EPA’s Portfolio Manager Training

District Department of the Environment &
DC Sustainable Energy Utility

Presented by
Kudret Utebay (The Cadmus Group, Inc.)
On behalf of EPA’s ENERGY STAR Program

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What is ENERGY STAR?

- A government-backed, voluntary program that helps businesses and individuals protect the environment through superior energy performance by providing energy-efficient solutions for homes, businesses, and institutions.

- The national symbol for environmental protection through energy efficiency, recognized by more than 80% of all U.S. households.
Be a Leader – Change Our Environment for the Better

U.S. EPA’s ENERGY STAR®

The U.S. Environmental Protection Agency (EPA) can help you with buildings and plants to:

- Reduce energy waste
- Reduce GHG emissions
- Protect the environment
Opportunities in 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** in energy use can be possible with little or no cost.
Top performing buildings use 3 to 4 times less energy per ft² than the worst performers.

Newer buildings are equally represented across all quartiles.

Based on a sample of 4,000 buildings nationwide.

39 percent of buildings with a rating of 75 or better are less than 25 years old.
42 percent of buildings with a rating between 25 and 74 are less than 25 years old.
35 percent of buildings with a rating between 0 and 24 are less than 25 years old.
Technology ≠ Performance

- 60 percent of building fan systems oversized on average by 60 percent (EPA fan study)

- Chillers oversized 50 percent to 200 percent (Lawrence Berkeley National Laboratory)

- Improper installation and poor maintenance

NEXT: So what can Portfolio Manager help us do?
Benchmarking through ENERGY STAR allows you to compare:

- One building against a national sample of similar buildings
- Compare your buildings against other MW COG members’ buildings
- All of your buildings of a similar type to each other
- Your building’s current performance against its past and/or baseline performance
Benchmarking

Portfolio Manager

- Benchmark the energy use of all of your buildings – receive an energy use intensity (EUI). Many buildings are eligible to receive energy performance ratings on a 1-100 scale.

- Track changes in energy and water use over time in single buildings, groups of buildings, or entire portfolios.

- Track and report cost savings and GHG emissions.

- Apply for the ENERGY STAR.

- [www.energystar.gov/benchmark](http://www.energystar.gov/benchmark)
Fuel Efficiency

MPG

Is 60 MPG high or low for an automobile?

Is 80 kBtu/SF/YR high or low for a building?

Statement of Energy Performance

EPA Rating
<table>
<thead>
<tr>
<th>Space Types Eligible for the 1-100 Performance Rating System</th>
</tr>
</thead>
<tbody>
<tr>
<td>Schools</td>
</tr>
<tr>
<td>Medical Office Buildings</td>
</tr>
<tr>
<td>Warehouses</td>
</tr>
<tr>
<td>Retail</td>
</tr>
<tr>
<td>Waste Water Treatment Plants</td>
</tr>
<tr>
<td>Residence Halls</td>
</tr>
<tr>
<td>Office Buildings</td>
</tr>
<tr>
<td>Courthouses</td>
</tr>
<tr>
<td>Supermarkets</td>
</tr>
<tr>
<td>Hotels</td>
</tr>
<tr>
<td>Financial Centers</td>
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<tr>
<td>Hospitals</td>
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</tbody>
</table>
Examples of Non-Ratable Space Types

- Police Stations
- Fire Stations
- Convention Centers
- Laboratories
- Libraries
- Malls
- Movie Theatres
- Restaurants
- Stadiums and Arenas

... and more
Identify Best Opportunities and Set Improvement Goals

- Identify under-performing buildings to target for energy efficiency improvements.
- Establish baselines to set goals and measure progress.
Track Progress Over Time

- Set a baseline and monitor energy efficiency improvements over time
- View percent improvement in weather-normalized energy use intensity.
- Track reductions in greenhouse gas emissions.
- Monitor energy and water costs

<table>
<thead>
<tr>
<th>Facility Name</th>
<th>Current Source Energy Intensity (kBtu/Sq. Ft)</th>
<th>Change from Baseline: Adjusted Energy Use (%)</th>
<th>Change from Baseline: Energy Use Intensity (kBtu/Sq. Ft)</th>
<th>Change from Baseline: GHG Emissions (MCO2e)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fire Station 1</td>
<td>163.1</td>
<td>-12.3</td>
<td>-5.1</td>
<td>-275.66</td>
<td></td>
</tr>
<tr>
<td>Fire Station 2</td>
<td>172.6</td>
<td>-16.3</td>
<td>-10.7</td>
<td>-488.62</td>
<td></td>
</tr>
</tbody>
</table>

