



Solar Centaur® 50

Integrated Energy System in Hospital (Eastern Maine Medical Center)

Benefits of Integrated Energy Systems

Capital Cost Reduction

Pre-engineered systems can cut CHP system capital costs by 15% to 30%.

Shorter & Less Expensive Installation

IES can reduce CHP system installation time by as much as two-thirds, and provide corresponding installation cost savings.

Replicability

System designs are suitable for multiple applications in facilities around the country.

Optimize Facility Energy Use

Pre-engineered systems allow facility operators to manage power generation, cooling, and heating to optimize energy use as well as reduce electricity use during peak periods.

Simplified Systems

Other projects demonstrate the use of exhaust-fired absorption chillers to eliminate the need for steam/hot water generation equipment.

Operational Cost Savings

Projected to save \$1.1 million annually in energy costs with a payback of 4 years or less.

Program Contact:

Jan Berry
Oak Ridge National Laboratory
(865) 241-1939
berryjb@ornl.gov
<http://www.eere.energy.gov/de/>

Project Overview

Eastern Maine Medical Center (EMMC), in Bangor, Maine, will utilize a Solar Turbines gas turbine to generate 4.4 MW of electricity, 24,000 lb/hour of steam, and drive a 500 ton absorption chiller. Partners are Solar Turbines, Cianbro Corporation, Vanderweil Engineers, University of Maine, and International District Energy Association. As a result of this project work, the new CHP system will address the following concerns:

- High energy costs
- Fuel use diversity
- Need for additional chilled water capacity
- The need to deliver services under any climatic condition
- Utility reliability
- Diverse thermal heating load profile
- Emissions compliance

Benefits:

- Reduced emissions.
- Increased thermal and heating capacity and enhanced emergency backup power.
- Savings will directly reduce healthcare costs.
- Power availability during adverse weather conditions



Objectives

- Design a system that responds to a specific energy concern for healthcare – reliability.
- Use an integrated, modular "power island" concept to reduce field labor costs and installation time, while increasing the opportunity for replication.
- Design a system that could be replicated for similar applications with a minimal amount of balance of plant and integration costs.
- Structure the CHP system using advanced information technology to aid in information dissemination.

Project Contact:

Jeff Mylen
Project Manager, Eastern Maine Medical Center
(207) 973-7786 jmylen@emh.org

