



Thursday November 6, 2014



Welcome to the COMMERCIAL ENERGY BENCHMARKING INTRODUCTORY FORUM

Presented by:
Montgomery County USGBC-NCR
Montgomery County Department of Environmental Protection

Overview of the
new legislation

PRESENTER:

Michelle Vigen

Senior Energy Planner

Department of
Environmental Protection

ENERGY STAR's
Portfolio Manager

PRESENTER:

Leslie Cook,

Program Manager

U.S. Environmental
Protection Agency

Improving Access
to Utility Data

PRESENTER:

Manuel Vera

Program Manager

Pepco

Experience with
benchmarking &
benefits

PANELISTS:

Matthew Praske
Project Manager
WRIT

Eugenia Gregorio
Director of Corporate
Responsibility
The Tower Companies

COMMERCIAL ENERGY BENCHMARKING INTRODUCTORY FORUM

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City of
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MONTGOMERY COUNTY

2nd Annual

**ENERGY
SUMMIT**

February 18, 2015

Presented by

*USGBC National Capitol Region
Montgomery County Branch*

8:30AM - 2:00PM

**HILTON ROCKVILLE HOTEL
1750 ROCKVILLE PIKE, ROCKVILLE, MD**



Montgomery County Building Energy Benchmarking

November 6, 2014



Michelle Vigen, Senior Energy Planner
Department of Environmental Protection
Montgomery County

Why Benchmark?

*“Even if you don’t measure it,
you still must manage it.”*

So why not measure it?

- Track Costs: Energy is the largest non-fixed expense
- Market Transparency: Reward efficient operations
- Smart Business Management: Plan and project resources

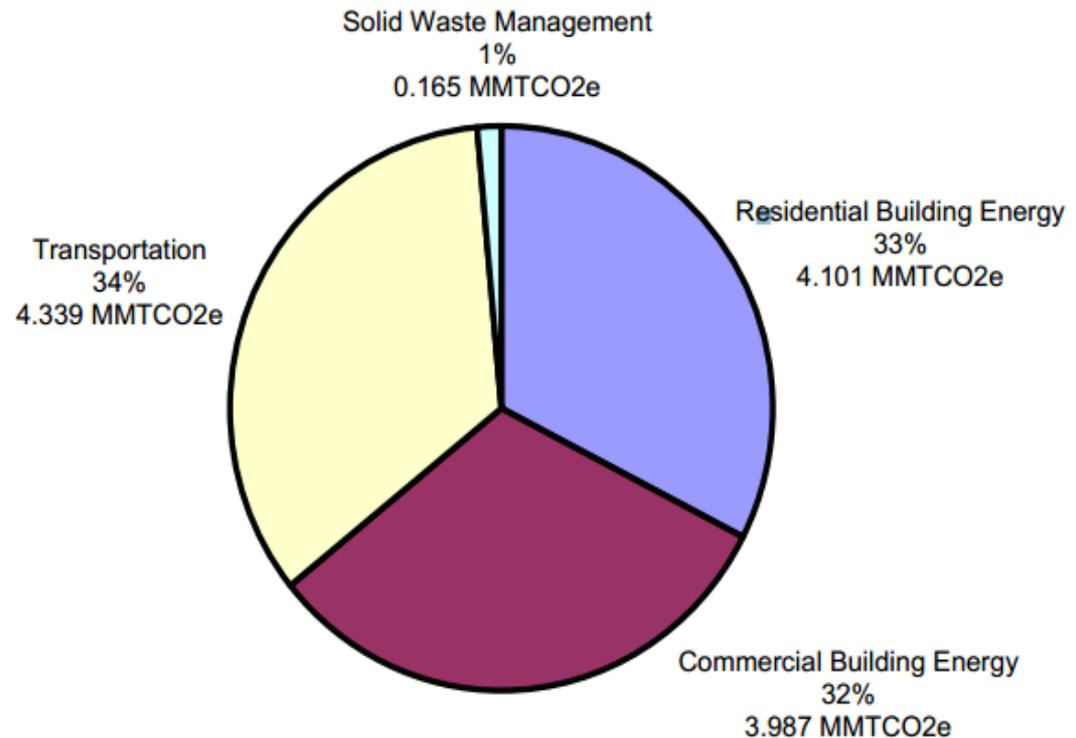
Why Benchmark?

County Goal

“to reduce greenhouse gas emissions 80% by 2050 from the FY05 base year...”

- Buildings are largest contributor to GHG
- Commercial is 1/3 of total

Figure ES-1 – Total Montgomery County GHG Emissions in FY05



Adopted Bill

- Introduced January 2014 and passed May 2014
- Following best practices of other jurisdictions, requires building owners of **certain** non-residential buildings report and disclose energy use
- Main Changes
 - County will “lead-by-example”
 - Non-residential (No multi-family)
 - Deadlines extended
 - Auditing and Retro-commissioning aspects removed
 - Development of a Work Group
- Benchmarking Bill 2-14 **≠** IgCC (Green Construction Code)

