



**SEE Action**  
STATE & LOCAL ENERGY EFFICIENCY ACTION NETWORK

## Strategic Energy Management for Regulators of Ratepayer-Funded Programs

### What is Strategic Energy Management?

The predominant approach to commercial energy efficiency is to focus on single-technology, one-time solutions, such as replacing lighting or cooling equipment with more efficient technologies. This transaction-based approach tends to limit whole-building performance improvement, and keeps building operators focused on short-term savings rather than continuous improvement. An organization-wide strategic energy management approach that sets long-term energy savings goals and uses rigorous tracking and reporting systems can drive greater savings, reach across entire building portfolios, and institutionalize such practices to sustain long-term savings. Utility regulators can require electric and gas utilities to offer such holistic energy management programs.

### Why Encourage Strategic Energy Management?

Commercial buildings comprise nearly half of total building energy use and roughly 20% of total energy consumption and greenhouse gas emissions in the United States.<sup>1,2</sup> Energy expenditures average more than \$2 per square foot (ft<sup>2</sup>),<sup>1</sup> making commercial energy use a cost worth managing. Organization-wide strategic energy management programs can deliver cost-effective energy savings. Field experience in large organizations shows that programs can be implemented for little initial cost and can be used to identify efficiency-improvement projects with simple paybacks that typically are less than 3 years.<sup>3</sup>

For example, the BC Hydro Continuous Optimization program has operated since 2008, and reports a 1.9 benefit-cost ratio. The company estimates customer implementation costs of \$0.31 per square foot, electric savings of 1.6 kilowatt-hours per square foot (7.5%), and gas savings of 6,200 British thermal units (BTUs) per square foot (13.8%).<sup>4</sup>

Program designs that promote portfolio-wide strategic energy management can achieve increased energy savings and greater savings persistence than single-measure incentive programs. By encouraging customers to pursue multiple measures—including equipment and control systems and operational measures—over multiple years, program sponsors can achieve a greater fraction of a given building's efficiency potential. Technical or financial assistance for building-operator training can sustain and increase savings.

By offering more integrated services (e.g., benchmarking, retro-commissioning) that are required for strategic energy management programs, program sponsors can help build long-term relationships with customers. These relationships can solidify the program sponsor's role as a trusted advisor for future energy efficiency projects. Program sponsors also can leverage government- or industry-driven strategic energy management initiatives (e.g., U.S. Environmental Protection Agency Battle of the Buildings<sup>5</sup>; the Building Owners and Managers Association Kilowatt Crackdown<sup>6</sup>) to achieve greater overall market transformation with limited ratepayer investment.

### Key Points

- Strategic energy management is a long-term approach to efficiency that includes goals, tracking, and reporting.
- Strategic energy management can drive greater savings, reach across entire building portfolios, and institutionalize best practices to sustain long-term savings.
- Successful strategic energy management programs build long-term relationships with large utility customers and can improve the persistence of energy savings.

### About SEE Action

*The State and Local Energy Efficiency Action Network (SEE Action) is a state and local effort facilitated by the federal government that helps states, utilities, and other local stakeholders take energy efficiency to scale and achieve all cost-effective energy efficiency by 2020.*

### About the Working Group

*The working group is comprised of representatives from a diverse set of stakeholders; its members are provided at [www.seeaction.energy.gov](http://www.seeaction.energy.gov).*

## Who is Affected?

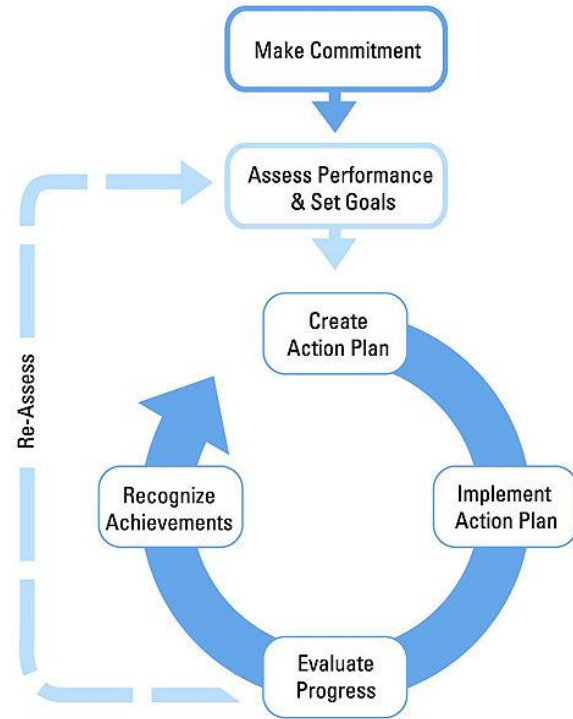
Organizations with large, energy-intensive building portfolios—including offices, hospitals, retailers, hotels, grocery stores, and public safety buildings—typically are well suited to benefit financially from strategic energy management programs. Strategic energy management programs involve individuals at all levels of an organization, from facilities staff to executive management, and also could include outside support. Program sponsors, using key account managers, energy efficiency staff, or program implementation contractors, could participate in customers' energy management teams.

