

To Efficiency and Beyond!

Strategies for Improving Energy Performance



ENERGY STAR®

PortfolioManager®

Pre-Webinar Poll

1. Did you attend Part 2, “Using Benchmarking Results to Understand your Building’s Performance”?

- A. Yes
- B. No

2. How many properties are you benchmarking in Portfolio Manager?

- A. 1
- B. 2-19
- C. 20+

3. Does your organization currently have an energy management action plan in place?

- A. Yes, we have a well-established energy management plan
- B. Yes, but we would like to improve
- C. No, but we’re planning to develop one - that’s why I’m here!
- D. No, we’re not planning to develop one
- E. Not sure

“Basics of Building Benchmarking for Ordinance Compliance” Webinar Series

- **Part 1** (March 14 and April 27)

A Beginner’s Guide to Using Portfolio Manager for Benchmarking Law Compliance

- **Part 2** (March 28 and May 10)

Using Benchmarking Results to Understand your Building’s Performance

- **Part 3** (April 4 and June 8)

To Efficiency and Beyond! How to Benefit from Benchmarking Compliance with Strategies for Improving your Energy Performance

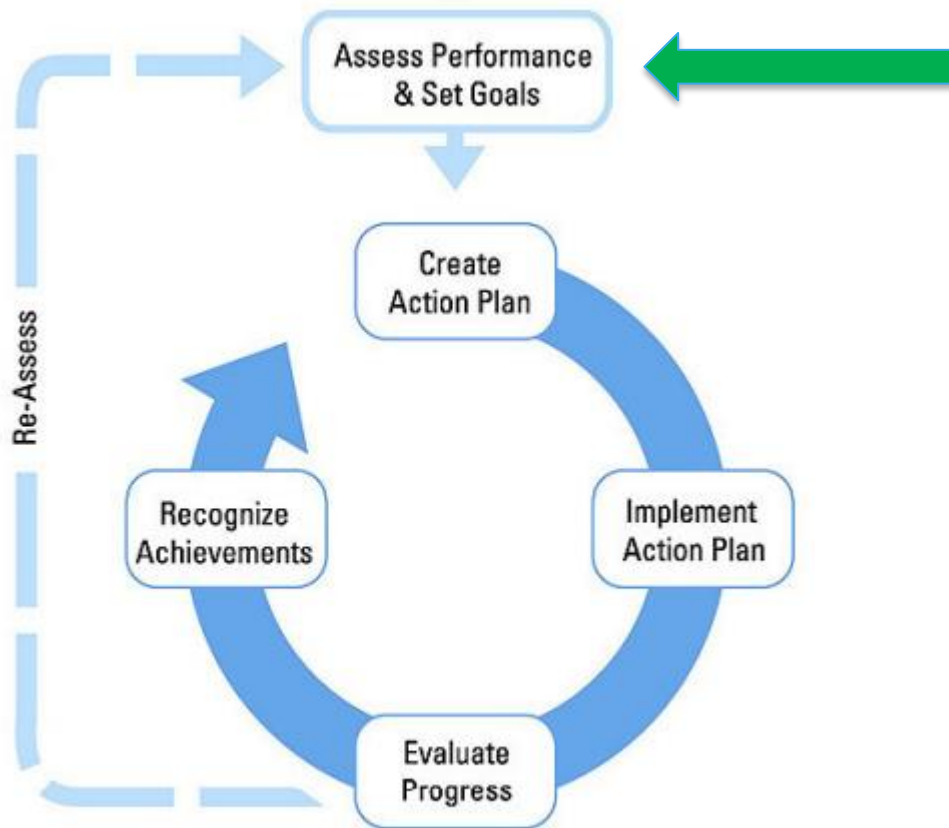
- **Compiled Benchmarking for Ordinance Compliance webinar series slides and all past webinar recordings:**

https://www.energystar.gov/buildings/training/complying_ordinances

Learning Objectives

- Developing an energy management action plan
- Identifying opportunities for low and no-cost energy savings

Benchmarking is the Beginning, Not the End!

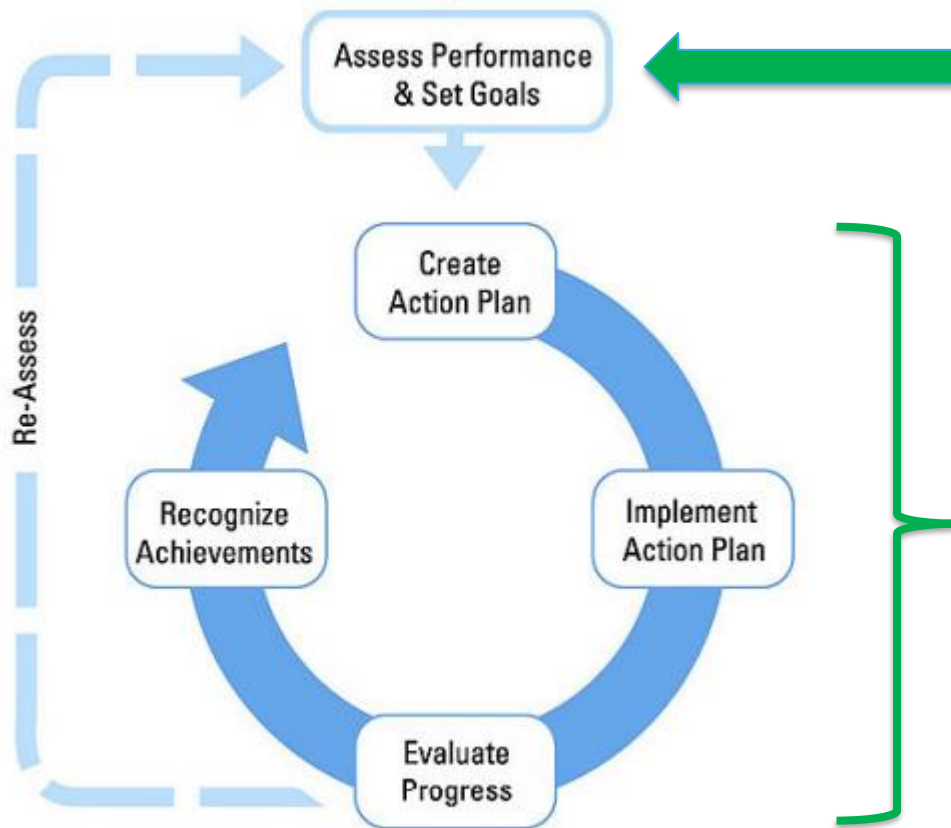


Are you benchmarking for the first time because of a state or local ordinance?