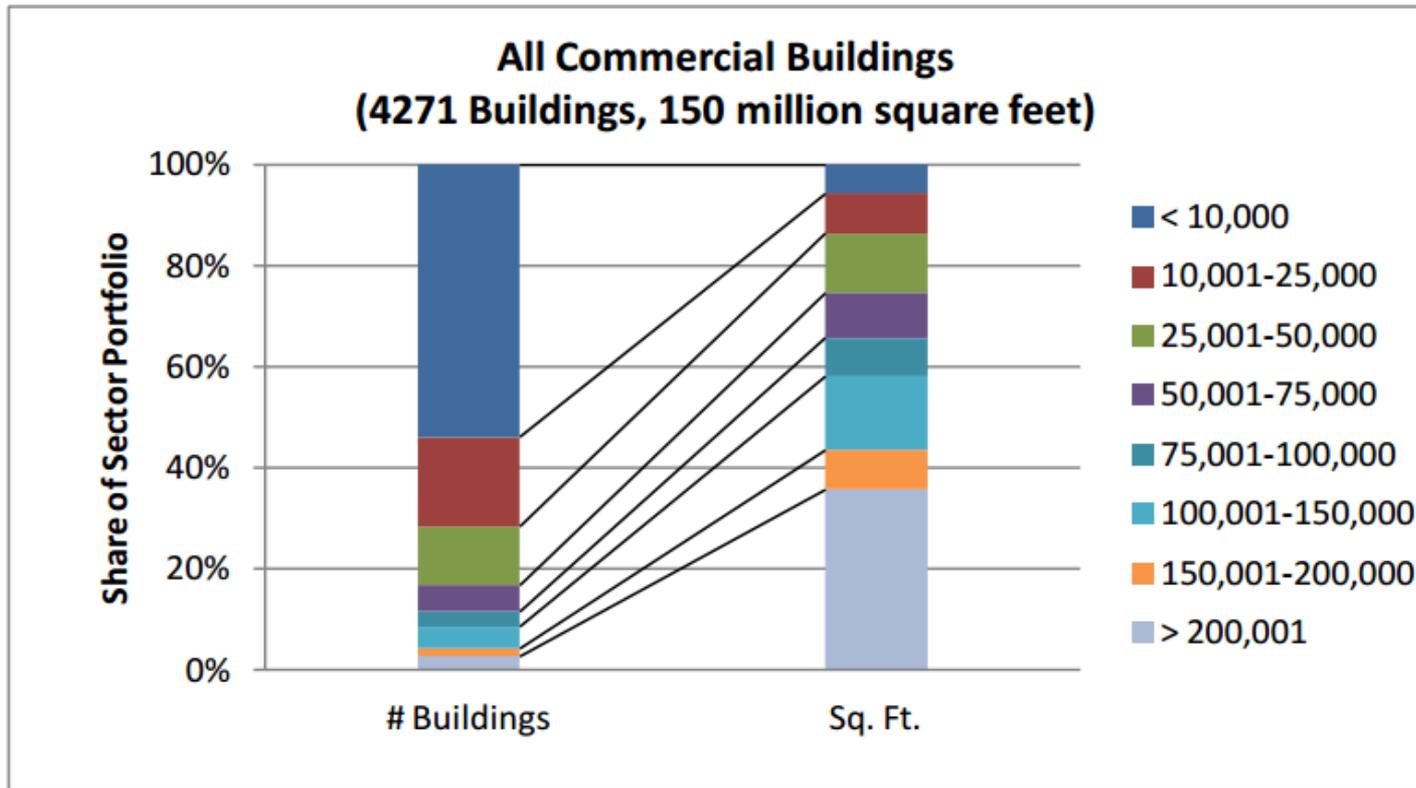
Scope

“Covered Buildings”

- County Buildings: 50k square feet and greater
 - Group 1: Non residential 250k square feet and greater
 - Group 2: Non residential 50k square feet up to Group 1
-
- The Covered Buildings focus on the largest and most cost-effective opportunities in the county

Impact

Figure ES-1. Distribution of Commercial Floor Space by Building Size



Deadlines

Group	Benchmarked Calendar Year	Deadline
County: 50k sq ft and greater	2014	June 1, 2015
Group 1: 250k sq ft and greater	2015	December 1, 2016
Group 2: 50k sq ft up to Grp 1	2016	December 1, 2017

Exceptions

Exempt Use Types

- Industrial/Manufacturing
- Communications/Transport/Utilities

Waivers

- Financial distress
- Less than 50% occupancy
- New construction

Covered Building List

- The list of covered buildings will be published on the County benchmarking website, details TBD. Sources:
 - Tax Assessor Data
 - CoStar

Tenants

Tenant Data

- **Need aggregate building data**
- **Multiple tenants:** Can request aggregate building data from utilities; no authorization needed for aggregate data
 - Thresholds to access aggregate data may vary by utility. E.g. Pepco provides aggregate if there are 5+ tenants.
- **Fewer tenants:** Request data or authorization no later than March 1
- **Tenants** to respond within 30 days

Portfolio Manager (PM)

Free software provided by the U.S. Environmental Protection Agency (EPA)

- 40% of commercial building space is in PM
- Standard for benchmarking in Boston, New York City, District of Columbia, Philadelphia, Seattle, and others
- Over 1000 buildings in Montgomery County have an account in Portfolio Manager

Data

Data Verification

- Quality control necessary for value of disclosure
- Every 3 years by a “licensed professional”
- Work group discussing details

Reporting and Disclosure

- 1-year grace period of non-disclosure (based on first compliance deadline)

Energy Efficiency and Conservation

Once you're benchmarked, pursue and track your energy savings...

- Utility Incentives for Energy Efficiency
 - Benchmarking costs eligible for incentives
- PACE financing: long-term 100% financing
 - Coming soon by Montgomery County
- Recognition for efficiency improvements
- ENERGY STAR Certification

What should I do now?

- ❑ Sign up for email updates

bit.ly/MoCoEnergyNews

- ❑ Learn about the bill

bit.ly/DEPbenchmarking

- ❑ Learn about Portfolio Manager

portfoliomanager.energystar.gov

Contact info and Next up!

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MD.gov

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Next: Manuel Vera

*Program Manager of
Commercial and Industrial
Energy Savings, Pepco*

Efforts to improve customer
access to data, and data
automation initiatives



Energy Use Data Access



Enabling Commercial Customers to Take Action

Presented by Manuel Vera
November 6, 2014

Why Measure and Track Energy Use?

- To better understand a facility's energy consumption over time.
- To compare a building's consumption patterns to others and evaluate over time.
- Enables building managers to “ask the right questions” so they can
 - Identify opportunities to improve energy efficiency.
 - Investments in efficiency upgrades
 - Behavior modification
 - Participate in demand response programs
 - Manage peak load
 - Reduce waste by detecting usage anomalies
- Reduce energy costs, help the bottom line
- Set corporate sustainability goals and track progress
- Reduce greenhouse gas emissions.

