



Waste benchmarking in Portfolio Manager for colleges and universities

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September 14, 2017

Agenda

- Poll questions
- Why benchmark waste
- Benchmarking waste in ENERGY STAR Portfolio Manager
- ENERGY STAR Commercial Buildings program updates
- Q&A

Check below for whichever applies

- We are currently benchmarking or tracking our campus waste data.
- I have heard of ENERGY STAR Portfolio Manager.
- Portfolio Manager is being used to benchmark our campus energy and/or water consumption data.



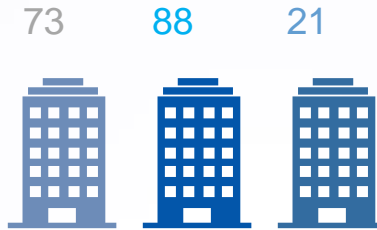
Why benchmark waste



Benchmarking allows you to:



Compare your buildings of a similar type to each other and track changes over time



Identify high and low performers in your portfolio and prioritize improvements where investment capital and staff time are limited



Compare your building to a national sample of similar buildings

Cost savings

- Orange Co. Health Dept. (FL) assessed wastes and eliminated 2 dumpsters, replaced with recycling- saving about \$260/month
- One Bush Street, San Francisco – recycling and composting programs in office building resulted in annual savings of \$24,000
- Synergy Health - 278 tons, saved \$177,614 (2013)
- City of Tamarac, FL - 4,370 tons, net benefit \$507,469 (2013)
- Georgia State Univ. - 306 tons, saved \$19,046 (2014)
- Rooms to Go in Atlanta, prevented/recycled 24,880 tons (mostly wood, cardboard, paper) – netting \$4.4 million (2014)
- Texas Army National Guard, Austin, TX, diverted 3,506 tons of MSW and Construction and Demolition from landfills, saving \$157,849 (2015)

Sustainability

- Americans create more than 250 million tons of trash each year, *excluding* construction and demolition debris, hazardous waste, and industrial waste.
- 167 million tons of that waste end up in landfills and incinerators.
- From a traditional GHG accounting perspective, waste management represents <5% of US emissions. But from a systems perspective, approximately 40% of emissions are associated with the provision of goods and food.
- This problem also creates a great opportunity to improve sustainability.



Benchmarking waste in Portfolio Manager

STARBUCKS COFFEE

STARBUCKS

ONE WAY

DESIGNER PROMISE

NASSAU

DESIGNER PROMISE

VOICE



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500,000 properties benchmarking energy use

50% of U.S. commercial building space

110,000+ properties benchmark water use

200,000+ properties benchmark energy/water using web services

30,000 ENERGY STAR certified properties

Waste tracking terminology

- **Waste Material Type** – The 29 different categories of materials that you can track (e.g. trash, mixed recyclables, food scraps, etc.)
- **Waste Management Method** – One of 4 options for how you manage your waste and materials
 - Donated/Reused; Recycled; Composted; Disposed
- **Disposed Waste Destination** – One of 4 options for where your disposed waste (e.g., trash) goes:
 - Landfill; Incineration; Waste to Energy; Other/Unknown
- **Waste Diversion** – the sum of the Composted, Recycled, and Donated/Reused Materials (i.e., everything that is not disposed)

| Waste/Materials | Disposed | Donated/ Reused | Recycled | Composted |
|--|----------|--------------------|----------|-----------|
| Appliances | X | X | X | |
| Batteries | X | | X | |
| Beverage Containers (aluminum, glass, plastic) | X | | X | |
| Building Materials - Carpet/Carpet Padding | X | X | X | |
| Building Materials - Concrete | X | X | X | |
| Building Materials - Mixed/Other | X | X | X | |
| Building Materials - Steel | X | X | X | |
| Building Materials - Wood | X | X | X | |
| Cardboard/Corrugated Containers | X | X | X | X |
| Compostable - Mixed/Other | X | | | X |
| Electronics | X | X | X | |
| Fats/Oils/Grease | X | | X | |
| Food/Food Scraps | X | X | | X |
| Furniture | X | X | | |
| Glass | X | X | X | |
| Grass/Yard Trimmings | X | | | X |
| Lamps/Light Bulbs | X | | | |
| Mixed Recyclables | X | | X | |
| Office Supplies | X | X | | |
| Pallets | X | X | X | |
| Paper - Books | X | X | X | |
| Paper - Copy Paper | X | | X | X |
| Paper - Mixed | X | | X | |
| Plastics - Mixed | X | | X | |
| Plastics - Wrap/Film | X | | X | |
| Regulated Medical Waste | X | | | |
| Textiles/Clothing | X | X | X | |
| Trash | X | | | |
| Other | X | X | X | X |


Supermarket A-1

1214 Main Street, Arlington, VA 22201 | [Map It](#)

Portfolio Manager Property ID: 4512223

Year Built: 1991

[Edit](#)

 Not eligible to apply for
ENERGY STAR
Certification

**Weather-Normalized
Source EUI (kBtu/ft²)**

**Why
not
score?**

Current EUI: N/A

Baseline EUI: N/A

Summary

Details

Energy

! Water

Waste & Materials

Goals

Design

Meter Summary

0 Waste and Materials Meters Total
In order to receive metrics for your property, you must provide meters. You haven't entered any waste or materials meters yet.

[Add a meter](#)

Current Waste and Materials Date:

[Not Available](#)

Enter Your Bills

Welcome to Waste and Materials Tracking!