You are probably here.

[The ENERGY STAR Guidelines for Energy Management](#)

Benchmarking is the Beginning, Not the End!



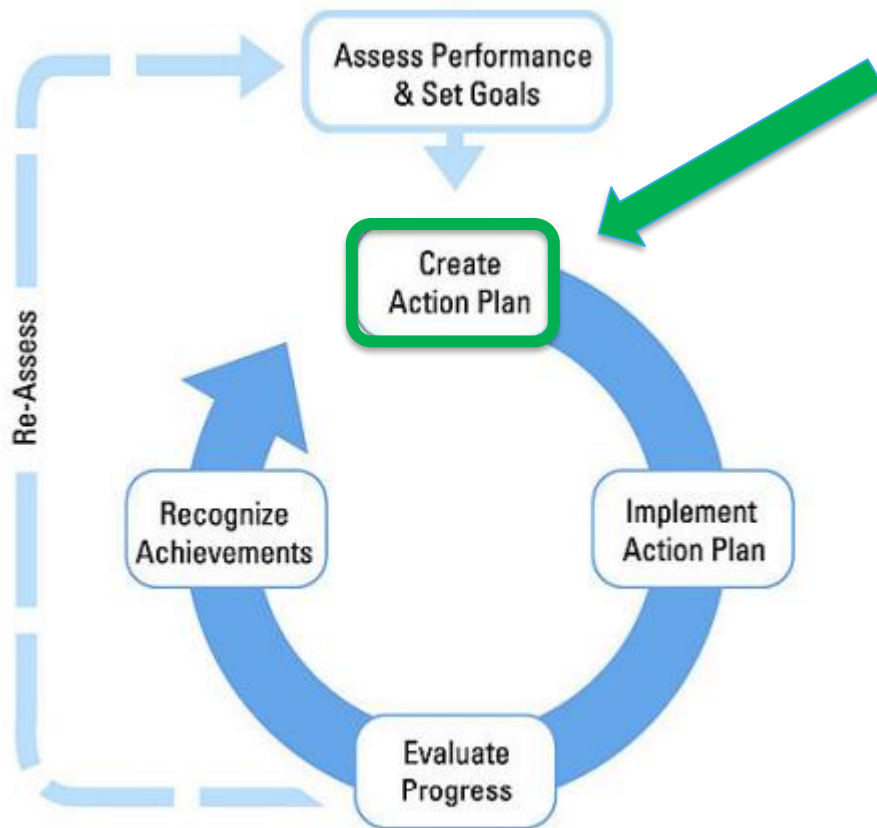
Are you benchmarking for the first time because of a state or local ordinance?

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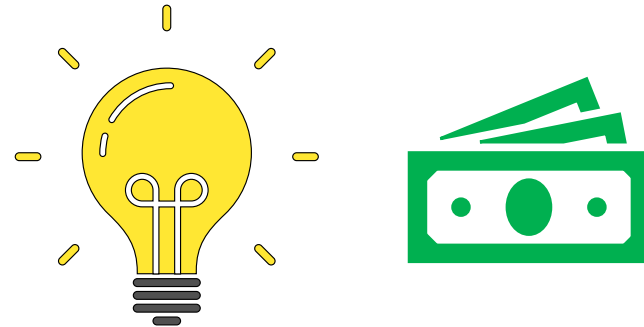
But this is where the energy and cost savings get realized!

Benchmarking is the Beginning, Not the End!

After you have successfully benchmarked, it's time to use those results to make a plan!



Establishing an Energy Manager or Management Team



Your team might include (if applicable)...

- ❖ Building/Facilities Management
 - Operations and Maintenance
 - Engineering
 - Utilities
 - Environmental Health and Safety
- ❖ Purchasing
- ❖ Corporate Real Estate and Leasing
- ❖ Contractors and Suppliers



Four Preliminary Energy Management Team Decisions

1. How will we collect and track our data?

- Using ENERGY STAR Portfolio Manager?
- Spreadsheets?
- Do you need to work with a service provider?
- Do you need to coordinate with your utility?

2. What baseline period are we going to use?

- Determine the starting point against which you will measure progress

3. What key performance indicators are we going to use to track progress?

- ENERGY STAR Score (1 to 100)
- Energy Use Intensity (kBtu / f²)
- Total Energy Cost and Energy Cost Intensity (\$ / f²)

4. Are we going to set property-level and/or portfolio-wide performance goals

If you have more than one building, you can also consider...

Which building(s) are we going to prioritize first?

- Rank your buildings' performance to prioritize investments

Where do you start?

Which building(s) are you going to prioritize first?

