Building Performance with ENERGY STAR Program Framework

The purpose of this document is to provide prospective program participants with a framework of elements for Building Performance with ENERGY STAR, a program model that is designed to assist energy efficiency program sponsors in harvesting more energy savings from commercial buildings through whole-building program strategies that leverage the ENERGY STAR partnership and related tools.

Why Building Performance with ENERGY STAR?

Energy efficiency program sponsors faced with increasingly aggressive goals for energy savings and related greenhouse gas reductions need to achieve deeper, more comprehensive savings in the existing building stock. Building Performance with ENERGY STAR extends EPA's powerful brand and successful business-to-business program model to utilities and other energy efficiency program sponsors to help them meet efficiency program goals while delivering exceptional value to customers.

- ENERGY STAR partners include more than 5,800 private businesses, public sector organizations and industrial facilities investing in energy efficiency and reducing energy use in their buildings.
- Building owners and operators have now used EPA's portfolio manager tool to benchmark the energy efficiency of more than 200,000 buildings as of the end of 2010. These buildings represent more than 20 billion square feet – or 25% of all commercial building floor space – across the country.
- Nearly 85% of U.S. households are aware of and understand the ENERGY STAR label, and there is growing evidence the label is achieving strong traction in the commercial marketplace. CoStar Group, the largest provider of information services to U.S. commercial real estate professionals, prominently highlights ENERGY STAR buildings in their commercial real estate listing service.
- The University of California recently concluded that buildings that have earned the ENERGY STAR command rental rates that are roughly 3% higher per square foot than otherwise identical buildings; premiums in effective rents are even higher by more than 6%, and selling prices of ENERGY STAR-labeled buildings command a 16% premium. They also concluded that premiums are associated with increased efficiency. For example, an increase of 10% in the site energy utilization efficiency of an ENERGY STAR labeled building is associated with a twenty basis-point increase in effective rent over and above the 6% premium.
- Almost 20 state and local governments and association chapters have launched campaigns and incentive programs that leverage ENERGY STAR benchmarking tools, and 13 more have enacted or proposed policies requiring benchmarking.

Program Concept

Most of us have at least a general understanding of how our car mileage ranks against others cars on the market, but even building engineers rarely know how their facility ranks against others in terms of energy use. In the commercial building sector, lack of knowledge about building energy performance and unbiased advice on how best to improve performance are key barriers to motivating operators to improve the efficiency of their buildings. Building Performance with ENERGY STAR is a program model that enables Energy Efficiency Program Sponsors (i.e. utilities, energy efficiency program providers) to leverage EPA's powerful brand, tools, and strategies in their commercial program offerings.

The program model promotes a cost-effective path forward for customers to invest in energy performance on an ongoing basis, taking advantage of operation, maintenance, and control strategies, as well as efficient component and system upgrades that are planned for and incorporated in business decision making in a logical sequence. Energy savings of up to 30% can be achieved through integrated energy management.

Energy Efficiency Program Sponsors that implement Building Performance with ENERGY STAR in the commercial market agree to meet the following program requirements:

- **Target Marketing/Recruiting**: Target one or more of the vertically integrated market sectors covered by ENERGY STAR.
- **Benchmarking:** Use benchmarking with EPA's Portfolio Manager as a gateway program requirement; facilitate access to energy data; and provide appropriate training and support services.
- **Strategic Energy Management/Action Plan Development:** Provide education and guidance to program participants on the value of an integrated approach to improving building performance. Work with program participants to develop an Action Plan for improving the performance of their facility or portfolio of facilities.
- **Whole-building Performance Assessment:** Conduct building performance assessments to identify opportunities for whole-building improvements. Encourage building managers to look at systems comprehensively, in order to identify savings from operations and maintenance strategies and occupant behavior, and to capture interactive savings between building systems.
- **Whole-building Upgrades:** Develop strategies for increasing demand and supply for comprehensive building upgrade services, including engagement with trade allies to encourage the delivery of comprehensive services, and financial and other incentives to foster an integrated approach to building performance.
- **Performance Monitoring and Verification:** Develop a performance monitoring and verification plan that validates program impacts, supports ongoing energy management through re-benchmarking and other efforts, and assesses customer satisfaction with the program.

