



## PROJECT INFORMATION

### Program Participant

- **Jersey Shore University Medical Center**

### Location

- **1945 NJ-33  
 Neptune City, NJ 07753**

### Project Contact

- **Robert Adams, FACHE  
 Vice President of  
 Operations  
 Jersey Shore University  
 Medical Center**

### Technology

- **Combined heat and power (CHP) reciprocating engines**

### Total Project Cost

- **\$3,888,805**

### NJCEP Incentives

- **\$1,000,000 through the  
 CHP program**

### Estimated Annual Savings

- **15,200 MWh**
- **606,550 therms**
- **\$2,892,703**

### Project Payback

- **1 year**

*Project information, savings and environmental benefits were provided by the project contact.*

## **Hospital Places Co-generation Units at Center of Major Expansion, Providing Power Through Superstorm Sandy**

### Background

Jersey Shore University Medical Center, founded in 1904, is a teaching hospital in Neptune, New Jersey ranked among the top 10 hospitals in the state. Jersey Shore has a long history of being the first in the region to reach major accomplishments. The hospital was the first to open a children's hospital in Monmouth and Ocean counties. In 1990, it opened the region's first cardiac surgery program.

The accomplishments are not limited to patient care. In 2010, Jersey Shore was the first hospital in New Jersey — and first of its size on the East Coast — to receive the prestigious Leadership in Energy and Environmental Design (LEED) Gold certification. The LEED certification recognizes Jersey Shore for integrating energy efficiency and environmental features within its new Northwest Pavilion, a 433,400 square-foot expansion and renovation project completed in 2009.

Among those features, the \$300 million expansion included installation of two new gas-fired co-generation units. The combined heat and power (CHP) units were installed with help from financial incentives through *New Jersey's Clean Energy Program™*.



*When Jersey Shore University Medical Center built its Northwest Pavilion, the expansion included two new gas-fired co-generation units, financed with the help of a \$1 million New Jersey Clean Energy Program incentive.*

### Solution

When design began on the Northwest Pavilion, environmental features were considered, but the administration's top priority was patient care. Hospital officials were focused on building a new trauma center, a four-story diagnostic and treatment building, and six surgery suites.

But as the magnitude of the project grew, energy demands of the hospital grew as well. Officials anticipated the expansion would result in millions of dollars in additional utility expenses each year.

Project engineers proposed building a co-generation utility plant as part of the new pavilion. This would significantly reduce the



# Jersey Shore University Medical Center

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energy costs as CHP units produce both electricity and heat, efficiently converting wasted exhaust from the reciprocating engines into steam heat.

Upon realizing the energy-savings potential offered by co-generation, Jersey Shore decided to increase the project size to two units. The hospital can now produce, on average, 3.8 MW of electricity and 1,200 tons of exhaust heat on-site.

Installing CHP units cost the hospital nearly \$3.9 million. Yet the equipment's upfront cost was recovered within only a year, thanks to \$1 million from *New Jersey's Clean Energy Program* and \$2.9 million in annual energy savings. "Every day the co-generation units are running and making electricity for us, it saves us a couple thousand dollars," said Vice President of Operations Robert Adams.

The energy savings also allow Jersey Shore to reduce its environmental impact. The hospital avoids about 14.6 million pounds of carbon pollution each year. "We wanted to do things in an environmentally conscious way and in an efficient way," Adams said. "It's us doing our part."

### Resiliency

Beyond generating electricity and heat, an important component of the Jersey Shore energy plan is to ensure uninterrupted operations in the event of a power outage.

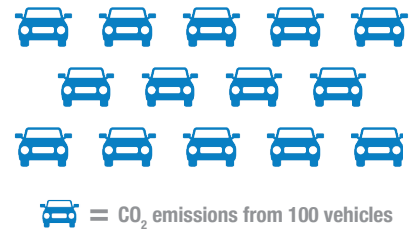
A few years after the CHP units were up and running, the hospital was put to the test in October 2012 when Superstorm Sandy ravaged the area. Massive power outages were reported in the surrounding region.

Jersey Shore University Medical Center  
 Combined Heat and Power Project

### Estimated Annual Emissions Reduction

**14.6 million pounds of CO<sub>2</sub>**

Equivalent to the annual CO<sub>2</sub> emissions  
 produced by 1,394 passenger vehicles



Jersey Shore responded proactively by disconnecting from the power grid, relying solely on the co-generation units and the back-up generators. The hospital remained open, offering a refuge for those in the community needing electricity for their medical equipment or their phones. For those in need of food, the hospital was among a select few still serving meals, with two restaurants on the campus.

"Having the co-generation units allows us to be more self-sufficient," Adams said. "We really became a beacon for the community because we had power."