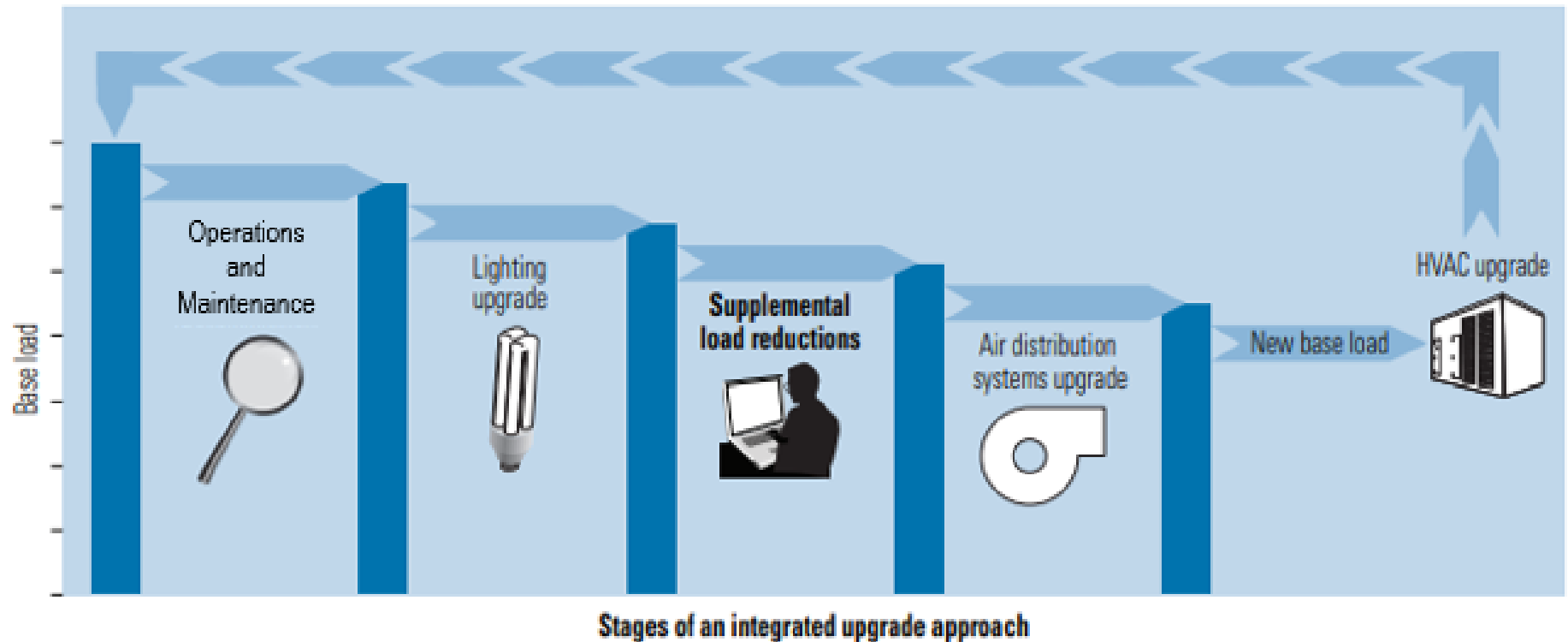
- Rank your buildings' performance to prioritize your team's focus and investment
- Good candidates for prioritization could have:
 - A low ENERGY STAR score or a high energy use intensity (EUI)
 - A stagnant ENERGY STAR score, even after implementing energy saving projects
 - Persistent failure of building equipment, control systems, or both
 - Excessive occupant complaints about temperature, airflow, and comfort

Pop Quiz!

Which of the following is NOT a decision that your energy management team will make in the initial scoping phase?

- A. Which metrics you will use to track your progress
- B. The type of new HVAC system you're going to install at your building(s)
- C. Which building(s) you will prioritize for energy efficiency improvements
- D. How you will collect and store your energy data

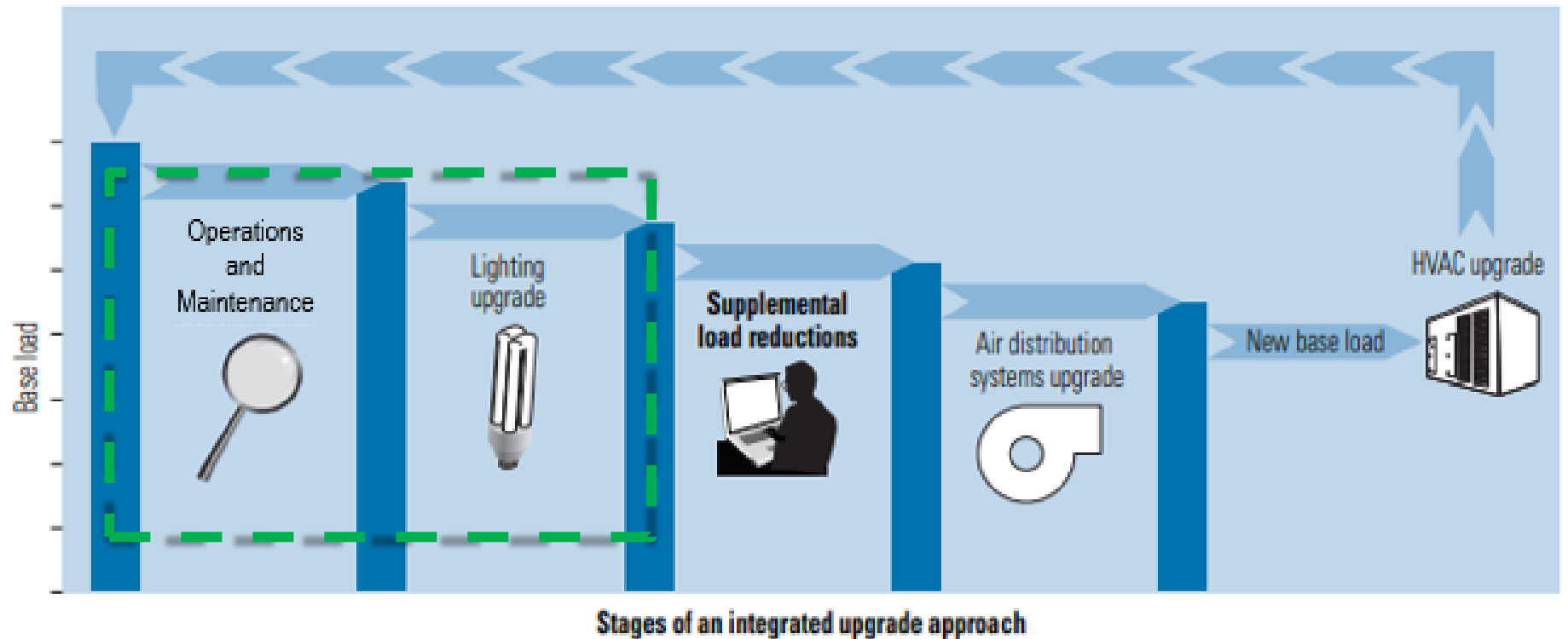
The Staged Approach to Energy Management