The Tools

- Interval electricity usage data
- Advanced Metering Infrastructure (“Smart Meters”)
- Third-party analytics software
 - Translate raw data into actionable information
 - Information on a single building or entire building portfolio
 - Current and historical usage reporting
 - Interactive facility location maps
 - Set corporate sustainability goals and track progress

The Tools

- Energy benchmarking
 - EPA's Portfolio Manager
 - Electricity, Natural Gas and Water usage
 - Building attributes
 - Building type (office, hospital, K-12 school)
 - Hours of operation
 - Square footage
 - Normalized for regional weather
 - Benchmarking score (0 to 100)
 - Required in the District of Columbia for buildings over 50,000 sf, approximately 1,700 buildings
 - District Department of the Environment will publish benchmarking scores annually
 - Pepco worked closely with DDOE during the implementation of the benchmarking mandate
 - Pepco and DDOE are partners in the Better Buildings Data Accelerator program (US EPA)

Current Methods to Access Pepco Usage Data

- Green Button Download
 - Available since 2012
 - Customers can access their data via My Account
- Green Button Connect
 - Data access was expanded in 2014
 - Enables machine-to-machine data transfer from Pepco to third-party applications
- CEO Online
 - Online portal available to approximately 4,000 commercial customers. Green Button capability
 - Capacity for additional 3,000 accounts

Resource Advisor

- Developed by Schneider Electric
- Provides customers with direct access to their usage data
- Analysis capabilities
- Building owners/managers can retrieve whole-building, aggregate usage data
- Automated uploads of usage data into Portfolio Manager for energy benchmarking
- Available to DC users in Q4 2014
- Availability will be expanded in 2015 for Maryland customers

The Challenge

- Give customers what they want, in a timely manner
- Includes building owners, who may not be customers of Pepco
- New billing system currently under development. Expected completion in 2015
- Unable to attach external systems during development
- Manual process for fulfilling usage requests
- Provide a single source of data access for customers and building owners

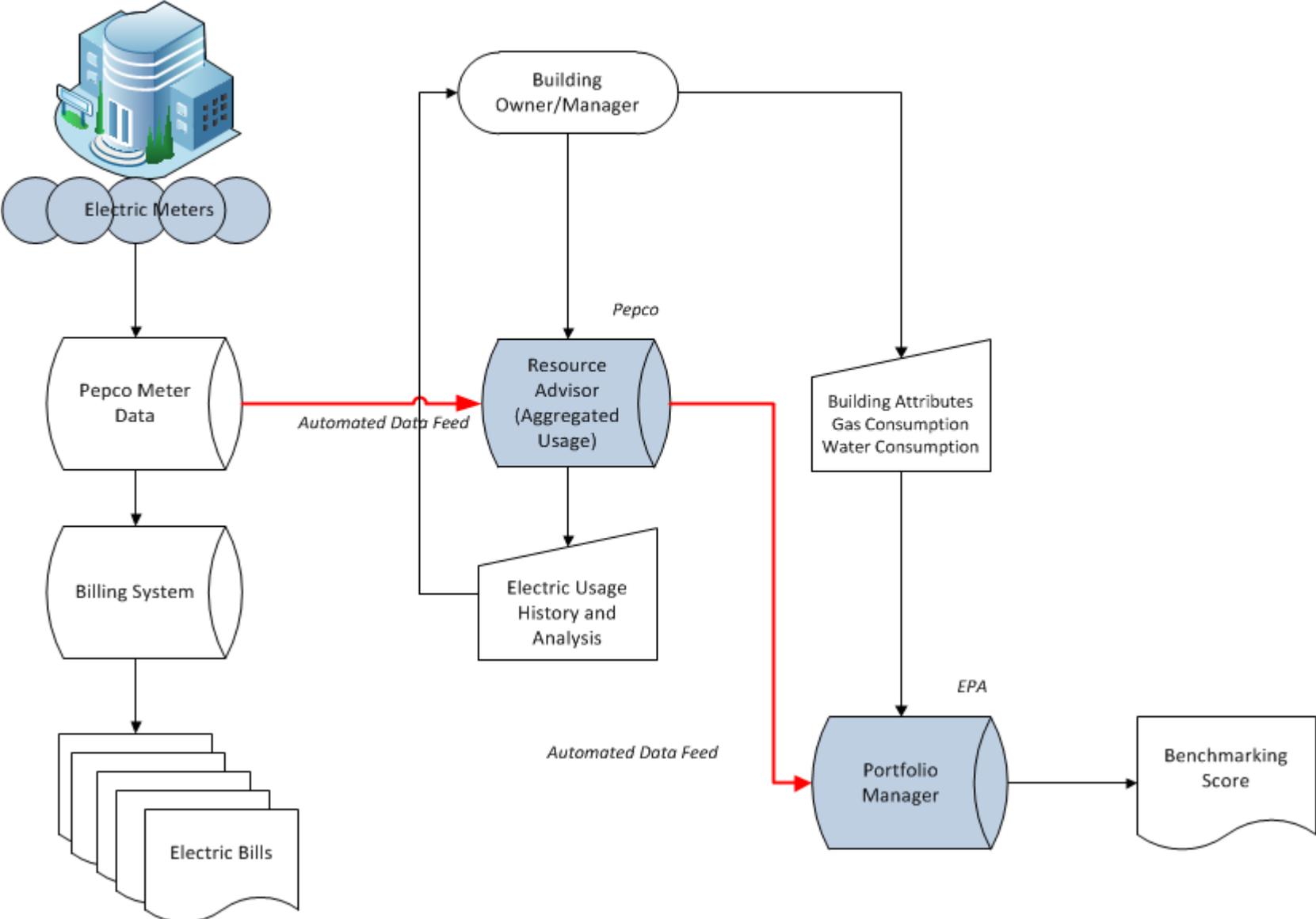
Privacy Issues

- Strict policies to protect confidentiality of customer information. Includes usage data
- Written authorization from the customer of record is required
- Building owners (management firms) are often not the customer of record
- Impractical for building owners to obtain authorization from multiple tenants in a building

