ENERGY STAR benchmarking

Portfolio Manager Training

Emily Bolger

US EPA R1
What is energy benchmarking?

• **Benchmarking** is the practice of comparing the measured performance of a device, process, facility, or organization to itself, its peers, or established norms, with the goal of informing and motivating performance improvement.

• When applied to building energy use, **benchmarking** serves as a mechanism to measure energy performance of a single building over time, relative to other similar buildings, or internally to its past performance.

• *Benchmarking works best when it’s done consistently over time!*
Why you should benchmark?

- EPA found that buildings that were benchmarked consistently reduced energy use by an average of 2.4 percent per year, for a total savings of 7 percent. And, buildings that started out as poor performers saved even more.
- Got a low score? Time to do an energy audit and see where you may be wasting energy.
- Got a 75 or higher? Congrats! Apply for ENERGY STAR certification and show the world that your facility is energy-efficient.
The 1-100 ENERGY STAR Score

One simple number understood by ALL stakeholders.
Property types with 1-100 ENERGY STAR scores (but any building can be benchmarked)

*Not eligible for ENERGY STAR Certification

Bank Branch  Barracks*  Courthouses  Data Centers  Distribution Centers
Financial Offices  Hospitals  Hotels  K-12 Schools  Office Buildings
Medical Offices*  Multifamily Housing  Residence Hall/Dormitory*  Retail Stores  Senior Care Communities
Supermarkets  Warehouses  Wastewater Treatment Plants*  Wholesale club/Supercents  Worship Facilities

2012 CBECs (Commercial Buildings Energy Consumption Survey) > August 2018 update to be finalized this summer
Metrics Calculator

- Energy consumption (source, site, weather normalized)
- Greenhouse gas emissions (indirect, direct, total, avoided)
- Water consumption (municipally supplied potable and reclaimed, alternative)
- ENERGY STAR 1-to-100 score (available for many building types)
• Add a property (enter details about it)
• Add building space types
• Enter energy consumption (meter data)
• Generate reports – standard templates or create your own

All for free!

www.energystar.gov
HOW TO GUIDE
Energystar.gov/portfoliomanager

Create a username and password

Log in
Navigate Portfolio Manager

Portfolio level view

Source EUI Trend (kBtu/ft²)

Manage Portfolio

Transfer ownership of a property that you manage to another Portfolio Manager user.

Upload and/or update multiple properties at once using an Excel

Dashboard (Metrics current as of 04/17/2018 12:39 PM EDT)

View All Properties (17)  Target View

Add/Edit/Delete Groups  Add/Edit/Delete Views

Energy Current Date  Target Site Energy Use (kBtu)  Target ENERGY STAR Score  Energy Baseline Date

Beroyal Office Building 1964151
NA  NA  NA  NA

Company HQ 6376536
05/31/2017  8994545.1  80  11/20/2014

Core and Shell Test 6219233
NA  NA  NA  NA

Duranan Office Building 4568637
09/30/2015  NA  NA  12/31/2014

Heinlent II Office 6251401
05/31/2017  NA  NA  11/30/2011

Heinlent Office Bldg 4419445
11/30/2017  7057991.5  80  12/31/2016
Get Data In: Manually
Add a Property: Existing Property

Select Property Type

Select number of buildings

Select construction status

Get Started!
**About Your Property**

- **Name:**
- **Country:** - - - Select - - -
- **Street Address:**
- **City/Municipality:**
- **State/Province:** - - - Select - - -
- **Postal Code:**
- **Year Built:**
- **Gross Floor Area:**
  - Sq. Ft.
  - **Temporary Value**

**Include in GFA:**
- Lobbies
- Tenant Areas
- Common Areas
- Meeting Rooms
- Break Rooms
- Atriums (count the base level only)
- Restrooms
- Parking
- Elevator
- Crawlspace / Attics
- Mechanical Equipment

**Do not include in GFA:**
- Exterior spaces
- Balconies
- Decks
- Driveways
- Covered Walkways
- Outdoor Courts (Tennis, Basketball, etc.)
- Exterior Loading Docks
- Covered Walkways
- Restrooms
- The interstitial plenum space between floors (which house pipes and ventilation)
- Parking
- Stairwells

**Although you do not include these areas in your GFA, you do include the energy use associated with these areas.**

**Occupyance**

Occupyance is the percentage of your property’s Gross Floor Area (GFA) that is occupied and operational. For example, if you have a 10-story building, that on average has 9 of its 10 floors fully leased and occupied, the occupyance would be 90%. If you have people working on all floors/areas of your building then you are 100% occupied. You do not need to count empty cubicles for occupyance. (Click to view the full term in the glossary)
Additional info to compare property to other properties like it
Office refers to buildings used for the conduct of commercial or governmental business activities. This includes administrative and professional offices.