Courtesy: E SOURCE

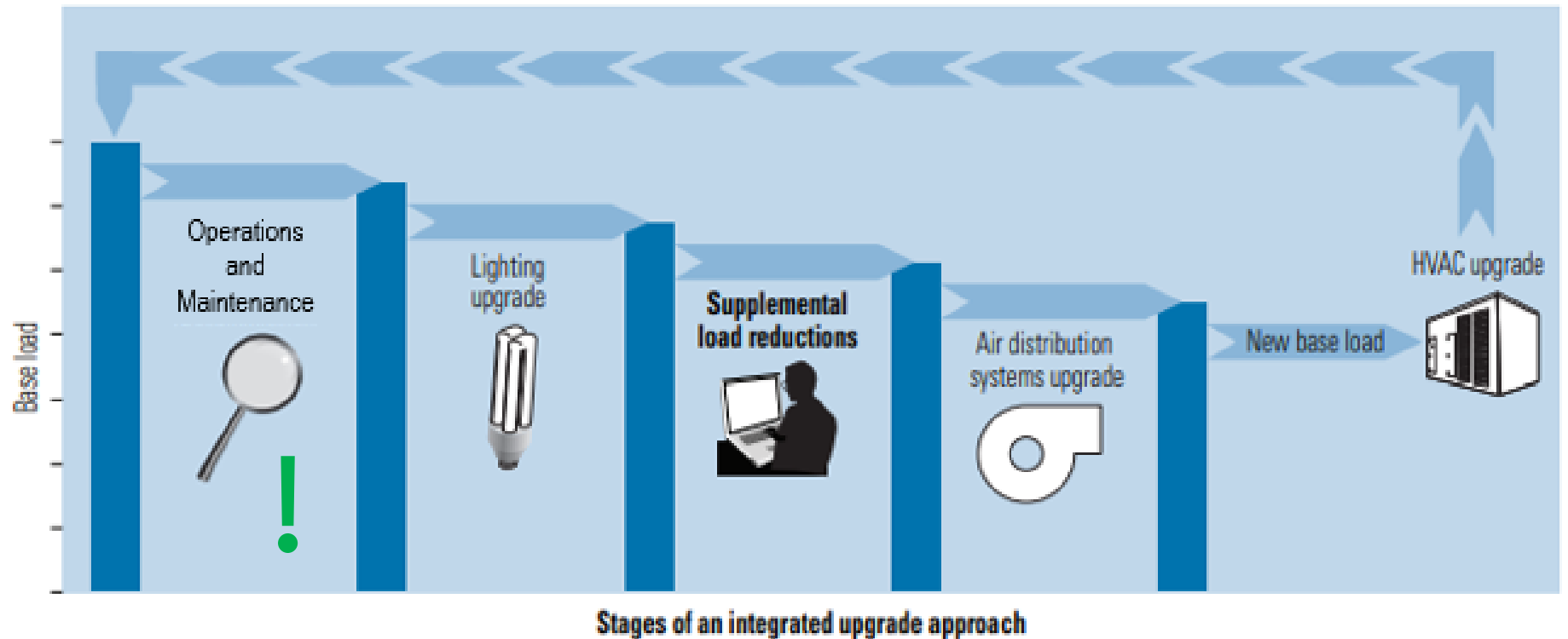
[ENERGY STAR Building Upgrade Manual](#)

The Staged Approach to Energy Management



Courtesy: E SOURCE

The Staged Approach to Energy Management



Courtesy: E SOURCE

Identifying Opportunities for Savings With an Energy Assessment

Four Types of Energy Assessments

1. Informal Walkthrough

- Facilities and engineering staff within your organization (if applicable) attempt to identify low and no-cost saving opportunities

2. ENERGY STAR Energy Treasure Hunt

- Facilities and engineering staff within your organization (if applicable) plus non-engineering staff members attempt to identify low and no-cost saving opportunities
- Great opportunity for team building and identifying low and no-cost energy saving opportunities

3. Formal Retrocommissioning or Recommissioning

- Focused on operations and maintenance, with the intention of implementing as many low and no-cost recommendations as possible
- Typically performed by a 3rd party provider

4. ASHRE Level II or III Energy Audit

- Can include low and no-cost ECMs, but typically intended to identify and prioritize capital expenditures through a cost-benefit analysis
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Identifying Opportunities for Savings With an Energy Assessment

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What's an Energy Treasure Hunt?

- Finds no and low-cost energy savings opportunities
- Involves internal staff who may be supplemented by outside experts
- Engages senior management / financial decision makers
- Establishes an action plan for implementation



Dressing as a pirate is optional, but often effective!

