

SOLUTION AT A GLANCE: HACKENSACK MERIDIAN HEALTH: UTILITY FINANCING PARTNERSHIP FOR HOSPITALS

SECTOR

Commercial

BARRIER

Partnering with my utility, Financing or paying for a project

TOOL TYPE

Financing

BUILDING TYPE

Healthcare, Hospital

BUILDING SIZE

Greater than 100,000 square feet

TECHNOLOGY

HVAC, Chiller Systems, Controls, Cooling Systems, Heating Systems, Rooftop Unit, Lighting, Interior

OVERVIEW

Hackensack Meridian Health recognized opportunities to create efficiencies in the hospital operations to reduce utility costs and reduce the hospital's carbon footprint, but faced a barrier in funding for the efficiency projects. In search of a financing option with minimal capital investment from the hospital, Hackensack Meridian Health entered a strategic partnership with its utility company, Public Service Electric & Gas (PSE&G), a wholly owned subsidiary of Public Service Enterprise Group. PSE&G offers a Hospital Efficiency Program that allocates upfront funding for hospitals to implement energy efficiency projects with a buy-down incentive for certain efficiency measures and an on-bill repayment structure at zero percent interest. Once the hospital has repaid the designated portion of the investment, continuous utility savings are invested back into the hospital. The program starts with a free energy audit of the hospital to identify cost-effective efficiency upgrades.

The strategic partnership provided upfront investment for Hackensack Meridian Health to complete technical upgrades in a two-phased approach. Phase I, including the installation of a 1500 T chiller, commenced with implementation-ready energy efficiency improvements while a focused study identified additional opportunities. Phase II then proceeded to install the main chiller plant upgrades identified in the study. A third phase to complete campus-wide interconnections into the main chiller plant is now underway. Hackensack Meridian Health implemented several energy efficiency measures as part of the partnership, including:

- Installation of a 1,500 ton chiller
- Lighting upgrades including 9,600 fluorescent lighting fixtures, 1,100 occupancy sensors, and LED lighting in the parking garages
- Improved monitoring of natural gas boilers
- Main chiller plant upgrades including new cooling towers, pumps, header piping, and controls
- Removing the research building's RTUs and redirecting the building to the main chiller plant

The overall investment from PSE&G totaled \$10.2 million, 43 percent of which Hackensack Meridian Health repaid on their utility bills within 36 months of the initial investment. Hackensack Meridian Health's repayment percentage was determined based on the dollar savings experienced from the energy saving measures. The two-phased project is estimated to save \$1.06 million annually in utility costs and reduce consumption by 4,219,000 kWh and 218,000 therms annually. Since the start of PSE&G's Hospital Efficiency Program in 2009, 33 hospitals have participated in making energy efficient improvements that will cumulatively save \$13.1 million annually in utility costs (at the time of this writing).

Hackensack Meridian Health's savings to-date through these initiatives are approximately \$1.7 million. The plan was to have Phase 1 repaid in Q1 2017 and Phase 2 in Q1 2019.

The calculation of the 43 percent paid by Hackensack Meridian Health was determined by:

1. Calculating the simple payback in years (cost divided by savings);
2. Subtracting the number of years of payback that PSE&G will cover through an incentive (maximum covered by PSE&G is seven years; minimum required to be covered by the customer is two years); and
3. Dividing the total number of years in the simple payback found in step 1 by the remaining number of years to get the percentage of the project cost that the customer will repay.

Example: If the simple payback for a project is 12 years (step 1), PSE&G would cover the maximum of seven years of payback (step 2), and the customer's portion to repay would be five years divided by 12 years (step 3), or 42 percent. PSE&G would provide an incentive equal to 7/12 of the project cost, or 58 percent.

For more innovative funding solutions for healthcare partners, check out:

- Ascension's [Facilities Infrastructure Pool Implementation Model](#)
- Cleveland Clinic's Green Revolving Fund [Presentation and Case Study](#)

- University of Pittsburg Medical Center's (UPMC) Centralized Energy Management and Capital Set-Aside Fund Implementation Model