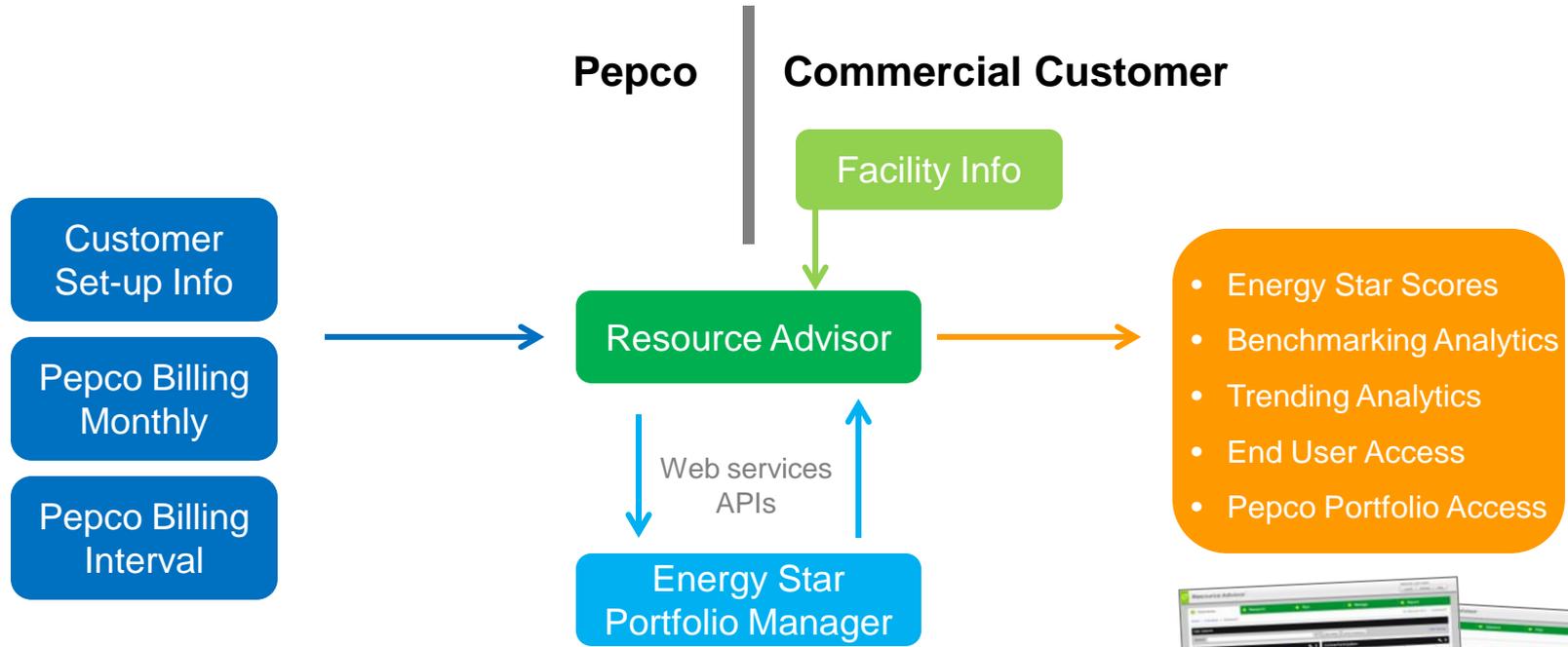
The Solution: Aggregate Building Data

- Provide aggregate building usage data without individual customer authorization
- Buildings with five (5) or more electric accounts
- Building owners are responsible for providing account identification
- Usage request form
- Submit Meter Number for each service connection

Electric Usage Data Flow (Proposed)



Architecture & Data flows



ENERGY STAR PORTFOLIO MANAGER
Home > My Portfolio

Group Averages	
Baseline Rating: 25 Facilities Included: 54	Current Rating: 38 Facilities Included: 54
Change from Baseline: Group Adjusted Percent Energy Use (%): -48.2% Facilities Included: 54	
Averages are weighted by Total Floor Space. More about Baselines More about Change from Baseline: Adjusted Energy Use	



Contact Us

- For additional information, please contact:
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Thank You



Energy Benchmarking with EPA's ENERGY STAR Portfolio Manager

Leslie Cook

US EPA

ENERGY STAR Buildings

November 6, 2014

The biggest little label in energy efficiency



products
4.8 billion

commercial buildings
24,000

homes
1.5 million

industrial plants
130



Why focus on buildings?

- Commercial buildings and industrial facilities generate about **50 percent** of U.S. carbon dioxide emissions.
- **30 percent** of energy consumed in commercial and industrial buildings is wasted.
- Reductions of **10 percent** or more in energy use can be possible with little or no cost.
 - Energy is a controllable cost.
 - Energy is a significant percentage of your operating costs and reduces operating profit.
 - **Any** costs you shift from energy cost improve the bottom line.