## How Does It Work?

Utility regulators can require utilities to offer portfolio-wide strategic energy management programs to support cost-effective energy performance improvement over time. Regulators must understand the program model in which energy management is carried out so that technology and behavior-based energy savings can be effectively attributed to the program and the regulatory body can feel confident in approving such programs.

National and international efforts are for the first time providing robust standards for organizational energy management programs. The International Standards Organization (ISO) has developed ISO 50001 for energy management systems as a framework for organizational energy management in day-to-day operations and long-term planning.<sup>7</sup> ISO 50001 practices are a key component for the U.S. Department of Energy (DOE)-supported Superior Energy Performance program,<sup>8</sup> which certifies energy performance improvement in industrial facilities and is currently being piloted in commercial properties.

The U.S. Environmental Protection Agency (EPA) program, Building Performance with ENERGY STAR<sup>®</sup>,<sup>9</sup> provides guidelines for energy efficiency program sponsors to encourage building- or portfolio-wide energy improvement, consistent with ISO 50001 practices or Superior Energy Performance certification. The ISO 50001 standard provides a useful framework for designing programs. The ENERGY STAR and Superior Energy Performance programs offer additional guidelines using the general model depicted in Figure 1, which outlines a 7-step process for engraining energy-conscious decision making in an organization's operations.



**Figure 1. The ENERGY STAR Guidelines for Energy Management 7-step model**  
Source: U.S. Environmental Protection Agency

## Implementing Strategic Energy Management Programs

Key issues to be resolved by utility regulators when considering energy management programs include:

- Measurement and verification of savings
- Estimation of lifetime of savings
- Attribution of behavior-based savings.

Understanding these fundamentals and knowing how other states and utilities have approached strategic energy management provide a stronger basis for confidently including such programs in utility program portfolios. In California, for example, the regulated utilities do not claim savings from their Continuous Energy Improvement (CEI) programs, but they do encourage participation in other programs through which savings can be claimed.<sup>10,11</sup> As they consider strategic energy management programs, regulators can take the following steps.

1. **Consult stakeholders.** For emerging topics like portfolio-wide energy management, many regulatory bodies create stakeholder working groups and hold informal hearings or workshops. These forums can provide a quick way to get stakeholder input, begin forming consensus around program design principles, and gain support.

2. **Develop design and evaluation criteria.** Utilities might need guidance from regulators on the key elements—from definitions and technical protocols to professional accreditation methods—that should be included in program design.

Evaluation methods also should be clear before programs are designed. This enables program planners to design the programs in ways that permit the preferred evaluation approach to work. Because energy performance benchmarking is a key baseline data point and savings verification method, the utility regulator might need to require automated benchmarking to ensure effective program delivery.

3. **Coordinate with other programs and policies.** If, for example, a state or local government in the regulatory body's jurisdiction requires benchmarking and disclosure or retro-commissioning, a ratepayer-funded energy management program can take advantage of these regulations to promote strategic energy planning that integrates the two related practices.
4. **Oversee implementation and learn from evaluation.** Regulatory bodies are encouraged to review existing evaluation reports in the program approval phase. As with many program innovations, a learning curve might be necessary for gaining the full benefits. Regulators should expect improved results over time, even if startup issues limit immediate impacts. Multiyear program funding approvals can help address this issue.

### Existing Policies/Programs

#### New Jersey's Clean Energy Program™: Pay for Performance Program<sup>12</sup>

**Affected Property Types:** For existing buildings, includes commercial, industrial, and multifamily buildings with peak demand of more than 100 kilowatts in any of the previous 12 months. For new construction and renovations, includes commercial, industrial, and multifamily buildings that are 50,000 ft<sup>2</sup> or larger.

**Key Requirements (existing buildings only):** Recruits participants via targeted marketing of retail chains and healthcare organizations. Uses contractors to provide one-on-one technical assistance in developing an energy management plan designed to reduce energy consumption by at least 15%. Plan components include:

- Benchmarking with EPA Portfolio Manager
- Energy audit
- Financial plan for funding efficiency measures

- Installation schedule.

