



The Pennsylvania State University

Energy Savings Performance Contract (ESPC)



Pennsylvania State University wanted to reduce both its energy consumption and its impact on the environment. In 2002, The University began the Guaranteed Energy Savings Program to reduce the university's energy use and carbon footprint at its many campuses and colleges around the Commonwealth. There were four initial projects—Penn State Beaver, Penn State Erie (the Behrend College), Penn State Harrisburg and Pennsylvania State University (West Halls Residential Complex)—encompassing a total of 87 buildings and 2,459,916 square feet.



PROJECT DATA

LOCATION

Pennsylvania

CONSTRUCTION DATES

May 2006 to December 2008

CAPITAL COSTS

\$8,399,593

ANNUAL SAVINGS

Energy Savings: \$953,468

ENVIRONMENTAL BENEFITS

8,061 tons of harmful greenhouse gas emissions reduced annually

Equivalent to:

- Preserving 51.1 acres of forest from deforestation* or
- Conserving 17,006 barrels of oil*

*Sources:

- Leonardo Academy's Cleaner & GreenerSM Emissions Reduction Calculator: <http://www.cleanerandgreener.org/resources/pollutioncalculator.html>
- U.S. Environmental Protection Agency, Greenhouse Gas Equivalencies Calculator: <http://www.epa.gov/cleanenergy/energy-resources/calculator.html>



Beginning work in 2006, Con Edison Solutions, through its subsidiary, Custom Energy Services, has completed four projects to date for the university, including campus-wide projects at the facilities listed above. Each project was developed to meet the unique needs of the campus and were paid for with guaranteed energy savings.

The work at the first four campuses was completed in 2008. Currently, Con Edison Solutions has three additional projects under technical development at the Penn State Great Valley, Penn State Brandywine, and Penn State Abington campuses in the Philadelphia area.

“Con Edison Solutions has been an excellent partner in our efforts to advance our energy efficiency goals throughout the Pennsylvania State University system. Partnering with Con Edison Solutions has allowed Penn State to develop and implement self funding environmental solutions at four campuses.”

Bruce J. Smith Energy Program Engineer
The Pennsylvania State University



PROJECT DATA

ENERGY CONSERVATION MEASURES/IMPROVEMENTS (ECMs)

Lighting and Lighting Controls

- High efficiency lighting
- LED exit signs
- Occupancy sensors

Heating and Cooling

- Variable air volume
- Steam system improvements
- Demand control ventilation
- Air handling units

Building Envelope

- Weatherization
- Roof Insulation

Water Conservation

- Low-flow water fixtures

Heating and Cooling

- Electric rate switch and meter installation
- Mechanical system improvements
- Building controls and systems optimization
- Wind Turbine
- Retro-commissioning