One Washingtonian Center
Gaithersburg, MD
ENERGY STAR Certified 2007-2013

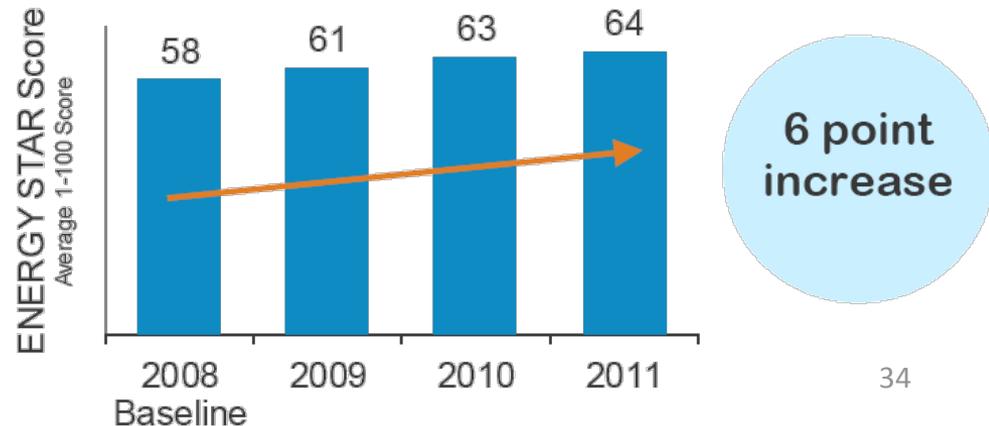
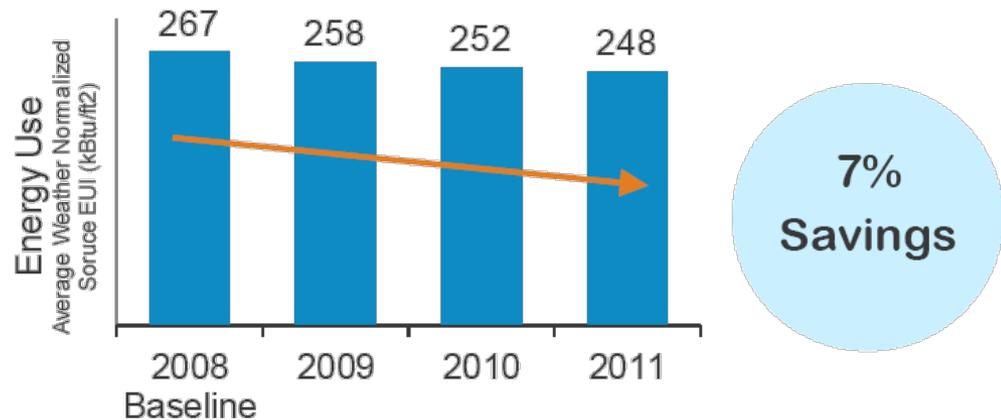
Does benchmarking lead to savings?

Consistent benchmarking in buildings results in energy savings and improved performance.

More at :

www.energystar.gov/datatrends

Energy Savings in Portfolio Manager

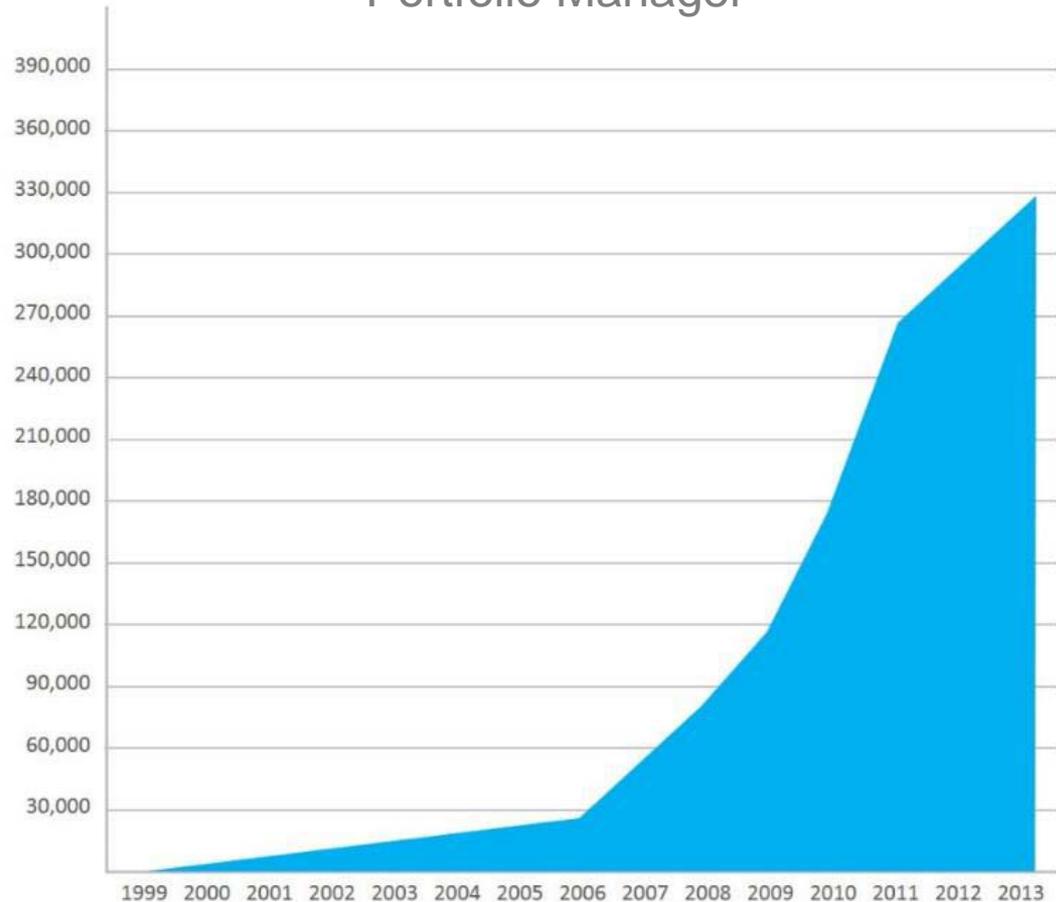


Benchmarking with ENERGY STAR is the industry standard.

As of June 2014:

- Over 6,000 C&I ENERGY STAR Partners
- Over 70,000 active PM accounts
- More than 350,000 buildings have been benchmarked in Portfolio Manager.
- *More than **40%** of U.S. commercial building space has benchmarked in Portfolio Manager.*

Buildings Benchmarked in EPA's Portfolio Manager



State and local programs leverage Portfolio Manager.





ENERGY STAR® PortfolioManager®

A Metrics Calculator that generates key performance indicators.