EPA's Portfolio Manager, a tool for rating energy performance on a scale of 1–100 relative to similar buildings nationwide, is used to benchmark and inform corporate investment in energy management.

Program Requirements

Each of the Building Performance with ENERGY STAR program requirements are discussed in greater detail below. In each section, there are required elements that a sponsor agrees to address, as well as recommended elements to aid successful implementation. Program

sponsors may expand upon the program elements and tools cited in these requirements, as long as program offerings are compatible with ENERGY STAR energy management strategies, as described in the Guidelines for Energy Management and the Building Upgrade Manual.

Target Marketing/Recruiting

Building Performance with ENERGY STAR addresses the key business drivers of targeted sectors, creating a compelling value proposition that captures the attention not only of facility managers, but also the business executives that make investment decisions.

Required Elements:
Program sponsors agree to

- Target one or more of the vertically integrated market sectors covered by ENERGY STAR (e.g., commercial real estate, K-12 schools, retail, grocery, health care, hospitality) for program participation. For program sponsors just getting started, large and mid-sized buildings present the most appropriate targets for building performance programs.
- Require program participants to benchmark with EPA's Portfolio Manager and develop an Action Plan for implementing cost-effective energy efficiency improvements.
- Develop sector-specific marketing and/or technical assistance materials or leverage existing materials and tools available through ENERGY STAR. Available resources include sector-specific fact sheets, web content, financial value messaging, and technical assistance manuals. (See Program Resources section, page 9).

Targeted financial value messages available from ENERGY STAR speak to key business drivers. For example for commercial real estate operators, "Each $1 invested in energy performance improvements at a 20-30% savings rate is equivalent to increasing net asset value by $2.50-$3.75."

Recommended Elements:
Program sponsors are encouraged to

- Target resources to sectors with the highest savings potential and customize program offerings to the needs of each sector.
- Work with building owners and managers across entire portfolios of buildings to assess performance and prioritize investments.
- Recruit customers to join the national ENERGY STAR partnership, which requires senior level commitment and opens doors to potential national recognition from EPA.

Example: Wisconsin Focus on Energy's commercial sector program employs a strategic market segmentation approach, targeting the most energy-intensive segments in the commercial market: restaurants, grocery, healthcare, and hospitality. Each sector has its own team dedicated to working with the market segment, and they develop messaging and incentives specifically directed to meet the sector's needs, opportunities, and business drivers. The program leverages industry associations, utilizes trade allies, and conducts outreach at trade shows.

Example: Xcel Energy's Commercial Real Estate Efficiency program is specifically targeted at commercial real estate property owners/managers, traditionally a "hard to reach" segment. In doing so, it addresses one of the key challenges facing programs in the commercial real estate sector—the allocation of costs and benefits between landlord and tenant.

Benchmarking

Building Performance with ENERGY STAR uses EPA's Portfolio Manager as the key tool for identifying top and worst performing buildings and for targeting investments accordingly. For example, low-scoring buildings will likely benefit from operational improvements, as well as equipment upgrades. After energy efficiency improvements are implemented, the energy performance scale can be used to verify energy savings and recognize accomplishments.

Required Elements:
Program sponsors agree to

- Require benchmarking with Portfolio Manager as a gateway program requirement, facilitate access to energy data, and provide appropriate training and support services (e.g., offering group trainings and assisting building operators with benchmarking an initial facility).
- Use the energy performance scale to educate participants on how a building compares to its peer group and to motivate them to implement building performance improvements.

Recommended Elements:
Program sponsors are encouraged to

- Benchmark entire customer building portfolios in order to identify facilities with the greatest opportunities for energy savings and to establish investment priorities.
- Provide energy data in an electronic format compatible with upload to EPA's Portfolio Manager or offer automated benchmarking services (relevant to utility-sponsored programs).