Gross Floor Area (GFA) should include all space within the building(s) including offices, conference rooms and auditoriums, break rooms, kitchens, lobbies, fitness areas, basements, storage areas, stairways, and elevator shafts.

If you have restaurants, retail, or services (dry cleaners) within the Office, you should most likely include this square footage and energy in the Office Property Use. There are 4 exceptions to this rule when you should create a separate Property Use:

- If it is a Property Use Type that can get an ENERGY STAR Score (note: Retail can only get a score if it is greater than 5,000 square feet)
- If it accounts for more than 25% of the property's GFA
- If it is a vacant/unoccupied Office
- If the Hours of Operation differ by more than 10 hours from the main Property Use

More on this rule.

<table>
<thead>
<tr>
<th>Property Use Detail</th>
<th>Value</th>
<th>Current As Of</th>
<th>Temporary Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gross Floor Area</strong></td>
<td>50,000 Sq Ft</td>
<td>1/1/2005</td>
<td></td>
</tr>
<tr>
<td><strong>Weekly Operating Hours</strong></td>
<td></td>
<td>1/1/2005</td>
<td></td>
</tr>
<tr>
<td><strong>Number of Workers on Main Shift</strong></td>
<td></td>
<td>1/1/2005</td>
<td></td>
</tr>
<tr>
<td><strong>Number of Computers</strong></td>
<td></td>
<td>1/1/2005</td>
<td></td>
</tr>
<tr>
<td><strong>Percent That Can Be Heated</strong></td>
<td></td>
<td>1/1/2005</td>
<td></td>
</tr>
<tr>
<td><strong>Percent That Can Be Cooled</strong></td>
<td></td>
<td>1/1/2005</td>
<td></td>
</tr>
</tbody>
</table>

This Use Detail is used to calculate the 1-100 ENERGY STAR Score.
Sources of Your Property's Energy

What kind of energy do you want to track? Please select all that apply.

- [ ] Electric
  - [ ] purchased from the grid
    - How Many Meters? 1
  - [ ] generated onsite with my own solar panels
    - How Many Meters? 1
  - [ ] generated onsite with my own wind turbines
- [ ] Natural Gas
  - How Many Meters? 1
- [ ] Propane
- [ ] Fuel Oil (No. 2)
- [ ] Diesel
- [ ] District Steam
  - How Many Meters? 1
- [ ] District Hot Water
- [ ] District Chilled Water
- [ ] Fuel Oil (No. 4)
- [ ] Fuel Oil (No. 5 and No. 6)
- [ ] Coal (anthracite)
- [ ] Coal (bituminous)
- [ ] Coke
- [ ] Wood
- [ ] Kerosene
- [ ] Fuel Oil (No. 1)
- [ ] Other

Get Started! Cancel
# About Your Meters for TEST

Enter the information below about your new meters. The meter’s *Units* and *Date Meter became Active* are required. You can also change the meter’s name.

## 4 Energy Meters for TEST (click table to edit)

<table>
<thead>
<tr>
<th></th>
<th>Meter Name</th>
<th>Type</th>
<th>Other Type</th>
<th>Units</th>
<th>Date Meter became Active</th>
<th>In Use?</th>
<th>Date Meter became Inactive</th>
<th>Enter as Delivery?</th>
<th>Custom Meter ID 1 Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓</td>
<td>Electric Grid Meter</td>
<td>Electric - Grid</td>
<td></td>
<td>kWh (thousand Watt-hours)</td>
<td>2/1/2017</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>✓</td>
<td>Natural Gas</td>
<td>Natural Gas</td>
<td></td>
<td>therms</td>
<td>7/1/2017</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>✓</td>
<td>District Steam</td>
<td>District Steam</td>
<td></td>
<td>Pounds</td>
<td>2/1/2017</td>
<td></td>
<td>7/1/2017</td>
<td></td>
<td></td>
</tr>
<tr>
<td>✓</td>
<td>Electric Solar Meter</td>
<td>Electric - Solar</td>
<td></td>
<td>kWh (thousand Watt-hours)</td>
<td>5/1/2018</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Check utility bill for units**  
**Still in use?**

[Create Meters]

---

Follow Us [Twitter] [Facebook] [YouTube] [LinkedIn]  
Contact Us | Privacy Policy | Browser Requirements | ENERGY STAR Buildings & Plants Website

[ENERGY STAR](https://www.energystar.gov)  
The simple choice for energy efficiency.
Only parts needed for ES certification

<table>
<thead>
<tr>
<th>Start Date</th>
<th>End Date</th>
<th>Usage kWh (thousand Watt-hours)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Upload data in bulk for this meter:

- You can use the single-meter spreadsheet to upload the file below, or copy and paste the data from the spreadsheet into the table above (instructions in this FAQ).
- Use this single-meter spreadsheet template.

