New Jersey's cleanenergy njcleanenergy.com program™

Success Stories

Bayer Corporation

PROJECT INFORMATION

Program Participant
- Bayer Corporation

Location
- 100 Bayer Boulevard
  Whippany, NJ 07981

Project Contact
- Greg Gullette
  Director of Site Services, East Coast
  Bayer Corporation

Technology
- LED and fluorescent lighting with occupancy sensors
- High-efficiency chillers, direct expansion (DX) cooler, boilers and hot water heaters
- Variable frequency drives (VFDs) on pump motors, fans and cooling tower
- Low-E windows
- Improved insulation

Total Project Cost
- $4,233,858

NJCEP Incentives
- $1,133,423 through the Pay for Performance program

Estimated Annual Savings
- 4,039,902 kWh
- 13,530 therms
- $526,876

Project Payback
- 6 years

Pay for Performance Partner
- Energy Squared, LLC

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

Pay for Performance incentives help turn vacant buildings into showcase of energy innovation for construction of new U.S. headquarters

Background

Bayer has a more than 150-year history developing innovative products and solutions to improve the health of humans, livestock and plants. Seeing the threat that climate change poses to farming and public health, Bayer has undertaken progressively ambitious commitments to lessen the company's environmental impact.

From 2005 to 2013, Bayer reduced greenhouse gas emissions by 18 percent. Bayer has since increased their sustainability targets, with goals of lowering emissions to 20 percent below 2012 levels and improving energy efficiency 10 percent by 2020.

In 2010, Bayer operations in the United States were spread across four sites in New Jersey and New York. A decision to consolidate operations became an opportunity to reduce emissions from Bayer facilities through the construction of a more energy-efficient headquarters.

A site selection process culminated in 2012 when company officials reached an agreement with New Jersey's Economic Development Authority (EDA) on tax credits that persuaded Bayer to move into the former Alcatel-Lucent and Bell Laboratories campus in Whippany, NJ, a sprawling 94-acre property in Morris County.

With many of the buildings nearly a century old and in need of repair, significant renovation was required to create the energy-efficient headquarters that Bayer had envisioned. Financial assistance from *New Jersey's Clean Energy Program* (NJCEP) provided Bayer with incentives that encouraged company officials to maximize energy-saving opportunities. In turn, the campus' outdated office buildings became a showcase facility for the latest approaches to energy innovation.

Bayer incorporated many environmentally beneficial improvements when renovating their U.S. headquarters in Whippany, NJ. In addition to installing high-efficiency equipment, the company recycled and remanufactured more than 90 percent of the existing ceiling tiles.

Solution

The NJCEP Pay for Performance program incentivizes building owners who take a comprehensive, whole-building approach to saving energy. Incentives are directly linked to reducing energy use by at least 15% below the state's current energy code.

Bayer focused their renovation effort on two of 15 vacant office, laboratory and support buildings. Of those two buildings,

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one already had an effective heating, ventilation and air conditioning (HVAC) system using chilled water, while the other required an entirely new system. Both buildings were gutted and connected by a five-story glass atrium, creating a combined 700,000-square-foot office space.

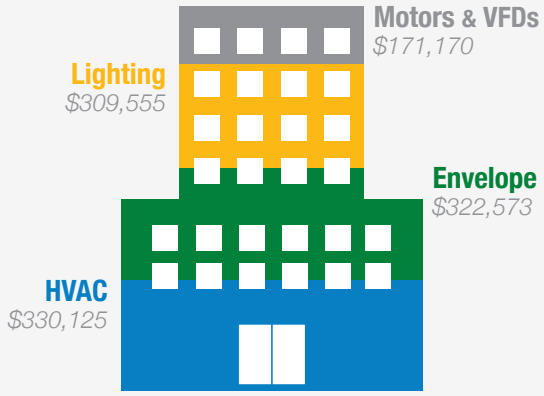
"When renovating the buildings we came across issues that we did not expect," said Greg Gullette, Bayer's Director of Site Services, East Coast. "*New Jersey's Clean Energy Program* helped us in our decision-making process. Pumps needed to be replaced, for example, and in every case we opted for a more efficient unit."

Energy conservation measures included new high-efficiency chillers, direct expansion (DX) air conditioning, and upgraded hot water and heating units; variable frequency drives (VFDs) on the cooling tower, pump motors and variable air volume (VAV) fans; and low-emissivity (low-E) glass window coatings. LED lighting and occupancy sensors were also installed in sections of the new buildings.

Energy Squared, LLC, an NJCEP Pay for Performance approved partner, was contacted by Bayer to help identify energy-efficiency opportunities. "Bayer had already chosen heating and cooling equipment that was high efficiency. The rest of the HVAC system could have been designed more cheaply to save on construction costs," said William Hillsinger, Energy Squared Director of Energy Services. "But the NJCEP incentives helped encourage Bayer to incorporate efficiency into the design of the rest of their systems."

NJCEP provided $1,133,423 in performance-based incentives for the $5,367,281 project. According to Energy Squared, the energy-efficiency improvements save Bayer 4,039,902 kWh and 13,530 therms of natural gas per year, resulting in annual energy cost savings of $526,876. The energy-efficiency features are expected to pay for themselves in about eight years.

Project Incentives: *$1,133,423*



After construction was completed in 2013, Bayer pursued Leadership in Energy Design (LEED) certification from the U.S. Green Building Council. Incorporating more energy-efficient features into the construction process allowed Bayer to surpass initial expectations and receive Platinum designation, the highest level of LEED certification.