The program awards incentives based on customer completion of key milestones:

- Completing energy management plan
- Installing recommended measures
- Completing post-installation benchmarking report to verify minimum 15% energy savings.

#### Southern California Edison<sup>10</sup> and Southern California Gas<sup>11</sup>, Continuous Energy Improvement (CEI) Program

**Affected Property Types:** Non-residential buildings.

**Key Requirements:** Requires participating customers demonstrate executive-level support; commit adequate financial and personnel resources, including an "energy champion"; and integrate energy efficiency principles and training into company culture. Assigns an energy advisor for a 2-year commitment to build a relationship with the customer and keep them engaged in continuous energy improvement. Guides customers through the following steps:

- Assess technological and behavioral energy practices, identify opportunities for improvement
- Develop a strategic energy plan, including energy saving goals and performance metrics
- Implement a strategic energy plan and educate employees on plan components and potential behavioral changes
- Evaluate post-implementation energy savings from identified efficiency projects
- Modify plan and goals based on performance
- Leverage utility financial and technical assistance programs without claiming savings directly from the CEI program
- Support customers' efforts to pursue third-party labeling and certification programs (e.g., ENERGY STAR, ISO 50001, Superior Energy Performance).

#### Wisconsin's Focus on Energy™: Retail Energy Management Challenge<sup>13</sup>

**Affected Property Types:** Commercial retail buildings.

**Key Requirements (existing buildings only):** Recruits large retailers to develop energy management plans and document energy savings. Uses contractors to provide one-on-one technical assistance in developing an energy management plan that includes:

- Benchmarking with EPA Portfolio Manager to baseline energy performance and verify energy savings

- Creating an energy management team
- Establishing energy savings goals
- Performing retro-commissioning-grade energy audits for underperforming facilities
- Identifying facilities to participate in retro-commissioning program
- Providing recognition for customers who achieve the highest portfolio-wide ENERGY STAR energy performance score and demonstrate the greatest percent energy performance improvement.

### Complementary Policies/Programs

Strategic energy management should be considered a cornerstone of a commercial energy efficiency portfolio. It can integrate existing energy efficiency programs (e.g., retro-commissioning, prescriptive and custom measures, energy challenges) under a common umbrella or serve as a stand-alone program with separate incentives. The three program examples provided here link with existing program offerings, but future programs could replace separate programs with a single integrated strategic energy management program. For access to related SEE Action resources, visit [www.seeaction.energy.gov/existing\\_commercial.html](http://www.seeaction.energy.gov/existing_commercial.html).

### Other Resources

- Pew Center on Global Climate Change. From Shop Floor to Top Floor: Best Business Practices in Energy Efficiency. [www.pewclimate.org/energy-efficiency/corporate-energy-efficiency-report](http://www.pewclimate.org/energy-efficiency/corporate-energy-efficiency-report).
- U.S. Department of Energy, *ISO 50001 Energy Management Standard*. [www1.eere.energy.gov/energymanagement](http://www1.eere.energy.gov/energymanagement).
- U.S. Environmental Protection Agency. *ENERGY STAR Energy Management Guidelines*. [www.energystar.gov/guidelines](http://www.energystar.gov/guidelines).
- U.S. Environmental Protection Agency. *Sponsors Guide to ENERGY STAR for Commercial Programs*. [www.energystar.gov/index.cfm?c=eeps\\_guidebook.eeps\\_guidebook](http://www.energystar.gov/index.cfm?c=eeps_guidebook.eeps_guidebook).

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- <sup>5</sup> U.S. Environmental Protection Agency's Battle of the Buildings. [www.energystar.gov/battleofthebuildings](http://www.energystar.gov/battleofthebuildings).
- <sup>6</sup> Building Owners and Managers Association (BOMA) Kilowatt Crackdown. <http://kilowattcrackdown.betterbricks.com>.
- <sup>7</sup> ISO 50001. [www.iso.org/iso/energy\\_management\\_system\\_standard](http://www.iso.org/iso/energy_management_system_standard).
- <sup>8</sup> Superior Energy Performance Program. [www.superiorenergyperformance.net/](http://www.superiorenergyperformance.net/).
- <sup>9</sup> Building Performance with ENERGY STAR program. [www.energystar.gov/ia/news/downloads/Building\\_Performance\\_with\\_ES.pdf](http://www.energystar.gov/ia/news/downloads/Building_Performance_with_ES.pdf).
- <sup>10</sup> Southern California Edison. Continuous Energy Improvement Program. [www.sce.com/business/energy-solutions/continuous-energy-improvement.htm](http://www.sce.com/business/energy-solutions/continuous-energy-improvement.htm).
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#### Disclaimer:

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