[Choose File] No file chosen

[Upload]

**Natural Gas**
Select Energy Meters to Include in Metrics

Tell us which meters to include when calculating the Energy metrics for Test Building so that we can provide you with the most accurate metrics possible.

Summary

2

Meters representing the total energy consumption for Test Building (a single building).

Energy Meters

Select all meters to be included in your Energy metrics. (Hint: All meters should be included unless they are sub-meters.)

<table>
<thead>
<tr>
<th>Name</th>
<th>Meter ID</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>57xxxxxxx</td>
<td>25499822</td>
<td>Natural Gas</td>
</tr>
<tr>
<td>51xxxxxxx</td>
<td>25499823</td>
<td>Electric - Grid</td>
</tr>
</tbody>
</table>

Total of 2 meter(s). Tell us what this represents:

- These meter(s) account for the total energy consumption for Test Building (a single building).
- These meter(s) do not account for the total energy consumption for Test Building (a single building).

About Sub-meters

If you have sub-meters to measure energy or water consumption for a specific purpose, and you also have a master meter (which measures total consumption), counting both of those meters would double count your consumption and skew your metrics (e.g., artificially increase your Site Energy Use Intensity). Learn More about configuring meters for performance metrics.

Apply Selections
REPORTING DATA
Charts & Graphs

Weather Normalized Source EUI

How much total primary fuel would be required by my properties, under average weather conditions?

ENERGY STAR Performance Documents

- Statement of Energy Performance (SEP)
- Statement of Energy Design Intent (SEDI)
- Data Verification Checklist
- Progress & Goals Report
- ENERGY STAR Scorecard
- Water Scorecard

Templates & Reports (33)

<table>
<thead>
<tr>
<th>Name</th>
<th>Status</th>
<th>Action</th>
</tr>
</thead>
</table>

Create a New Template
Charts & Graphs

How much total primary fuel would be required by my properties, under average weather conditions?

ENERGY STAR
Performance Documents

- Statement of Energy Performance (SEP)
- Statement of Energy Design Intent (SEDI)
- Data Verification Checklist
- Progress & Goals Report
- ENERGY STAR Scorecard
- Water Scorecard

Templates & Reports (33)

<table>
<thead>
<tr>
<th>Name</th>
<th>Status</th>
<th>Action</th>
</tr>
</thead>
</table>

Create a New Template
Generate and Download Reports

Portfolio Manager offers several standard reports for properties that can be useful in communicating your property's progress with others. These reports offer detailed information about your property for a single time period and are presented in a PDF format. You can view sample reports here.

1. Select Report(s) to Download
   - Statement of Energy Performance (SEP)
   - ENERGY STAR Data Verification Checklist (energy data only)
   - ENERGY STAR Scorecard
   - Progress and Goals Report
   - Statement of Energy Design Intent (SEDI)
   - Water Scorecard (Multifamily only)

2. Select Property for Report(s)
   Property: Select Property

3. Select Timeframe for Report(s)
   Timeframe: Current Year for Energy

Generate & Download Report(s)
Sample Property

Primary Property Function: Office
Gross Floor Area (ft²): 91,300
Built: 1951
For Year Ending: August 31, 2014
Date Generated: October 01, 2014
Property Address: Sample Property
123 Main St
Boston, Massachusetts 02134
Property ID: 3681865

ENERGY STAR® Score 1

Performance Comparison

<table>
<thead>
<tr>
<th></th>
<th>Progress Year Ending 12/31/2012 (Baseline)</th>
<th>Progress Year Ending 8/31/2014 (Selected)</th>
<th>% Change</th>
<th>Property’s Target</th>
<th>National Median</th>
<th>ENERGY STAR Score of 75</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENERGY STAR Score</td>
<td>61</td>
<td>71</td>
<td>14</td>
<td>85</td>
<td>50</td>
<td>75</td>
</tr>
</tbody>
</table>