Example: The "More than a Million" offering within the Pacific Gas and Electric (PG&E) Large Commercial & Institutional program directly targets large customers with multi-facility portfolios. PG&E works with the customer to enter all eligible buildings into Portfolio Manager and provides Automated Benchmarking Services to facilitate ongoing performance tracking.

Example: ComEd developed an Energy Usage Data tool to break down benchmarking barriers. Due to direct tenant billing requirements in Chicago, owners of multi-tenant buildings do not have access to utility bills. ComEd's free on-line tool aggregates the electric consumption across all tenant meters, and provides the building operator with a total that can be used to generate a Portfolio Manager score. ComEd is extending this service to provide automated data transfer into Portfolio Manager.

Strategic Energy Management/Action Plan Development

Involving executives as well as facility managers in strategic energy management and in developing an Action Plan to prioritize human and capital investments is essential to moving projects forward. Building Performance with ENERGY STAR engages customers using a strategic energy management framework that fosters strong, on-going relationships with customers, increasing the likelihood that they will repeatedly tap into efficiency program offerings. The framework can be leveraged throughout all aspects of program participation.

The Action Plan provides a roadmap to improved energy performance, consisting of technical steps that need to be taken, along with performance targets and timelines. As a first step, the Action Plan can identify buildings that will most benefit from in-depth assessment, allowing program expenditures to be targeted to the most promising opportunities. After assessments are conducted for specific buildings, the Action Plan can be used to develop plans to implement recommended improvements.

Required Elements:
Program sponsors agree to

- Work with program participants to develop an Action Plan for improving the performance of their facility or portfolio of facilities as an element of an overall strategic energy management approach. EPA's Guidelines for Energy Management are available to program sponsors as a strategic framework (See Program Resources, page 9).
- Require that at least one financial decision maker participate in the Action Plan development process.
- Assist participants with identifying appropriate action steps and preparing a written summary of near- and long-term plans. The Action Plan should identify key tasks, assign personnel responsibilities, and set dates for tasks to be completed. The most effective action plans will require involvement from the sponsor over a multi-year period.
- Educate program participants on the value of an integrated approach to improving building performance during Action Plan development.

Recommended Elements:
Program sponsors are encouraged to

- Involve upper management in the action planning process. The ENERGY STAR partnership experience overwhelmingly shows that senior management commitment is essential for making energy efficiency a priority in an organization.
- Recruit customers to participate in the national ENERGY STAR partnership. This can help leverage senior management commitment and facilitate potential national recognition from EPA.
- Further engage customers by establishing a process for customers to re-benchmark and evaluate energy management efforts and regularly review Action Plans.
- Educate local service providers on building performance strategies and the opportunity to promote ENERGY STAR as Service and Product Providers.

Example: MidAmerican's Nonresidential Energy Analysis program has an Efficiency Partners component where customers work in partnership with MidAmerican to identify and implement comprehensive energy efficiency action plans, which are signed by customer senior management and MidAmerican.

Example: The Northwest Energy Efficiency Alliance (NEEA) helps customers develop and implement action plans. They obtain executive approval of plans through a signed letter of agreement, and ensure that plans dedicate human and capital resources for implementation. NEEA benchmarks the energy-related business practices of program participants using a tool called the High Performance Portfolio Framework.

Example: Wisconsin Focus on Energy's commercial sector program promotes benchmarking with Portfolio Manager as a key component of strategic energy management. Smart Strategies® trainings, modeled after the ENERGY STAR Guidelines for Energy Management, guide customers through the step-by-step process of developing an energy management plan.

Whole-Building Performance Assessment

Whole-building performance assessment is used by Building Performance with ENERGY STAR program sponsors to identify particular opportunities for energy efficiency improvements within a building. To optimize program cost effectiveness, program sponsors can use Portfolio Manager to rate and prioritize buildings within a portfolio for appropriate levels of assessment.

