

# Energy Conservation Measures Bring Significant Savings to Prince George's Co. Public Schools

Extensive project brings 102 schools better energy efficiency through 11 individual ECMs



## DistributedEnergy



### Challenge

Prince George's County Public Schools (PGCPS) is the second largest school system in the state of Maryland and the 21st largest in the United States. With its richly diverse student body of over 130,000 students, PGCPS is committed to advancing the achievement of all students in its 209 schools—including two of the state's largest high schools.

Faced with an aging infrastructure—the average age of its buildings is over 47 years, with 80% of the district's schools dating back to earlier than 1975—PGCPS needed to upgrade its energy systems while keeping within tight budgetary constraints. Further, the county is expected to add another 5,300 students to its rolls by 2024. This increase will add pressure to the school system's financial resources and infrastructure, as public education costs the county about \$15,000 per student per year.

Facing this growing student population, aging infrastructure, and limited increases to its operating budget, PGCPS needed to reduce operating expenses while improving the classroom environment for its students, faculty and staff. With finite capital funding to address these challenges, the school system needed a resourceful solution to overcome its challenges.

### Solution

Pepco Energy Services (recently acquired by Exelon, Constellation's parent company, and now organized under Constellation) was competitively chosen to implement a number of energy conservation measures (ECMs) for the school system. Under an Indefinite Delivery Contract (IDC) from the State of Maryland, PGCPS entered into a contract with Constellation that would provide \$82 million in capital improvements. Under the terms of the contract, PGCPS utilized both state and county funds to cover the improvements, reducing the pressure on the school system's budget.

Rolled out over five phases and spanning an eight-year construction timeframe, the contract called on Constellation to provide high-efficiency lighting, water conservation measures, and replacement of heating and cooling systems with more energy-efficient designs. In addition, Constellation assumed the installation of the new energy management controls from an incumbent Energy Services Company (ESCO).

The project, completed in 2015, saw 11 individual ECMs installed in 102 schools and administrative buildings and was projected to save the school system over \$10.7 million through energy cost savings, operation and maintenance savings, and rebates in its first year alone.

On top of the energy efficiency upgrades, Constellation installed an educational 6-panel solar array with inverter at the Howard B. Owens Science Center in Lanham, MD, for demonstration



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## Highlights

### Project

- Total contract amount of \$82 million
- Annual projected energy and maintenance cost savings of \$5.5 million
- Energy use reductions of 21.7%
- 2.3 million kWh in expected annual energy savings, the equivalent of powering 174 average American homes for a year (US EPA)
- 102 buildings addressed
- 553 separate ECMS
- \$12 million in fluorescent and LED lighting upgrades
- \$3.37 million in water conservation measures
- \$2.7 million in energy efficient transformer installations

### Technical

- Water conservation measures
- Heating and cooling equipment replacement
- Domestic hot water system improvements
- Economizer retrofits
- Steam trap retrofits
- Energy-efficient window, lighting and transformer installation
- Energy management system and controls repairs and upgrades
- VendingMiser® controls
- Occupancy sensors installed
- Air compressor replacement
- AHU retrofit

purposes. Here, visiting students learn first-hand about solar energy, and teachers can easily integrate this learning into their Science, Technology, Engineering and Mathematics (STEM) curriculum.

With the completion of this wide-reaching energy efficiency project, PGCPSS has brought its infrastructure into the 21st century while also providing a comfortable and safe environment for its students, faculty and staff. These significant savings can help to enrich the learning environments of these 102 schools with new activities and resources.

### From the Customer

“Prince George’s County Public Schools is proud to have developed this project with Pepco Energy [Constellation]. We look forward to many years of providing an energy-efficient environment for our students and employees.”

—Dr. Kevin M. Maxwell, Chief Executive Officer, PGCPSS

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