

## Gas Chiller CHP, Demonstration Project

Install a 200-ton natural-gas fired engine chiller for space heating, domestic hot water (DHW), and air conditioning.

### BACKGROUND

Geneva General Hospital, of Geneva, New York, encompasses approximately 350,000 sq ft (a major portion of that, namely, a 150,000 sq. ft addition constructed in 1996). Prior to construction of the 1996 addition, the existing self-generation electricity system at Geneva General Hospital worked well. However, due to the increased demand resulting from construction of the 1996 addition, the existing self-generation electricity system is now undersized. Instead of increasing the electric-generation capability of the existing system, Geneva General Hospital will reduce the demand for electricity by installing a new natural-gas engine-driven rotary chiller, and reducing the use of existing electric-driven chiller equipment. Heat will be recovered from the new natural-gas engine-driven chiller and beneficially used, therefore, the new natural-gas engine-driven chiller will function as a Combined Heat and Power (CHP) system, furnishing both recovered heat and mechanical (refrigeration) capacity.

### OBJECTIVE

Through this project, Geneva General Hospital will install and demonstrate the efficiency of a CHP system consisting of one (1) 200-ton natural-gas-fired engine-driven chiller. The recovered heat will be beneficially used for space heating, air conditioning and domestic hot water (DHW).

### DESCRIPTION

Geneva General Hospital will install, commission, operate, monitor, and report on the performance of a CHP System consisting of one (1) 200-ton natural-gas-fired engine-driven chiller and Balance of Plant (BOP) including a system to provide recovered heat to be beneficially used for space heating, air conditioning and domestic hot water. IEC Engineering PC, of Rochester, New York, a design and consulting firm with over 20 years experience with all forms of building mechanical and electrical systems and CHP, will provide technical assistance for this project.

### BENEFITS

Technology transfer and publicity will emphasize wide dissemination of the project results, and will include a lobby display which graphically depicts the CHP system in layman's terms, self-guided tours for local business people and potential users of the technology, and promotion of successes on IEC Engineering's website. This configuration and application for CHP offers a high potential for replicability. This project is forecasted to provide peak load savings of approximately 100 kW.

<b>Funding</b>	<b>Encumb to Date</b>	<b>Pending</b>	<b>Total Anticipated</b>
Geneva Regional Health System, Geneva General Hospital	\$132,491.00	\$0.00	\$132,491.00
NYSERDA	\$132,491.00	\$0.00	\$132,491.00
<b>TOTALS</b>	<b>\$264,982.00</b>	<b>\$0.00</b>	<b>\$264,982.00</b>

<b>Manager</b>	Levy, Dana
<b>Contracts</b>	STD-6839
<b>Contractors</b>	Geneva Regional Health System, Geneva General Hospital
<b>Technologies</b>	Cogeneration
<b>Cities</b>	Geneva
<b>Counties</b>	Ontario