Required Elements:
Program sponsors agree to

- Conduct at least one building performance assessment per program participant to identify opportunities for whole-building improvements. An investment-grade audit is not necessary, but the assessment should evaluate savings opportunities through operation and maintenance, behavior change, and capital improvements and should address all fuel types.
- Provide customers with an assessment report that includes all information in the EPA's Guidelines for Conducting Performance Assessments, including current score on the ENERGY STAR energy performance scale and target score for improvement, current and projected system-level energy use intensities (e.g., lighting, plug-loads, cooling), and financial metrics relevant to the customer's business.

Recommended Elements:
Program sponsors are encouraged to

- Work with participants that have multiple facilities to prioritize buildings within their portfolio for appropriate levels of assessment. A general rule of thumb for large customers is to target two or three buildings for in-depth assessment in a given year.

Example: In National Grid's Whole Building Assessment program, consultants tour participating facilities to evaluate the system efficiency and provide efficiency recommendations. The study includes an overview of the building's operation and performance characteristics; an inventory of low-cost and no-cost improvement strategies; a list of cost-effective and energy-efficient capital improvement measures including costs, savings, and simple payback; a description of potential utility incentives; and recommendations for long-term and more complex energy-efficiency opportunities.

Example: The New York State Energy Research and Development Authority (NYSERDA) Commercial Real Estate Focus program conducts an Energy Scan to provide a comprehensive whole-building review of energy use. A dynamic diagnostic tool establishes trends, such as time-of-day usage. A one-day site visit permits analyses of critical facility systems. A diagnostic report identifies specific opportunities for energy saving measures, with estimated cost and payback of each enhancement. The report identifies the range of energy efficiency opportunities and evaluates the best opportunities for investments.

Whole-Building Upgrades

A major barrier to achieving deeper savings in existing buildings is that the trade ally industry is dominated by product sales, with businesses tending to specialize in particular components of the building system, e.g., motors, chillers, controls, etc. Building Performance with ENERGY STAR is designed to overcome this barrier by

- Stimulating customer demand for whole building services,
- Creating a business case for trade allies to modify business practices to deliver comprehensive services, and
- Encouraging program sponsors to offer incentives that are aligned with an integrated approach to building performance.

While a whole-building approach can be promoted through a combination of prescriptive, custom, and retro-commissioning incentives, care must be taken to ensure that existing incentive programs do not undermine program goals by encouraging piece meal approaches or offering larger incentives for larger systems. New incentive strategies are emerging in the market that can be employed specifically to encourage whole-building performance improvements.

Required Elements:
Program sponsors agree to

- Develop strategies for engaging trade allies in increasingly comprehensive approaches to building performance improvement.
- Help build customer demand for whole building services.
- Offer incentives that are aligned with an integrated approach to building performance; or facilitate access to existing program incentives in a logical sequence to align with guidance contained in the ENERGY STAR Building Upgrade Manual (e.g., start with operations and maintenance improvements and lighting upgrades before replacing a chiller).

Recommended Elements:
Program sponsors are encouraged to

- Set a performance improvement threshold of at least 10% energy savings for all buildings included in the program
- Employ financial and other incentive strategies designed specifically to promote whole-building improvements. For example, incentive strategies could include:

  (1) limiting trade ally participation in programs to trade allies that can deliver comprehensive services,
  (2) offering customers bonus incentives that reward the implementation of multiple measures, or
  (3) offering customers and/or trade allies performance incentives that are based on a target percent energy savings, an improvement in a facility's score on the ENERGY STAR energy performance scale, or earning the ENERGY STAR label.

Example: The New Jersey Pay for Performance Program recruits trade allies as "approved partners" in its program. In order to be approved, a partner must demonstrate a focus on comprehensive whole building energy efficiency improvements. Companies with a single focus may team together and submit joint applications.

Example: The Northwest Energy Efficiency Alliance helps drive evolution of vendor services from the demand side by providing building owners with sample RFPs/RFQs and service bundles.

Example: NSTAR offers building performance optimization incentives of up to 60% of project costs for reductions of 20% or greater, and up to 70% of project costs for reductions of 25% or greater.

Performance Monitoring and Verification

Program evaluation informs ongoing decision making, improves program delivery, verifies energy savings claims, and justifies future program investment. Engaging in evaluation during the early stages of program development can save time and money by identifying program inefficiencies and suggesting how program funding can be optimized.