Energy

<table>
<thead>
<tr>
<th></th>
<th>Site EUI (kBtu/ft²)</th>
<th>Source EUI (kBtu/ft²)</th>
<th>$/ft²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site EUI</td>
<td>59.5</td>
<td>71.9</td>
<td>1.75</td>
</tr>
<tr>
<td>Source EUI</td>
<td>186.8</td>
<td>169</td>
<td>1.64</td>
</tr>
<tr>
<td>$/ft²</td>
<td>0.58</td>
<td>1.03</td>
<td>2.11</td>
</tr>
</tbody>
</table>

Greenhouse Gas

Emissions

<table>
<thead>
<tr>
<th>Metric Tons CO₂e/Year</th>
<th>kgCO₂e/ft²</th>
<th>Year Ending 12/31/2012 (Baseline)</th>
<th>Year Ending 8/31/2014 (Selected)</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metric Tons CO₂e/Year</td>
<td>293.5</td>
<td>295.3</td>
<td>0.61</td>
<td>-</td>
</tr>
<tr>
<td>kgCO₂e/ft²</td>
<td>5.8</td>
<td>5.8</td>
<td>0.61</td>
<td>-</td>
</tr>
</tbody>
</table>

Water

<table>
<thead>
<tr>
<th>All Water Consumption (kgal)</th>
<th>Indoor Water Consumption (kgal)</th>
</tr>
</thead>
<tbody>
<tr>
<td>300</td>
<td>200</td>
</tr>
<tr>
<td>295</td>
<td>295</td>
</tr>
<tr>
<td>-1.67</td>
<td>-1.67</td>
</tr>
</tbody>
</table>

$/ft²: 450.00

*Setting and managing water targets is not yet available in Portfolio Manager.
### My Contacts

This is where you keep track of your contacts and/or organizations (i.e. people or companies associated with your properties such as Professional Engineers, Registered Architects, or others with whom you share information). You can add anyone as a contact, regardless of whether they have a Portfolio Manager account and you can share your properties & reports with any of your **connected** contacts. You can “connect” to other Portfolio Manager users by searching for their accounts and sending a connection request.

<table>
<thead>
<tr>
<th>Name</th>
<th>Organization</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Falmouth Academy (Falmouthacademy)</strong></td>
<td>Cape &amp; Islands Self-Reliance Corporation</td>
</tr>
<tr>
<td><strong>Emily Basham (GreenBank18)</strong> Connected Associate</td>
<td><strong>CT Green Bank</strong></td>
</tr>
<tr>
<td><strong>Ron Bolt (Littleton03561)</strong> Connected ECC Secretary</td>
<td><strong>Town of Littleton</strong></td>
</tr>
<tr>
<td><strong>Mary Boyle (cornishenergycommittee)</strong> Connected Chair of CEC</td>
<td><strong>Cornish Energy Committee</strong></td>
</tr>
<tr>
<td><strong>Mike Cloutier (TOWNOFRINDGE)</strong> Connected</td>
<td><strong>Town of Falmouth</strong></td>
</tr>
</tbody>
</table>
**Search Results**

The results of your search are listed below. Clicking "Connect" will send a request to the person asking them to confirm your request to add them as your contact. If they accept, you will see them listed as a connected contact in your address book. If they do not accept, or have not accepted yet, you will see them as an unconnected contact in your address book. Connecting with contacts will make it easier to share property information within Portfolio Manager.

### Your Search Criteria

<table>
<thead>
<tr>
<th>Name:</th>
<th>Organization:</th>
<th>Username:</th>
<th>Email Address:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>eversource</td>
<td></td>
</tr>
</tbody>
</table>

### Results

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
<th>Company</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Eversource Web Services</td>
<td>IT Consultant with Eversource</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Benchmarking intern with Eversource</td>
</tr>
<tr>
<td></td>
<td></td>
<td>EEC with Eversource</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Analyst with ICF International</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Energy Efficiency Consultant with Eversource Energy</td>
</tr>
</tbody>
</table>

[Connect]  

1 - 5 of 5
Send a Connection Request to **Eversource Web Services** to Begin Exchanging Data

**Eversource Web Services** requires the following information in order to exchange data with your property(ies). If you have any questions about how to complete this information, please contact **Eversource Web Services**. Once your connection request has been accepted, you can share individual properties and/or meters with them to get started exchanging data.

