

# Technology Profile

## Energy Management Systems

Innovative energy efficiency software products and controls are enabling a growing number of commercial, industrial and institutional customers to improve operations, enhance occupant comfort and lower costs at their facilities. PECO Ways to Save offers incentives for installing and using these data and information systems to maintain and improve energy performance.

### Long-Lasting Energy Savings

Energy management systems can include a combination of integrated building automation and optimization tools, data benchmarking and communication platforms, billing analysis, and equipment fault detection systems. Such tools can result in savings up to 39% when controlling lighting systems or 14%–16% for heating, ventilation and air conditioning (HVAC) systems.<sup>1</sup> Savings can grow year by year if operational processes and controls stay consistent or continually improve. PECO customers can qualify for financial incentives by using a building automation system to control HVAC and lighting systems.

### Benefits of Building Automation

Businesses can improve facility performance through controls on indoor temperature, humidity, ventilation and lighting conditions. Controls can ensure ideal comfort settings based on the activity in different buildings at various times of the day or throughout the week. Movie theaters, sports arenas and shopping malls, for example, are able to automatically adjust temperature and ventilation controls during popular hours.



When buildings are unoccupied, temperature setpoints can be adjusted for energy efficiency. The American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE) recommends decreasing heating temperature setpoints by at least 10 degrees Fahrenheit and increasing cooling temperature setpoints by at least 5 degrees Fahrenheit when buildings are unoccupied.<sup>2</sup>

Greater savings can be achieved when energy management systems detect system errors. These features allow for instant response to maintenance concerns and can prevent HVAC equipment from wastefully drawing more energy than required.

Building automation systems can report and help visualize data collected from across all building systems. Time series data trends collect key performance metrics related to energy management and routine operations.

Mobile applications help troubleshoot system- or equipment-level performance issues in real time. Facility managers can receive alerts and address system issues, whether within the building or at a remote location.

Custom software solutions are available that enable control of critical areas, such as laboratories, clean rooms and operating suites, within precise parameters.

## Automatically Avoid Wasting Energy

Even the most energy-efficient buildings can see energy savings deteriorate over time if equipment and controls are not sufficiently maintained and optimized as equipment ages and buildings go through changes.

Retrocommissioning studies help reset building systems to their optimal performance settings. Energy efficiency opportunities are identified by testing the most energy-intensive equipment, such as the HVAC system, lighting equipment and controls. Analysts seek simple improvements in building controls and other low-cost operational measures to increase energy efficiency.

Once improvements are made, installing an energy management system can prevent problems from arising in the future. And, facilities controlled by a building automation system are less likely to revert to improper settings.



## Building Automation Systems<sup>3</sup>

- Primary applications: Control of indoor temperature, ventilation rates, lighting and humidity setpoints based on building schedule and alarming of out-of-range operations
- Typical data scope: Systems and components, may include submetering
- Typical data interval: 15 minutes and less
- Also known as: Energy management and control system, building management system, energy management system and building control system

## Incentives for Energy Management Systems

PECO Ways to Save offers financial incentives to help you install building automation systems that can significantly improve your facility's energy efficiency. If your building doesn't currently have a digital automated HVAC control system, you could be eligible!

You can qualify for an incentive when you install a web-based building automation system. This also includes projects that involve upgrading outdated pneumatic control systems or replacing inoperable time control functions.

To ensure the energy savings are accurately tracked, customers are required to measure them through site-specific equipment trends or utility meter data.

### ► Contact Us Today!

For more information, visit  
**1-844-4BIZ-SAVE** (1-844-424-9728)  
or visit [peco.com/business](https://peco.com/business).

<sup>1</sup> sciencedirect.com/science/article/abs/pii/S1364032115013349

<sup>2</sup> ashrae.org/file%20library/technical%20resources/standards%20and%20guidelines/standards%20addenda/90\_1\_2019\_bk\_20220121.pdf

<sup>3</sup> osti.gov/servlets/purl/1755532