EPA's Portfolio Manager provides a unique, cost-effective way to assess building performance of program participants as facilities are improved. It can help flag changes in building performance caused by operational or management practices or changes in building occupancy and can be used to monitor if savings are persisting over time–minimizing the likelihood that programs will fail to demonstrate estimated savings when program impacts are assessed.

Required Elements:
Program sponsors agree to

- Develop a performance monitoring and verification plan that addresses customer satisfaction with the program and includes a sampling protocol for verifying program impacts. The plan should draw on and complement ongoing monitoring and verification as required by program regulators.
- Re-benchmark and monitor a representative subset of improved facilities to track and report on program savings at the whole-building level.

Recommended Elements:
Program sponsors are encouraged to

- Utilize energy performance scores and energy-use intensities from Portfolio Manager to track energy savings and to require that participants re-benchmark facilities on a regular basis. The re-benchmarking process can be streamlined by utilities through automated benchmarking.
- Conduct a process evaluation to identify what aspects of the program are working well and what aspects could be improved.

Program Resources

EPA provides the following resources to assist Program Sponsors in launching Building Performance with ENERGY STAR

Program Element	*Tools and Resources*	*How These Tools or Resources Help You*
TARGET MARKETING / RECRUITING	**ENERGY STAR Challenge**	Utilize fact sheets with information on energy use, energy efficiency opportunities, partnership possibilities, and key leverage points for major sectors. **energystar.gov/challenge**
	ENERGY STAR Publications	Order or download brochures, posters, and other materials **energystar.gov/publications**
	ENERGY STAR Partnership	Encourage customers to join the ENERGY STAR partnership to gain senior management commitment to improving energy performance, while opening the door to potential national recognition from EPA. **energystar.gov/join**
BENCHMARKING	**Portfolio Manager**	Measure the energy performance of buildings on a 1-100 scale relative to similar buildings across the country, identify and prioritize improvement opportunities, and track improvement over time. **energystar.gov/benchmark**
	Benchmarking Starter Kit	Refer customers to this one-stop shop with the key information needed to benchmark a building.
	ENERGY STAR Online Training: Live, Pre-Recorded, and Self-Guided	Use ENERGY STAR trainings to educate customers, trade allies, and program staff about Portfolio Manager and other tools and resources available. **energystar.gov/businesstraining**
STRATEGIC ENERGY MANAGEMENT / ACTION PLAN DEVELOPMENT	**Guidelines for Energy Management**	Educate customers on EPA's proven strategy for superior energy management. **energystar.gov/guidelines**
	Building Performance with ENERGY STAR Action Planning Guidelines	Develop a plan to help secure financial and human capital for your energy projects, ensure progress and accountability, and document facility and portfolio-wide commitments.
	Building Upgrade Manual	Learn about EPA's strategic five-stage approach for upgrading buildings to realize energy savings.**energystar.gov/bldgmanual**
	Teaming Up to Save Energy	Assist customers with forming effective energy teams, using this "how-to" guide. **energystar.gov/energyteam**
	Financial Value Calculators	Educate customers on the use of EPA's Financial Evaluation Tools to quantify savings opportunities and evaluate financing options. **energystar.gov/financialevaluation**
WHOLE-BUILDING PERFORMANCE ASSESSMENT	**Service and Product Provider (SPP) Directory**	Leverage ENERGY STAR Service and Product Provider partners as trade allies in outreach and program implementation. **energystar.gov/spp**
	Guidelines for Conducting Performance Assessments	Review key elements to be included in Building Performance with ENERGY STAR performance assessments
WHOLE-BUILDING UPGRADES	**ENERGY STAR Label**	Help your customers earn the ENERGY STAR for qualified buildings that achieve a 75 or higher on the energy performance scale. **energystar.gov/eslabel**
PERFORMANCE MONITORING AND VERIFICATION	**Portfolio Manager**	Track energy savings and improvement in the 1-100 energy performance scale by re-benchmarking with Portfolio Manager. **energystar.gov/benchmark**