Get started: https://www.energystar.gov/industrial_plants/treasure_hunt

Treasure Hunts vs Audits

- **Treasure hunts...**
 - Are less threatening to employees than audits or assessments
 - Find “opportunities,” not problems
 - Look for operational & behavioral opportunities
 - Engage employees responsible for implementation
 - Help build and develop energy management teams



Adapting the Treasure Hunt

Most parts of planning and preparing for a treasure hunt can be done remotely or virtually:

Phase	Step	Remotely	On-site
Preparation	Facility selection and scheduling	X	
	Identify and confirm team members	X	
	Data collection and analysis	X	
	Prepare detail sheets & calculators	X	
	Develop agenda and plan	X	
Pre-hunt training	Meet with team leaders	X	
	Train participants	X	
Treasure hunt event	Open presentation	X	
	Building walkthrough		X
	Team summaries / Detail sheet work	X	
Prioritize & follow-up	Create implementation plans	X	
	Check-ins / huddles	X	

Strategies for the Hybrid Work Era

- **Virtual meeting platforms**
 - Team pre-training
 - Team meetings & discussion of findings
 - Report out to management
- **Remote / virtual treasure hunting**
 - Deeper data analysis of BMS, data historians, utility records, submeters
 - Comparative analysis of equipment, operating & management practices
- **Focusing & targeting on-site hunting activities**
 - Direct on-site team members to focus on specific areas & equipment
 - Target equipment and processes for on-site teams to inspect
- **Planning a treasure hunt as a “welcome back” activity**
 - This could be a great team-building activity for your organization after a long period away from the building

Treasure Hunt Tools for Specific Building Types

EPA has published energy “treasure maps” for the following property types:

- Convenience stores
- Hotels, motels, and inns
- Hospitals
- K-12 schools
- Labs
- Multifamily housing
- Offices
- Restaurants and commercial kitchens
- Retail stores, wholesale clubs, and supercenters
- Senior living
- Student housing
- Supermarkets and grocery stores
- Vehicle dealerships
- Worship facilities
- All other commercial buildings



https://www.energystar.gov/buildings/about_us/campaigns/treasure_hunt/treasure_maps

Treasure Hunt Tools for Specific Building Types

Example treasure map for multifamily properties:



Treasure Map FOR MULTIFAMILY PROPERTIES



COMMON AREAS

Lighting

- In preparation for the Treasure Hunt, explore utility incentive programs for lighting upgrades and lamp replacements, for both common areas and particularly for upgrades in resident units.
- Identify where lights may have been left on unnecessarily in unoccupied spaces, such as activity rooms, offices, and vacant units. Record your observations.
- Observe exterior areas such as parking lot lights and decorative exterior lighting during the day to determine if lighting has been left on in the daylight. Record your observations.
- Identify and assess opportunities to use automated lighting controls:
 - Occupancy/motion sensors for low-traffic areas.
 - Timers or daylight sensors to dim or turn off exterior and parking lot lights during the day.
 - Timers to turn off decorative lighting.
 - Dimming controls in locations where there is natural lighting (e.g., near windows, skylights, and light tubes).



Building Envelope

- Inspect doors and windows to identify gaps or cracks that can be repaired.
 - Note damaged or missing weather stripping.
- Inspect trash room and trash chute doors to identify gaps, cracks, and worn and/or leaky door seals/gaskets that can be repaired.
- Note air leaks that should be sealed with caulking or other sealant.
- Inspect insulation levels and identify inadequacies to be addressed (including loading docks and garage doors, if applicable).
- Assess opportunity to install vinyl curtains in loading areas, if applicable.
- Note any doors left open to the outside and other unheated or uncooled areas.
- Assess the opportunity to install solar film or other window coverings on east, west, or south exposures to reduce solar heat gain and heat loss.
- In warm climates, assess the opportunity to install a white roof covering when repairing or replacing the roof.

Treasure Hunt Case Studies: Multifamily Housing

Organization: **AMLI Residential**

Size of Treasure Hunt Team: **5 people**

Top O+M Savings Opportunities Identified:

- ✓ Implement checks to ensure correct set points in vacant and common areas
- ✓ Insulate hot water heater supply piping within the HVAC closets
- ✓ Use power management setting on business center and leasing office computers

Potential Annual Savings Identified from the Treasure Hunt: **\$7,880**

Treasure Hunt Case Studies: Commercial Real Estate

Organization: **Bozzuto Management Company**

Size of Treasure Hunt Team: **10 people**

Top O+M Savings Opportunities Identified:

- ✓ Implement LED retrofits
- ✓ Install lighting controls and sensors
- ✓ Establish thermostat setting standardization

Potential Annual Savings Identified from the Treasure Hunt: \$10,190

Treasure Hunt Case Studies: K-12 School

Organization: **Sherwood High School**

Size of Treasure Hunt Team: **24 people**

Top O+M Savings Opportunities Identified:

- ✓ Turn off classroom lights when not in use
- ✓ Keep classroom doors closed outside of passing periods to keep conditioned air in the rooms
- ✓ Add occupancy sensors in classrooms and gyms
- ✓ Put timers on the TVs in hallways and commons
- ✓ Turn off SMART Boards in classrooms if not in use

Potential Annual Savings Identified from the Treasure Hunt: **TBD**

Energy Treasure Hunts...

1. Help you identify no and low-cost energy savings opportunities
2. Get everyone in your organization involved, including senior management and financial decision makers
3. Establish a scope for short-term energy management actions

Identifying Opportunities for Savings With an Energy Assessment

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Identifying Opportunities for Savings With an Energy Assessment

- **Reach out to your local utility!**
 - ❖ Most utilities have resources to help you identify trusted contractors in your local area
 - ❖ Many utilities also offer incentives and rebates for commercial building energy audits and retrocommissioning projects
- **Reach out to an ENERGY STAR Service and Product Provider!**
 - ❖ The service provider database includes hundreds of companies that have experience working with Portfolio Manager and can help you reach your goals
 - ❖ View the online list of [ENERGY STAR Service & Product Provider partners](#)
- **Tips for choosing a provider:**
 1. Ask for current references that you can contact about work the company has performed
 2. Ask the company to provide a cost-estimate in writing
 3. Make sure this company is licensed and insured
 4. The company should certify that their work conforms to state and local regulations and codes
 5. Verify that the company carries workers' compensation insurance

Most Active Service & Product Providers

ENERGY STAR Service and Product Providers (SPPs) have demonstrated their expertise and achievements by meeting strict ENERGY STAR program requirements for benchmarking customer buildings using Portfolio Manager and gaining ENERGY STAR certification for buildings. Use this directory to find SPPs that have done the most for their clients through ENERGY STAR in the past 12 months.

