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

Thursday November 6, 2014
COMMERCIAL ENERGY BENCHMARKING
INTRODUCTORY FORUM

Thank you to our event sponsors!

Coffee Sponsor

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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

- Transportation: 34%, 4.339 MMTCO₂e
- Commercial Building Energy: 32%, 3.987 MMTCO₂e
- Residential Building Energy: 33%, 4.101 MMTCO₂e
- Solid Waste Management: 1%, 0.165 MMTCO₂e
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

All Commercial Buildings
(4271 Buildings, 150 million square feet)

<table>
<thead>
<tr>
<th>Share of Sector Portfolio</th>
<th># Buildings</th>
<th>Sq. Ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 10,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10,001-25,000</td>
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<td>25,001-50,000</td>
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<tr>
<td>50,001-75,000</td>
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<tr>
<td>75,001-100,000</td>
<td></td>
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<td>100,001-150,000</td>
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<tr>
<td>150,001-200,000</td>
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<tr>
<td>&gt; 200,001</td>
<td></td>
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</tbody>
</table>
## Deadlines

<table>
<thead>
<tr>
<th>Group</th>
<th>Benchmarked Calendar Year</th>
<th>Deadline</th>
</tr>
</thead>
<tbody>
<tr>
<td>County: 50k sq ft and greater</td>
<td>2014</td>
<td>June 1, 2015</td>
</tr>
<tr>
<td>Group 1: 250k sq ft and greater</td>
<td>2015</td>
<td>December 1, 2016</td>
</tr>
<tr>
<td>Group 2: 50k sq ft up to Grp 1</td>
<td>2016</td>
<td>December 1, 2017</td>
</tr>
</tbody>
</table>
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
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?

- Learn about the bill: [bit.ly/DEPbenchmarking](bit.ly/DEPbenchmarking)
- Learn about Portfolio Manager: [portfoliomanager.energystar.gov](portfoliomanager.energystar.gov)
Contact info and Next up!

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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

Pepco Commercial Customer

- Energy Star Scores
- Benchmarking Analytics
- Trending Analytics
- End User Access
- Pepco Portfolio Access

Customer Set-up Info
- Pepco Billing Monthly
- Pepco Billing Interval

Resource Advisor

Facility Info

Web services APIs

Energy Star Portfolio Manager

Energy Star Portfolio Manager

Customer Set-up Info
- Pepco Billing Monthly
- Pepco Billing Interval
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
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.
State and local programs leverage Portfolio Manager.
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

Accessible in a free, online secure platform: www.energystar.gov/benchmark
Tap into on-demand Portfolio Manager technical assistance.

- 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
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.
Manage all of your buildings in one tool.
Interpret results with the 1-100 ENERGY STAR Score.

**INVEST (Scores 1-50)**

Facilities in this range offer the greatest opportunity for financial and environmental improvement. Investing in new equipment and enhancing operational practices may have the greatest impact on your bottom line.

**ADJUST (Scores 51-74)**

Facilities in this range may reap significant savings from concentration on simple, low-cost measures, such as improved operations and maintenance practices. Equipment upgrades could yield additional savings.

**MAINTAIN (Scores 75-100)**

These top performing facilities offer examples of best practices as well as opportunities to gain recognition. Continue to improve and maintain superior performance by focusing on operations and maintenance.
Set goals and track your progress.

Choose one target or baseline for all properties.

View graphs with portfolio-wide information.

View property-specific details on targets.
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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