

Installation and Demonstration of a DG/CHP System

Background

Proctors is currently renovating the 2,700 seat theater (constructed in 1926 - National Register of Historical Sites) and developing a 313,000 sq. ft. building consisting of four (4) buildings in downtown Schenectady. The Arts Center and Theater of Schenectady is responsible for the \$23 million redevelopment of the Proctor Theater block of buildings. The site of the planned redevelopment is part of Schenectady County's Empire Zone. The existing Proctor Theater is currently heated with a boiler plant and cooled with various distributed cooling systems. Most of the equipment is old and needs replacement. A new central boiler and chiller plant is being designed for the renovated facility.

Objective

The project involves the installation and demonstration of a 240 kW CHP System at the Art Center and Theater of Schenectady, NY

Description

The electric capacity of the CHP plant will be 240 kW (Four (4) 60 kWe Capstone microturbines) and will supply the base electric, heating and cooling load all year around and minimize the standby charges (the CHP plant capacity represents 13.8% of the peak electric demand). The CHP facility will be integrated with a new central boiler and chiller plant that is currently being designed. The boiler plant will include steam boilers equipped with economizers. The steam will be converted to hot water for space heating through a heat exchanger. During the summer, steam will also be used to drive an absorption chiller.

Benefits

This project is forecasted to provide a peak reduction of 240 kW, and result in more than \$500,000 in annual net energy savings for the host site facility. It is forecasted that approximately 70% of the turbine's reject heat will be beneficially utilized.

Funding	Encumb to Date	Pending	Total Anticipated
Art Center and Theater of Schenectady, NY	\$589,200.00	\$0.00	\$589,200.00
NYSERDA	\$392,800.00	\$0.00	\$392,800.00
TOTALS	\$982,000.00	\$0.00	\$982,000.00

Manager	Borowiec, Joseph C.
Contracts	STD-8586
Contractors	Art Center and Theater of Schenectady, NY
Cities	Schenectady
Counties	Schenectady