

CASE STUDY: CHILLED WATER SYSTEM

SYSTEM TYPE: Cooling Towers, Chillers, Pumps

PROJECT FINANCIALS

- Total Turnkey Installed Cost: \$ 755,601
- Annual Energy Cost Savings: \$ 133,020
- Simple Energy Funded Capital Payback: 3.8 years
- Average Project IRR: 22%

MANUFACTURING & INJECTION MOLDING Facility Installs New Chiller, Pumps, VFDs and Heat Exchangers—Saves \$133,000/year in Energy Costs

System Description

- Four water-cooled chillers totaling 1470 tons capacity
- Primary/Secondary pumping configuration
- Four cooling towers with common headers
- System utilized manual control
- System provide chilled water for process and HVAC

System Opportunities

- Existing system had operational and equipment problems and was operated manually
- Out of the four chillers installed in the system, one had a failed compressor and one was leaking refrigerant
- The older chillers were inefficient and the controls, piping, and pumping were not optimal
- The project replaced equipment that was past its useful life, improved the efficiency and operation of the system, and lowered the O&M costs of the system.

Project Description

- Reconfigured the piping and pumping to operate more efficiently
- Installed new 500 ton chiller which was almost twice as efficient
- Installed new pumping and VFD on pump motors
- Installed a plate & frame heat exchanger as a water side economizer
- Integrated plant operations into a new control system that was being installed as a separate project.

Project Benefits

- New 500 ton chiller, chilled water pumps, pump motor variable speed drives, and plate and frame heat exchanger
- Reconfiguration of system pumping
- Optimization of operation of the system
- Reduction in energy usage
- Reduction in O&M costs

Plant Profile

- Manufacturing facility, injection molding, 410,000 sq. ft.
- Production areas, administrative offices, warehouse area
- Facility utilizes a combination of a central plant and distributed roof top air conditioning units for process and space cooling

Key Benefits

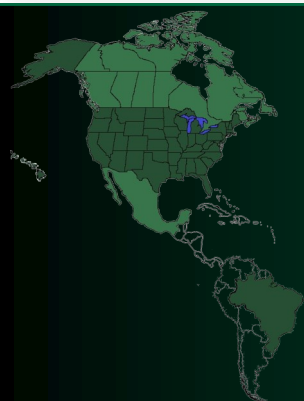
Net Energy Savings Capital	\$ 250,000
Annual Cost Savings	\$ 133,020
Carbon Reductions	N/A
Payback	3.8 Years
Project IRR	22%

Financial Data

Investment	\$755,601
System	Cooling Tower, Chillers, Pumps
Life Expectancy	N/A
Incentives/Rebates	N/A
Payback Period	3.8 Years



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