Also see these additional provider partners: [Most Active Service Providers That Exchange Data with Portfolio Manager via Web Services](#), [Most Active Architecture & Engineering Firms](#), and [Most Active Industrial Service & Product Providers](#).

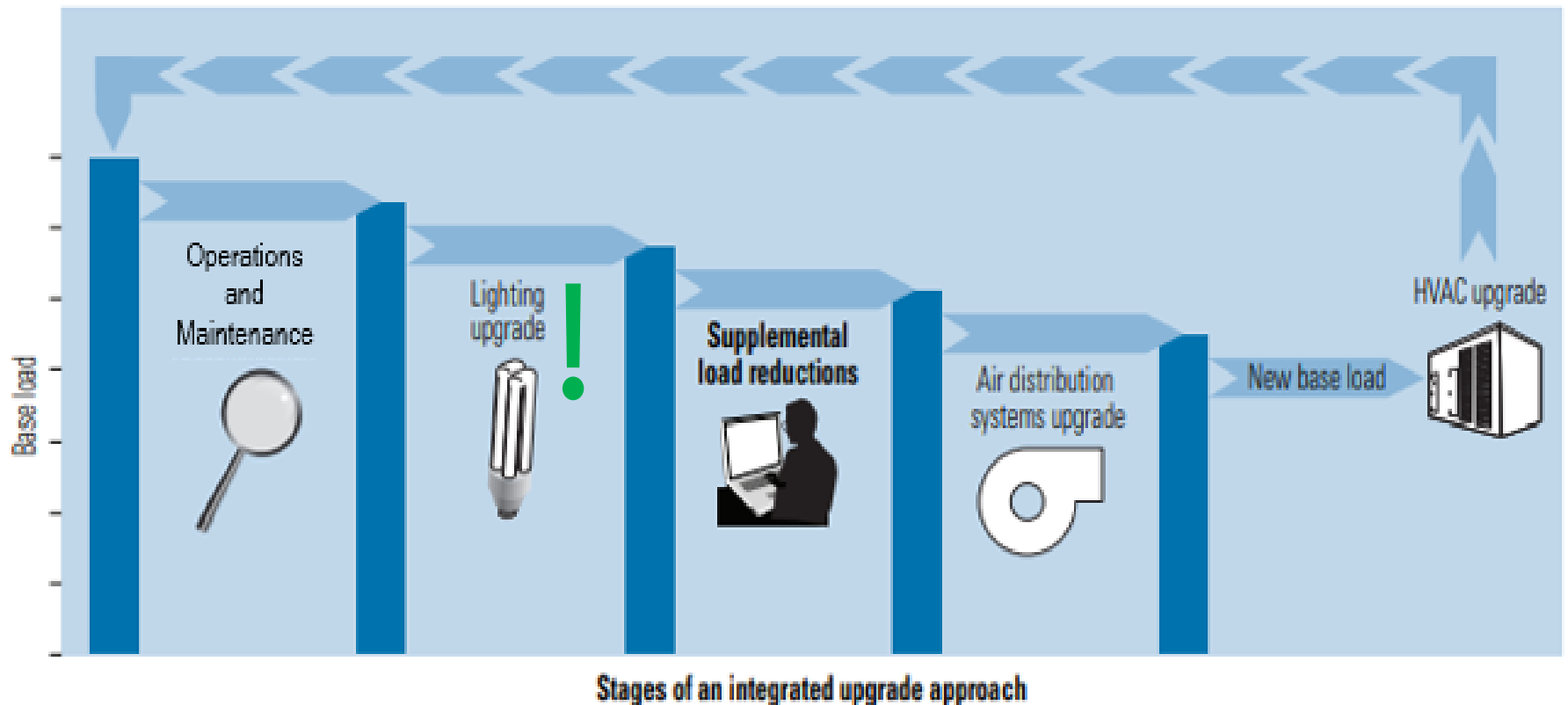
This list shows SPP activity for the past 12 months, updated quarterly.

Benchmarked properties located in Canada are not included in the totals. For information on Canadian benchmarking, please contact nrcan.buildings-batiments.nrcan@canada.ca.

Please note, the links below leave the energystar.gov domain. For more information visit our [Exit Disclaimer](#).

1 - 10 of 276		Show: 25 50 100 All		
1 2 ... 27 28 Next →				
Company Name	Company Type	Contact	Benchmark	ENERGY STAR Certifications
Schneider Electric	Energy or Architecture Related Professional, Consulting or Procurement Services;Energy Management	Erik Mohn 502-614-2348 (phone) erik.mohn@se.com	48200	506
ENGIE Impact	Energy or Architecture Related Professional, Consulting or Procurement Services;Energy Management	Paige Janson 800-767-4197 (phone) info@engieimpact.com	46444	376
Conservice, LLC	Energy or Architecture Related Professional, Consulting or Procurement Services;Energy Management;Energy Information and Data Management	Brett Kraus 435-713-2136 (phone) bkraus@conservice.com	29724	1298
Measurabl, Inc.	Energy Information and Data Management	Measurabl Team 619-719-1716 (phone) info@measurabl.com	25980	1609

