

All Systems Cogeneration installed three CHP systems at Gurwin in 2010. Each system serves a different part of the facility:

- One system is near the nursing home's kitchen. Its thermal output is used to heat water for use in the kitchen and for domestic hot water use throughout the building. It is supplemented and backed up by two existing gas-fired boilers.
- A system in another area of the nursing home is used primarily for space heating during the heating season, supplemented by two gas-fired boilers. During the rest of the year it provides domestic hot water, along with two gas-fired water heaters.
- In the assisted living building, a CHP system is used for space heating and domestic hot water, supplemented by gas-fired boilers.

Each of the CHP systems consists of two Tecogen CM75 modules, which are fueled with natural gas. These packaged units include a reciprocating engine, an electrical generator, equipment to recover heat from the engine's exhaust, electrical controls, emissions controls, and a modem for remote monitoring and data logging. Each system has a radiator to vent any unused heat.

The installed cost for each CHP system was $455,000. Gurwin received a $100,000 incentive from their utility company for each system.

The systems operate continuously year round, and downtime for maintenance has been very limited. Gurwin has a service contract with All Systems Cogeneration, which costs a total of $90,000 annually and includes routine maintenance and remote monitoring of system performance.

System Benefits

In total, Gurwin's CHP systems generate 3.7 MWh each year, or approximately one-third of the electricity needed at the facility, as well as a substantial amount of its hot water and space heating. After fuel and maintenance costs, the facility saves approximately $375,000 annually. With these savings, the simple payback period for Gurwin's investment in CHP was only three years.

"The CHP systems have been fantastic. They're very rarely down."

- Ralph Smith, Director of Engineering

For More Information

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