- ✓ Energy consumption (source, site, weather normalized, EUI)
- ✓ Water consumption (municipally supplied potable and reclaimed, alternative)
- ✓ Greenhouse gas emissions (indirect, direct, total, avoided)
- ✓ ENERGY STAR 1-to-100 score (available for many building types)

A Management Tool that provides a platform for a strategic energy management

- ✓ Identify high performing facilities for recognition and replicable practices.
- ✓ Prioritize poor performing facilities for immediate improvement.
- ✓ Understand the contribution of energy expenditures to operating costs.
- ✓ Develop a historical perspective and context for future actions and decisions.
- ✓ Establish reference points for measuring and rewarding good performance.
- ✓ Apply for ENERGY STAR certification

Tap into on-demand Portfolio Manager technical assistance.

ENERGY STAR® **PortfolioManager™**

Help | Login
Language: English | Français

MyPortfolio | Sharing | Planning | Reporting | Recognition

Portfolio Manager Help

- Learn More about Portfolio Manager.**
Get fact sheets, quick reference guides and other information about how the tools works.
- Take or View a Training.**
Sign up for a session or view a recording on a wide variety of topics.
- Search the Knowledge Base.**
Browse or search our Frequently Asked Questions.
- Ask a Question.**
Send a question or comment to our staff.
- Check the Glossary.**
Look up terms used throughout Portfolio Manager.
- Web Service Documentation.**
If you exchange data via web services, check out the documentation or get email updates.

Don't forget, we're out there with you! Network with us and other folks who are using Portfolio Manager.

[Like us on Facebook](#) | [Follow Us on Twitter](#) | [View Our YouTube Channel](#)

Technical References

Are you into the math of it all? Learn more about how Portfolio Manager calculates metrics.

- [Source Energy](#)
- [Greenhouse Gas Emissions](#)
- [ENERGY STAR Scale](#)
- For more information on specific property types, like office and school, visit the [ENERGY STAR website](#). These are available in English only.
- [National Median Values](#)
- [Accounting for Climate & Weather](#)
- [Thermal Conversion Factors](#)

[Get more documentation on the ENERGY STAR website.](#)

- Live and recorded webinars offered regularly
- Step-by-step training guides, FAQs, and technical reference documents, on-demand user support

www.energystar.gov/buildings/training

Portfolio Manager 101

[User Requirements](#) | [ENERGY STAR Buildings](#)

Portfolio Manager 201

ENERGY STAR® **PortfolioManager®**

TRAINING VIDEOS

How to Set up Energy and Water Meters in Portfolio Manager

ENERGY STAR® **PortfolioManager®**

Gather the information needed to benchmark.

- Property Information
 - Building type
 - Name, street address, ZIP/postal code

- Property type data
 - Gross floor area
 - Use details (ex. weekly operating hours, number of computers, number of workers on the main shift, etc)

- Energy consumption data
 - Property-specific invoice information from all purchased and on-site generated energy for all fuel types

Choose your data management method.



Welcome MIKEZATZ | Account Settings | Contacts | Help | Sign Out

MyPortfolio | Sharing | Planning | Reporting | Recognition | Admin | Processing

Upload and/or Update Multiple Properties

If you have a lot of properties to create or a lot of bills to add, you may find it easier to upload them using a spreadsheet rather than entering each property manually or adding bills manually. Learn more below.

What do you want to upload?

- **Add new properties to my account** - To get started, fill in [this spreadsheet](#) and upload it in the box below.
- **Edit/Upload my existing properties** - To do this, you will need to tell us which properties you want to update so we can create a [custom template](#). Once you fill in this custom template, you will upload it in the box below.

Add Properties

You can create new properties in Portfolio Manager, by filling in [this spreadsheet](#), which requires basic property information including name, address, gross floor area, property IDs, and federal information (if applicable).

[Add Properties Template](#)

Upload Spreadsheets

When you are ready to upload your completed template (either standard or custom), enter it here. Processing time could be affected by file size.

Type of Upload:

Upload Template:

Select "Browse" to locate the file on your computer and then select "Upload."

This is a powerful feature. Use carefully!

- Multiple submissions could result in duplicate data being added to your portfolio, property or meter.
- Depending on internet speeds, files larger than 2 MB may not be able to be successfully uploaded to the server before the session times out. Files near this size may take several hours to process. While your spreadsheet upload is

Edit and Manage Information

Once your properties are in Portfolio Manager, you can edit and update them using a template customized based on what you need to do. For example, you may want to upload energy bill data for multiple properties or update use information.

[Create an Upload Template](#)

100% 1:45 PM 0/12/2014



Manage all of your buildings in one tool.

ENERGY STAR® **PortfolioManager**®

Welcome MIKEZATZ: [Account Settings](#) | [Contacts](#) | [Help](#) | [Sign Out](#)

MyPortfolio | [Sharing](#) | [Planning](#) | [Reporting](#) | [Recognition](#) | [Admin](#) | [Processing](#)

Properties (21)
[Add a Property](#)

Source EUI Trend (kBtu/ft²)

Total GHG Emissions Trend (Metric Tons CO2e)

Notifications (0)

You have accepted a connection request from Karen Schneider. The connection has been made and will now show in your [Contacts list](#). If needed, you may now share property information with this contact.

You have no new notifications.

Properties (21) [Add a Property](#)

Filter by: [Search](#)

