

# 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 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 of 20%–30% when controlling lighting systems or 15% 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, cooling set points can be increased. Studies find savings of 3% for every 1 degree adjustment. Automatically increasing temperatures from 72 degrees Fahrenheit to 80 degrees Fahrenheit overnight could, on average, reduce HVAC costs by 12% in an office or retail environment.<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, cleaning rooms and operating suites, within precise parameters.

### Automatically Avoid Wasting Energy

Even the most energy-efficient buildings can see energy savings deteriorate over time. For example, Leadership in Energy and Environmental Design (LEED) certified buildings can double their energy intensities within just a few years of original commissioning.<sup>3</sup>

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>4</sup>

- Primary applications: Control of indoor temperature, ventilation rates, lighting and humidity set points 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
- Vendor examples: Automated Logic WebCTRL, Johnson Controls Metasys, Novar Opus EMS, Siemens APOGEE and Tridium Niagara

### Incentives for Energy Management Systems

PECO offers financial incentives for installing building automation systems. Buildings without preexisting digital automated HVAC control systems are eligible for an incentive. Facilities qualify when installing a web-based building automation system. Eligible projects may also include upgrading outdated pneumatic control systems and replacing inoperable time control functions. Customers are required to measure energy savings through the collection of site-specific equipment trends and/or utility meter data.

### ► Contact us today!

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

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

<sup>2</sup> powerhousedynamics.com/blog/how-much-do-energy-management-systems-save-small-commercial-facilities/

<sup>3</sup> sciencedirect.com/science/article/pii/S037877881300529X

<sup>4</sup> betterbuildingsolutioncenter.energy.gov/sites/default/files/attachments/A\_Primer\_on\_Organizational\_Use\_of\_EMIS\_V1.1.pdf

