New Jersey's Clean Energy PROGRAM™
Your Power to Save

Success Stories

Novartis Pharmaceuticals Corporation: A Comprehensive Energy Program

PROJECT INFORMATION

Organization
- **Novartis Pharmaceuticals Corporation**

Location
- **East Hanover, NJ**

Project Contact
- **Farley Hunter, Associate Director, Energy and Environment**

Technologies
- **PV Solar**
- **Steam-Driven Back Pressure Turbine**
- **Lighting**
- **Rooftop Air Handlers**
- **Design Support for Chiller Evaluation**

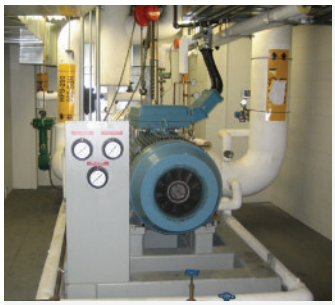
NJCEP Incentives
- **$482,000 Solar Renewable**
- **$196,410 Combined Heat & Power Program**
- **$5,000 Design Support**
- **$11,400 Lighting Retrofit**

Total Project Cost
- **$1,776,710**

PROJECT SAVINGS

Estimated Annual Savings
- **520,000 kWh from solar and high-efficiency lighting retrofit**
- **500,000 kWh grid power replaced by self-generation and use of process steam**
- **$167,000 energy and demand expenses**

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



A steam-driven back pressure turbine provides 550 kW of electrical power and low pressure steam for use in the pharmaceuticals research process.

"The NJ Clean Energy Program provides an important source of funding, allowing NPC to evaluate and implement technologies that reduce our carbon footprint and significantly lower our operating costs."

Farley Hunter
Associate Director, Energy and Environment
Novartis Pharmaceuticals Corporation

Background

Novartis is recognized worldwide for the innovative medicines it provides to patients, physicians and healthcare organizations. The Group's U.S. Pharmaceuticals Headquarters Company, Novartis Pharmaceuticals Corporation (NPC) includes 2.6 million square feet of interior space located on 200 acres in East Hanover, NJ.

Challenge

Beyond the need to control energy costs, Novartis has signed the Kyoto Protocol, thus making a commitment to achieve a 5% reduction in greenhouse gas emissions from its worldwide operations by 2012. Living up to that commitment requires a significant investment – for design engineering, as well as for the installation of the recommended measures.

Solution

A key component of the NPC's Energy Program called for a 424 module solar array on a building chosen for its available surface area, as well as its new white ENERGY STAR® rated roof. The company contracted with DT Solar (now First Solar Electric) for installation of the array, which includes a mounting system allowing the panels to be angled toward the sun for optimal performance while allowing convenient access to the roof membrane. The solar project's cost of $910,000 was reduced by an incentive from the NJ Clean Energy Program of $482,000 and a federal tax credit amounting to $132,000.

Steam is an important part of the company's pharmaceutical research process. Through its contract with Monsen Engineering, NPC installed a 550 kW steam-driven back pressure turbine where high pressure steam is used to turn the turbine and generate electricity for the plant before being reduced in pressure for use in the research operation. The $654,710 project cost was eligible for an incentive of $196,410 from NJ Clean Energy's Combined Heat and Power Program.

New Jersey's Clean Energy PROGRAM™
Your Power to Save

Success Stories

A 424 module photovoltaic solar array on a white, ENERGY STAR rated roof includes a mounting system allowing the panels to be angled toward the sun for optimal performance.

NOVARTIS

Novartis Pharmaceuticals Corporation

One Health Plaza, 402/126
East Hanover, NJ 07936

Taking advantage of the Design Support option available under NJ SmartStart Buildings®, NPC evaluated the original design and current performance of its existing chilled water plant. The analysis concluded that no energy saving modifications were cost-justified, helping to free up capital needed for worthwhile investments.

One of those investments involves an innovative lighting retrofit in a formally leased building equipped with 1,653 older style T-12 lamps. The retrofit kit converts the existing 4 lamp T-12 fixtures to 2 lamp T-8 fixtures and replaces the old magnetic ballasts with electronic ballasts. The $212,000 project cost qualified for $11,400 of NJ SmartStart Buildings incentives.

The company's future plans call for replacement of four rooftop direct exchange air handler units that are equipped with reciprocal compressors. The new units feature more efficient scroll compressors and are eligible for financial incentives under NJ SmartStart Buildings.

Benefits

The Novartis solar array generates 150,000 kWh of electricity each year, a savings of nearly $30,000. In addition, Solar Renewable Energy Certificates (SRECs) provide a source of revenue that Novartis uses to purchase from other green power sources.

Since its installation in 2005, the company's steam-driven back pressure turbine has generated 1,533,000 kWh of electricity, amounting to an estimated $195,000 of savings to date.

The lighting retrofit results in annual savings of 370,000 kWh, which translates into a $72,000/year reduction in energy expenses (and more when considering the benefit of a reduced cooling load from lamps that produce less heat).

Novartis Pharmaceuticals is committed to energy efficiency and the wise use of renewable technologies in its efforts to reduce greenhouse gas emissions. The company's continued partnership with the NJ Clean Energy Program serves as an example to its employees and the residents and businesses in its community.