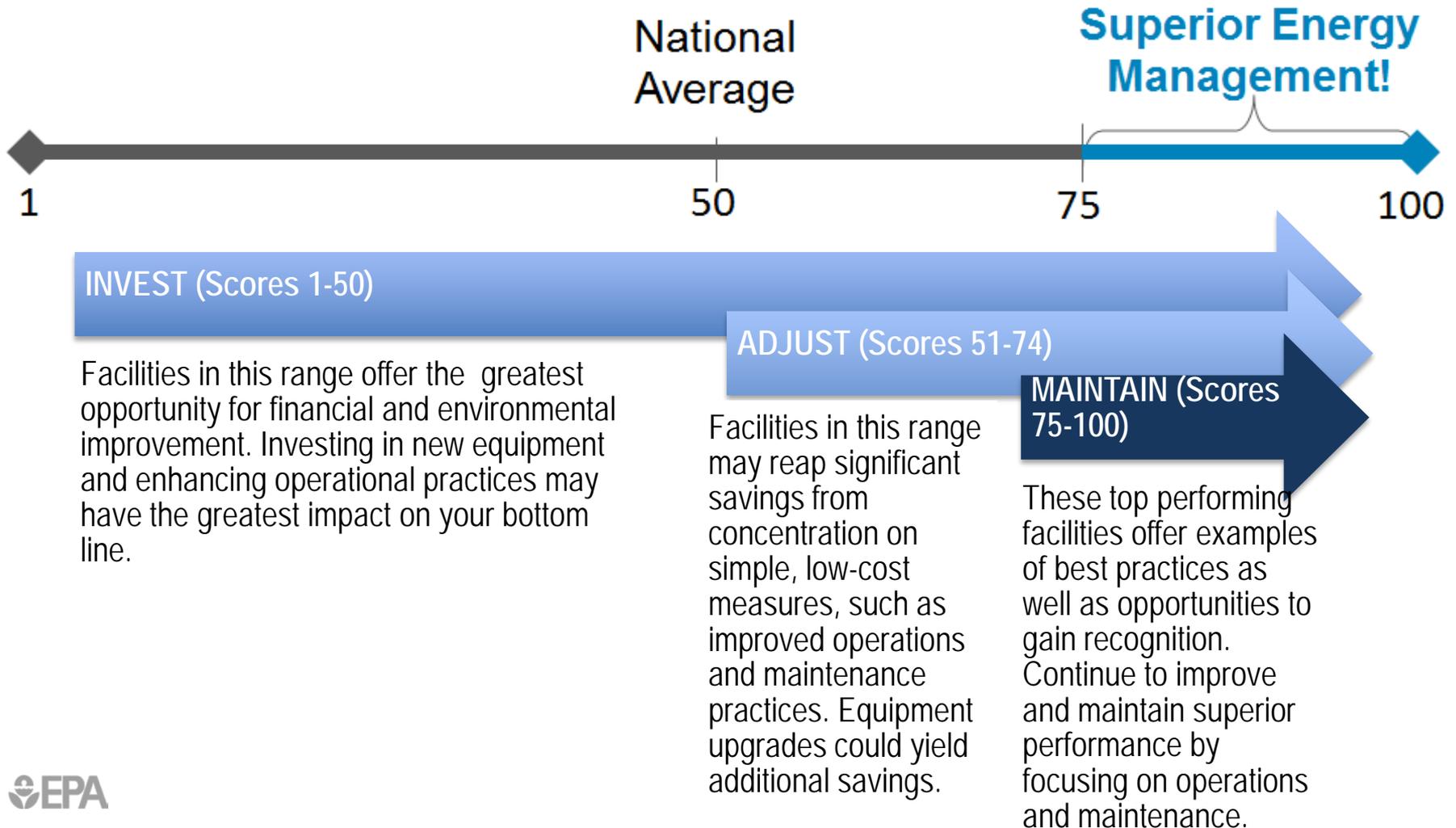
[Create Group](#) | [Manage Groups](#)

Name	Action
AES - Federal Office (Test)	I want to... <input type="text"/>
Federal Test DOH Office 25	I want to... <input type="text"/>
Mike Sample Hospital	I want to... <input type="text"/>
Mike's London Property	I want to... <input type="text"/>
Mike's Sample Bldg.	I want to... <input type="text"/>
Mike's Test DEES Project	I want to... <input type="text"/>
Mike's Test Design	I want to... <input type="text"/>
Mike's Test HOW	I want to... <input type="text"/>
Mike's Test International Property	I want to... <input type="text"/>

100% | 9:46 AM 6/13/2014



Interpret results with the 1-100 ENERGY STAR Score.





Set goals and track your progress.

MyPortfolio | Sharing | **Planning** | Reporting | Recognition

My Properties' Targets & Baselines

Name	Energy Baseline	Water Baseline	Target	Target Met	Action
Federal Building	12/31/2003	09/30/2011	Target ENERGY STAR Score of 80		I want to ...
▶ Higher Campus	Not Available	Not Available	Not Set		I want to ...
Hill Store	07/31/2006	07/31/2006	Target ENERGY STAR Score of 80	✓	I want to ...
Insurance Office	04/30/2007	01/31/2009	Target ENERGY STAR Score of 80		I want to ...
Sunnyside Elementary	08/31/2005	07/31/2006	Target ENERGY STAR Score of 80		I want to ...
Supermarket A-1	Not Available	Not Available	Not Set		I want to ...

Page 1 of 1 | View 1 - 7 of 7

Want this information in a report? Use EPA's standard spreadsheet template to [select properties and export this information from your portfolio.](#)

Choose one target or baseline for all properties

View graphs with portfolio-wide information

View property-specific details on targets

Properties with Targets (5)

Set One Target for All

Properties That Have Met Set Targets



Yes 14%
No 86%

Properties with Baselines (5)

Set One Baseline for All

Properties with at Least 12 Months of Information (required for metrics)



Yes 71%
No 29%

I want to ...