**Relationship**:  
1: Example: 1  
Enter 1 if you are owner, 2 if you are agent of an owner; 1 - 1 Characters

**Your Name**:  
John Matthew: Example: John Matthew  
Length: 1 - 50 Characters

**Billing account #**:  
51123123456: Example: 51123123456  
Length: 8 - 11 Characters

**Bill Start Date**:  
20160121: Example: 20160121  
Enter the date format as YYYYMMDD; 8 - 8 Characters

**Bill End Date**:  
20160121: Example: 20160121  
Enter the date format as YYYYMMDD; 8 - 8 Characters

**Individual Month Energy Usage Amount on Bill (kWh or CCF)**:  
7332: Example: 73.32  
Length: 1 - 15 Characters

**Email**:  
John@abc.com: Example: John@abc.com  
Length: 1 - 50 Characters

**Phone #**:  
781-321-0000: Example: 781-321-0000  
Length: 1 - 20 Characters

**Terms of Use**:  
By submitting this request I understand that Eversource will provide my Portfolio Manager account with energy usage and billing data. Once approved, Eversource will have access to facility data from your listed properties. Eversource may use this data to recommend energy saving services. Eversource will not share your information or data with non-Eversource entities. Check the below box to agree to the aforementioned terms of use.

**Agreement**:  
I agree to my provider's **Eversource Web Services** Terms of Use.

[Send Connection Request]
My Shared Properties (0)

- Share (or Edit Access to) a Property
- Set Up Web Services/Data Exchange
- Download Sharing Report

Sharing Notifications (0)
You have no new notifications.

More About Sharing
No properties are currently shared between you and your contacts. Sharing can be helpful if you want to allow other people to view your property or help maintain or update information about it (e.g., property use details or meter data). You may also want to consider sharing with an organization who exchanges data to automatically update your meter information. Learn more about exchanging data.
Share Properties for Exchanging Data

Sometimes it’s really important to be able to share your property with someone else. Use this option to set up automatic exchange of data with your utility or service provider.

Select Web Services Provider (Account)
Which web services provider (account) do you want to share these properties with in order to exchange data? You can share multiple properties at once with a single provider.

Select web services provider from my contacts book:

Eversource Web Services (Eversource)

Select Properties
Which Properties do you want to share? Note that while you can share properties that include unsupported meter types, those specific meters will not be shared.

One Property
CT Dept of Environmental Protection

Choose Permissions
If you only need to choose one permission (because you are doing a single share or you want to give the same permissions for all your shares), you can choose that permission here. Otherwise, you may assign different permissions for different properties and/or contacts on the next screen.

- I want to set permission levels in bulk for all selected properties and meters.
- I want to provide different levels of access for each property or to each individual meter within a property.

Set Permissions
Cancel
## Share Your Property(ies)

To finish up, tell us what type of access the people you have selected should have for each of the properties that you have selected. The option to exchange data is only available for authorized accounts.

### Select Permissions for Each Contact

The access levels you select do not have to be the same for each property or each person.

Sort by: Property Name

### Table

<table>
<thead>
<tr>
<th>Name (ID)</th>
<th>No Access</th>
<th>Read Only Access</th>
<th>Full Access</th>
<th>Custom Access</th>
<th>Exchange Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>CT Dept of Environmental Protection (5047366)</td>
<td><img src="on" alt="No Access" /></td>
<td><img src="off" alt="Read Only Access" /></td>
<td><img src="on" alt="Full Access" /></td>
<td><img src="off" alt="Custom Access" /></td>
<td><img src="on" alt="Exchange Data" /></td>
</tr>
<tr>
<td>Eversource Web Services</td>
<td><img src="off" alt="No Access" /></td>
<td><img src="off" alt="Read Only Access" /></td>
<td><img src="off" alt="Full Access" /></td>
<td><img src="off" alt="Custom Access" /></td>
<td><img src="off" alt="Exchange Data" /></td>
</tr>
</tbody>
</table>

---

**NEW** Who gets to Share Forward?

- **Full Access** - Automatically includes “Share Forward” rights
- **Read Only** - Automatically does NOT include “Share Forward” rights
- **Custom** - You decide, along with the individual permissions for property, meter, goals and recognition permissions.
- **Exchange Data** - You decide, along with the individual permissions for property, meter, goals and recognition permissions.

---

**Share Property(ies)**
### Property Information

| Item                | None | Read Only Access | Full Access | Is Eversource your service provider? Y/N | ID2 | Description
|---------------------|------|------------------|-------------|----------------------------------------|-----|-------------
| Electric Grid Meter |      |                  |             |                                        |     |             

### Additional Options:

- **Share Forward**
  - Allow Eversource Web Services to share this property with others and give them any permissions that he/she has, including the right to share with more people.

**Apply Selections & Authorize Exchange**
Additional Information

US EPA Region 1
Emily Bolger
Bolger.Emily@epa.gov

Portfolio Manager Frequently Asked Questions:
https://portfoliomanager.zendesk.com/hc/en-us

Eversource
Eversource_ESPM_Support@eversource.com