Download in Excel

Portfolio Averages

<table>
<thead>
<tr>
<th>Baseline Rating: 40</th>
<th>Current Rating: 44</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facilities Included: 310</td>
<td>Facilities Included: 311</td>
</tr>
<tr>
<td>Change from Baseline: Portfolio Adjusted Percent Energy Use (%): 10.1%</td>
<td></td>
</tr>
</tbody>
</table>

Facilities Included: 378

Averages are weighted by Total Floor Space.

More about Baselines
More about Change from Baseline: Adjusted Energy Use
Document Savings Results

- Provide *transparency* and *accountability* to help demonstrate strategic use of capital improvement funding.
- Quickly and accurately demonstrate savings for an individual building or entire portfolio:
  - Energy use
  - GHG emissions
  - Water use
  - Energy costs
- Download performance metrics from Portfolio Manager into Excel.
- Generate a Statement of Energy Performance (SEP) for each building, summarizing important performance indicators, including energy intensity and GHG emissions.
- Generate an Energy Performance Report showing reductions in key indicators over a user-specified time period.

Visit [www.energystar.gov/benchmark](http://www.energystar.gov/benchmark) to get started
Required Information for Benchmarking in Portfolio Manager

• **Building Identifiers**
  Name, street address, zip code for weather normalization

• **Space Type Data (depends on space type)**
  – Other Space Types: Total Floor Area
  – Office: Square footage, hours of operation, Number of workers on main shift, # of PC’s, Percent of gross floor area that is air conditioned, heated

• **Energy Use**
  – Bldg specific invoice information from all purchased energy. Begin with at least 11 consecutive months for each source and update with monthly usage data.
Benchmarking Methods

- **Single Building Manual Entry**
  - Enter building and energy consumption information into Portfolio Manager.

- **Bulk Data Upload**
  - Upload large sets of building data in Portfolio Manager using an Excel template.

- **Automated Benchmarking Services**
  - Use Service and Product Provider to have the rating automatically integrated into your energy information and bill handling system.

- **Utility-based Automated Benchmarking**
  - Option 1: Provide utility data
  - Option 2: Provide automated benchmarking services
Portfolio Manager Features

- Greenhouse Gas Emission Tracking
- Import Templates
- Automated benchmarking
- Master account feature
- View (and Reporting) Options
- Statement of Energy Performance
- Percent energy reduction
- Water tracking
- Multi-Facility Meter Update
How Does a Utility Automate Benchmarking?

1. Utility System
   - Utility integrates KPI into their energy information product
   - Generate XML and send to EPA

2. Customer
   - Customer requests KPI through utility software

3. EPA
   - EPA calculates and returns KPIs

4. EPA
   - EPA calculates and returns KPIs

5. Customer
   - Customer receives KPI

KPI: Key Performance Indicators
ABS Steps and Resources

- Overview on ENERGY STAR web site
- Register for ABS account
- Download ABS Overview and Users Guide from ABS account Web site
- Email technical question to buildings@energystar.gov
- Request conference calls with EPA program and technical support teams
Benchmarking Starter Kit

Animated Training

A Step-by-Step Guide to Benchmarking Using EPA's Portfolio Manager

Learn more at energystar.gov
National and Local Recognition

➢ ENERGY STAR Partner

➢ Designed to Earn the ENERGY STAR

➢ The ENERGY STAR for Existing Buildings

➢ ENERGY STAR Leaders

➢ ENERGY STAR Partner of the Year
Become a Partner

1. Go to: the “Buildings & Plants” page

2. Click on (bottom left): “Join ENERGY STAR”
For More Information

Visit www.energystar.gov/government

E-mail buildings@energystar.gov

If you have any questions, please contact

Marshall Duer-Balkind, (DDOE)
marshall.duer-balkind@dc.gov
(202) 671-3042

The Cadmus Group, Inc. (EPA contractor)

Kudret Utebay
Kudret.Utebay@cadmusgroup.com
(703) 247-6138

Nils Klinkenberg
Nils.Klinkenberg@cadmusgroup.com
(703) 247-6164