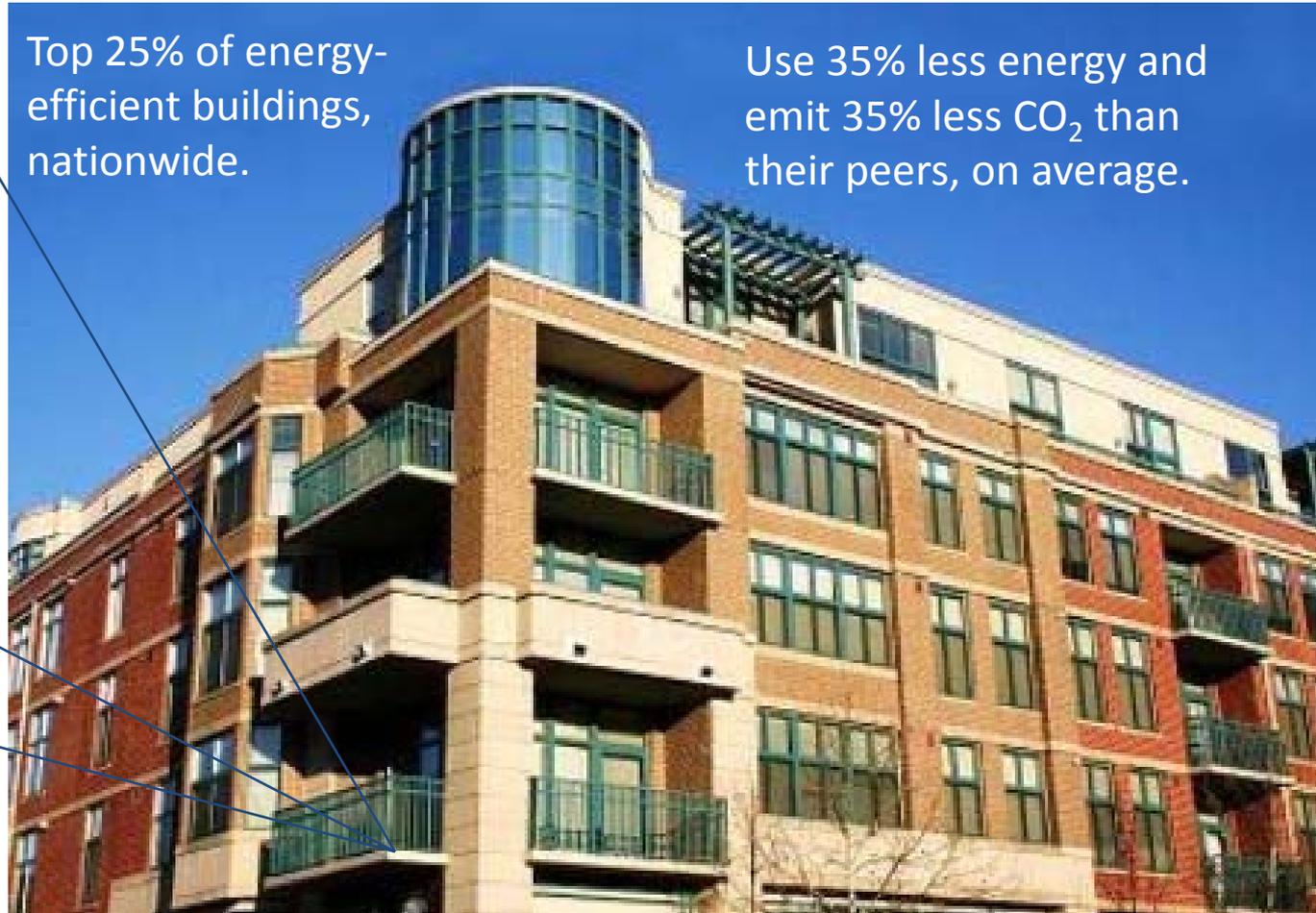
- View Property Goals & Improvements
- Add/Edit Baselines or Target
- Add Performance Improvement
- Open Sustainability Checklist



Earn ENERGY STAR Certification.

Top 25% of energy-efficient buildings, nationwide.

Use 35% less energy and emit 35% less CO₂ than their peers, on average.

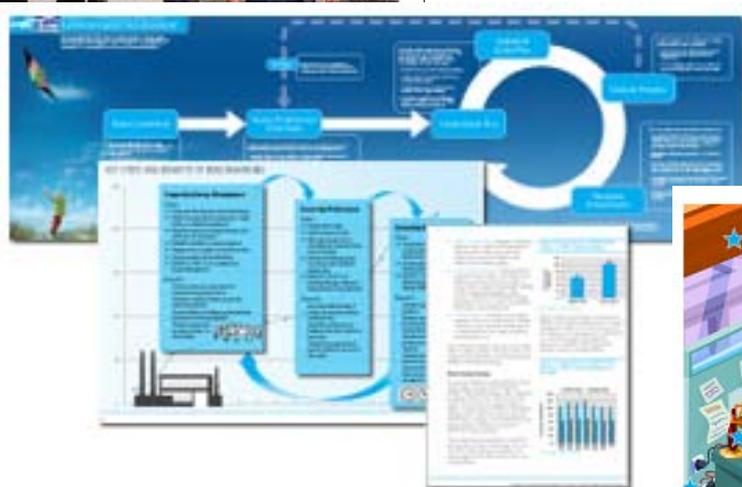
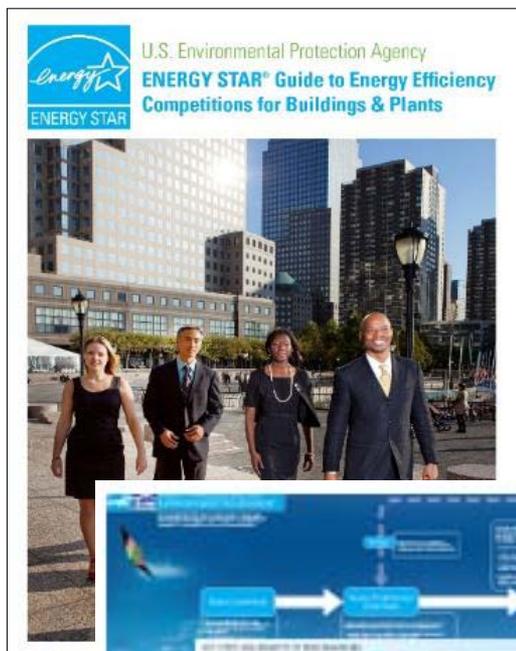


Make benchmarking *actionable*.

- Guidelines for Energy Management
- Energy Efficiency Competition Planning Guide
- Success Stories: Landlords and Tenants
- Communications Strategy Planning Guide
- “Bring Your Green to Work” Engagement Kit
- Action Workbooks for Congregations and Small Businesses

....much more!

www.energystar.gov/buildings/tools-and-resources





Thank you

All materials are available at:
www.energystar.gov/buildings

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