Identifying Opportunities for Savings



Courtesy: E SOURCE

Tips for a Successful Lighting Upgrade Project



Before you begin any lighting project:

1. Check with your electric utility to see if they offer lighting incentives or rebates
2. Use the ENERGY STAR rebate finder to find special offers on ENERGY STAR-certified lighting products: www.energystar.gov/rebate-finder
3. In addition to rebates, you can find ENERGY STAR certified lighting using the product finder: <https://www.energystar.gov/productfinder/>

Three tips for getting started:

- ✓ **Replace T12 fluorescent systems with T8 or TLED systems and replace incandescent and CFL lamps with ENERGY STAR certified LED lamps or luminaires**
 - ❖ LEDs use up to 90% less energy than incandescent lighting and last 35 to 50 times longer.
- ✓ **Install LED exit signs**
 - ❖ LED exit signs can save \$10 per sign annually in electricity costs.
- ✓ **Install occupancy sensors to automatically turn off lights when spaces are vacant.**
 - ❖ Occupancy sensors can save between 15 and 30 percent on lighting costs.



Developing Your Energy Management Plan

1. Start small

- Focus on low- and no-cost O&M measures and lighting upgrades
- It's ok if your plan only includes these steps!

2. Set up project goals across multiple time-horizons

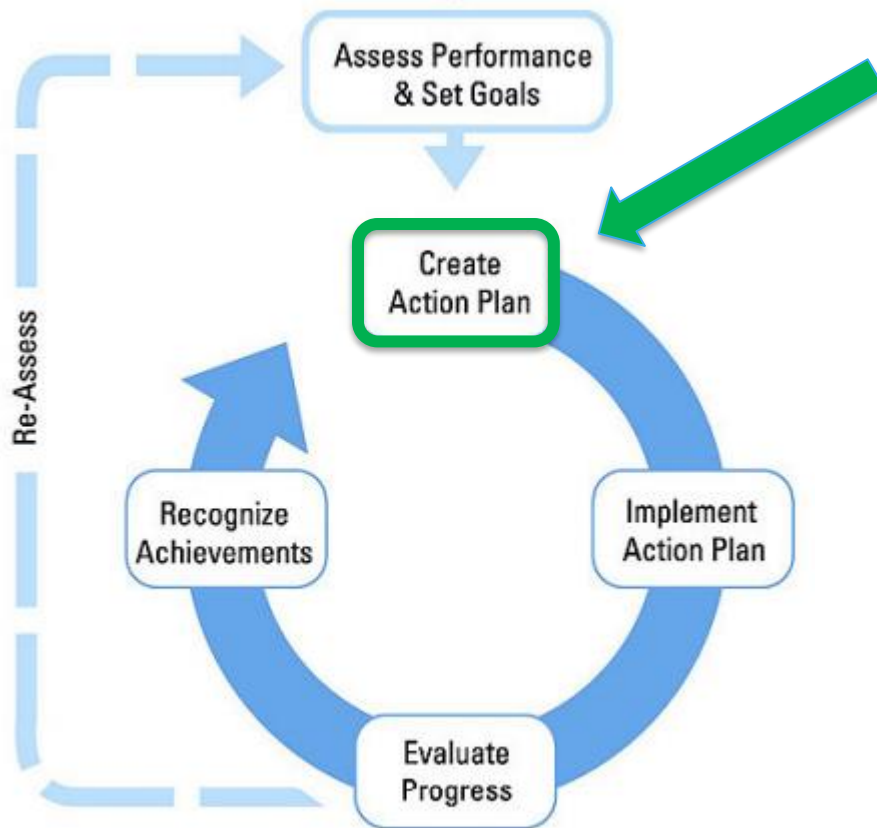
- This year (O&M and lighting)
- Next year (targeted retrofit projects identified through an energy audit)
- Next 3-5 years (large capital projects such as HVAC upgrades)

3. Set up a process for continuous evaluation and reassessment of goals and priorities

- No matter what your goals are, make sure you have a process to evaluate your progress
- Over time, you can start to set more ambitious and aggressive goals

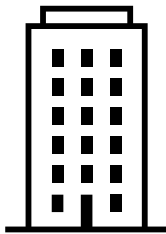
Benchmarking is the Beginning, Not the End!

With this background in mind, we hope you have some of the tools you need to develop your action plan!



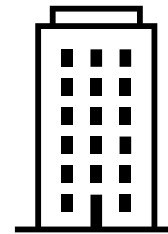
Remember...

- Getting started with energy management doesn't have to be scary or expensive!
- There are things you can do right now to get started
- You can make a lot of progress between now and the next reporting cycle.



74

2022 ENERGY STAR Score



80

2023 ENERGY STAR Score

2023 Energy Management Challenge

- 1. **Write down** your 2023 energy management plan
 - It only needs to be one or two paragraphs, just do it!
- 2. **Implement one** energy management action over the course of the year
 - Host an energy treasure hunt
 - Conduct an energy audit
 - Install LED lighting
 - Re-tune your building's boiler

Analyze Progress and Performance on the Reporting Tab

Choose from Pre-set Chart & Graph Options

View and Use Custom Report Templates

View and Use Standard Reports

The screenshot displays the 'Reporting' tab of a software interface. At the top, there are navigation tabs: 'MyPortfolio', 'Sharing', 'Reporting', and 'Recognition'. The main content area is divided into two sections. The left section, titled 'Charts & Graphs', features a large purple bar chart with a central circular icon depicting a factory and a sun. Below the chart is the text: 'Weather Normalized Source EUI' and 'How much total primary fuel would be required by my properties, under average weather conditions?'. The right section, titled 'ENERGY STAR Performance Documents', contains a list of document links: 'Statement of Energy Performance (SEP)', 'Statement of Energy Design Intent (SEDI)', 'Data Verification Checklist', 'Progress & Goals Report', 'ENERGY STAR Scorecard', and 'Water Scorecard'. Below these sections, there are two tabs: 'My Custom Reports' and 'ENERGY STAR Reports'. A 'Create a New Template' button is located to the right of the 'ENERGY STAR Reports' tab. Below the tabs is a table with the following data:

Name	Status	Action
Partner of the Year Report	Last Modified: 1/27/2020 1:42 PM	I want to...
ENERGY STAR Certification Status	Last Modified: 1/27/2020 10:10 AM	I want to...
Emissions Performance	Last Modified: 1/28/2020 12:01 PM	I want to...
Water Performance	Last Modified: 1/24/2020 11:36 AM	I want to...
Fuel Performance	Last Modified: 1/21/2020 7:49 AM	I want to...
Sustainable Buildings Checklist Report	Last Modified: 1/14/2020 10:33 AM	I want to...

View and Download Performance Documents

Generate Custom Report Templates

Let us know in the chat...

- What's one goal you want to accomplish in the next year?
 - Develop an energy management plan?
 - Complete a treasure hunt?
 - Perform an energy audit?
 - Perform a lighting retrofit?

Presentation Resources: Strategies for Improving Energy Performance

- Energy Treasure Hunt homepage:
 - https://www.energystar.gov/buildings/about-us/campaigns/treasure_hunt
- ENERGY STAR Rebate Finder:
 - www.energystar.gov/rebate-finder
- ENERGY STAR Product Finder:
 - <https://www.energystar.gov/productfinder/>
- ENERGY STAR Building Upgrade Manual:
 - <https://www.energystar.gov/buildings/tools-and-resources/building-upgrade-manual>
- Guidelines for Energy Management:
 - <https://www.energystar.gov/buildings/reference/guidelines>
- Find an ENERGY STAR Service and Product Provider:
 - https://www.energystar.gov/buildings/save_energy_commercial_buildings/expert_help/find_spp

Additional ENERGY STAR Resources for Improving Performance

General Program Resources:

- [Checklist of Energy-Saving Measures](#)
 - Low-cost measures
 - Energy-efficiency measures with a rapid payback
 - Strategies for engaging occupants in energy efficiency
- [Guide to purchasing energy-saving products](#)
- [Guide to installing renewable energy systems](#)
- [Understanding the relationship between water and energy savings](#)
- [Financing energy efficiency projects](#)

Resources for Small Businesses and Congregations:

- [ENERGY STAR Action Workbook for Small Business](#)
- [ENERGY STAR Action Workbook for Congregations](#)

EPA vs. Jurisdiction Responsibilities

The EPA and ENERGY STAR can answer questions about...

- How to use Portfolio Manager
- Portfolio Manager metrics such as the ENERGY STAR score
- Portfolio Manager alerts and data quality checks
- How to connect with other Portfolio Manager users including utilities and 3rd party service providers



Your state or local jurisdiction can answer questions about...

- Which buildings are subject to the benchmarking law
- Which data and time periods are required for reporting
- Due dates for submission and fines
- Confirmation that your report was received and/or complete



Benchmarking Law Compliance Resources

- How to Use Portfolio Manager to Comply with State and Local Benchmarking Ordinances:
 - <https://www.youtube.com/watch?v=WUT3Tpic3rw>
- How to respond to Data Requests in Portfolio Manager:
 - <https://www.energystar.gov/buildings/tools-and-resources/how-respond-data-requests-portfolio-manager>
- How to share properties in Portfolio Manager:
 - <https://www.energystar.gov/buildings/tools-and-resources/how-share-data-other-users-portfolio-manager>
- Contacts for state and local benchmarking ordinances:
 - <https://energystar-mesa.force.com/PortfolioManager/s/article/Contacts-for-state-local-compliance-ordinances-1600088543441>
- Finding your Standard ID:
 - <https://energystar-mesa.force.com/PortfolioManager/s/article/Standard-IDs-in-Portfolio-Manager-1600088552120>
- Utility data access map: <https://energystar.gov/utilitydata>
- List of services providers that perform Portfolio Manager benchmarking services:
 - <https://www.energystar.gov/buildings/facility-owners-and-managers/existing-buildings/save-energy/expert-help/find-energy-star-service-a-0>

Benchmarking Law Compliance FAQs

State & Local Benchmarking Requirements

ARTICLES

Contacts for state/local compliance ordinances

3954 Views • Jan 3, 2022 • Knowledge

Standard IDs in Portfolio Manager

6578 Views • Dec 8, 2021 • Knowledge

List of Utilities offering Web Services

4837 Views • Oct 6, 2021 • Knowledge

How do I get my energy data from my utility? I need to submit a benchmarking report to my city/state.

29

ARTICLES

FOLLOW

TRENDING ARTICLES

Standard IDs in Portfolio Manager

List of Utilities offering Web Services

Contacts for state/local compliance ordinances

How do I enter a Standard ID?

How much does it cost for someone to do my benchmarking?

FAQs are available at www.energystar.gov/buildingshelp

“Basics of Building Benchmarking for Ordinance Compliance” Webinar Series

- **Part 1** ([register for April 27 session](#))

A Beginner’s Guide to Using Portfolio Manager for Benchmarking Law Compliance

- **Part 2** ([register for May 10 session](#))

Using Benchmarking Results to Understand your Building’s Performance

- ✓ **Part 3** ([register for June 8 session](#))

To Efficiency and Beyond! How to Benefit from Benchmarking Compliance with Strategies for Improving your Energy Performance

https://www.energystar.gov/buildings/training/complying_ordinances

Thank you for attending!

Questions?

Slides will be sent to all webinar registrants after today's session

If you have any questions on Portfolio Manager
or the ENERGY STAR program, contact us at:

www.energystar.gov/BuildingsHelp