Benchmarking your waste and materials is an important part in a comprehensive sustainability strategy. [Learn more about waste and materials tracking.](#)

Set Up Waste and Materials

Four ways to Enter Bill Data

Step 1: Select Material & Management Method

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Get Started Setting Up Waste/Materials Meters for Sample Supermarket

Most likely you don't have physical "meters" measuring your waste or materials, but you can set up a "meter" to easily track this information in Portfolio Manager. You should create one meter for every type of waste or material you are tracking (e.g. disposed trash, recycled cardboard, etc.) [Learn more about waste and material tracking.](#)

About Your First Waste/Material

What waste/material are you tracking? What are you doing with it? [Remove](#)

About Your Second Waste/Material

What waste/material are you tracking? What are you doing with it? [Remove](#)

About Your Third Waste/Material

What waste/material are you tracking? What are you doing with it? [Remove](#)

About Your Fourth Waste/Material

What waste/material are you tracking? What are you doing with it? [Remove](#)

[+ Add another Type of Waste/Material](#)

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- Select the Material Type you're managing
 - Trash, Cardboard, Furniture, etc.
- Select the Management Method
 - Disposed, Recycled, etc.
- Add up to 10 different meters at once

Step 2: Tell us which kind of meter you want

The screenshot shows the 'About Your Waste/Material Meters for AES - Library (Test)' form in the Energy Star Portfolio Manager. The form is titled 'About Your Waste/Material Meters for AES - Library (Test)' and includes a sub-header 'Tell us a little more about your waste and/or materials and how you plan to track them so we can set up your waste meters for you.' The form is divided into sections for 'Disposed- Trash' and 'How often is this waste/material collected?'. The 'Disposed- Trash' section has a radio button selected for 'Regularly (for example monthly trash or recycling)'. The 'How often is this waste/material collected?' section has a radio button selected for 'I know the weight or volume of the waste/material.' Below this, there is a 'Units:' dropdown menu with 'Please Select' as the current selection. There is also a radio button for 'I only know the size of the bin/dumpster.' The 'When did you first start tracking it?' section has a text input field and a calendar icon. At the bottom of the form, there is a 'Back' button, a 'Create Meter(s)' button, and a 'Cancel' link. The footer of the form includes social media icons for Twitter, Facebook, YouTube, and LinkedIn, along with links for 'Contact Us', 'Privacy Policy', 'Browser Requirements', and 'ENERGY STAR Buildings & Plants Website'.

- First, select Regular or Intermittent
- Page will dynamically change based on your choices
- For Regular, chose whether you will enter with a quantity, or just tell us the size of your dumpster / container

Data entry options

- **Regular** – Meters for materials that are picked up on an ongoing basis (e.g., weekly pickup of trash and recycling). There are two basic paths:
 - Measured – Requires a weight or volume for each entry
 - This can be marked as “estimated”
 - Container Size – Is based on the size of the container
 - Enter a container size, and specify the number of times it was emptied and the percent full
- **Intermittent** – Meters for infrequent or 1-time events (e.g., annual donation of electronics, or construction materials).

Step 3: Enter data

- Tables to enter records for each month
 - Similar to entering energy and water
 - Exact fields will depend on the meter type (regular, intermittent)
- You do not need to complete this step to set up a meter
 - Come back and fill in later
- Can create bulk spreadsheet upload template or get data uploaded through web services

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Your waste and/or material meters have been created! If you have your meter entries ready, you can enter them below. Or, you can continue with setting up your meters and enter your meter entries later.

Waste/Material Meter Entries for AES - Library (Test)

Now that you've provided basic information about how you will be tracking your waste and/or materials, you can start tracking by entering your amounts below.

1 Waste/Material Meter(s) - Collected regularly (data should have no gaps)

▼ Disposed- Trash [Edit](#)

| | Start Date | End Date | Quantity (Pounds) | Cost (\$) | Disposal Destination | Estimated Value |
|--------------------------|------------|------------|----------------------|----------------------|------------------------------------|--------------------------|
| <input type="checkbox"/> | 1/1/2015 | 1/31/2015 | 100 | 50.00 | 100% Landfill Edit | <input type="checkbox"/> |
| <input type="checkbox"/> | 01/31/2015 | 03/03/2015 | <input type="text"/> | <input type="text"/> | 100% Landfill Edit | <input type="checkbox"/> |

[Delete Selected Entries](#)
[Add Another Entry](#)
[Learn how to copy/paste](#)

Upload data in bulk for this meter:

You can copy/paste into the table above ([instructions in this FAQ](#)), or upload an Excel spreadsheet using our simple [spreadsheet template](#).

No file selected.

[Cancel](#)

Data required by meter type

| Regular Measured | Regular Container | Intermittent |
|---|--|---|
| Most like metered energy | <ul style="list-style-type: none"> • Instead of a quantity, enter number of pickups & average percent full • There is no “estimated” flag | Similar to bulk energy, with one date rather than a range |
| <ul style="list-style-type: none"> • Start Date • End Date • Quantity • Cost • Disposal Destination (if applicable) • Estimated (Y/N) | <ul style="list-style-type: none"> • Start Date • End Date • # of Times Picked Up • Average Percent Full • Cost • Disposal Destination (if applicable) | <ul style="list-style-type: none"> • Start Date • Quantity • Cost • Disposal Destination (If applicable) • Estimated (Y/N) |

- **Note if the waste is disposed additional data is required**
 - % for each option: Landfill, Waste-to-Energy, Incineration, Unknown
 - % values must add to 100; can omit options that are 0%

Volume conversions

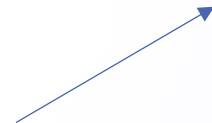
- **Volume conversions**

- Used to convert volume into weight
- Important because the main unit for metrics is tons

- **Materials without conversions**

- Cannot use “container size” option
- For these materials you need to provide a weight
- If you need to estimate the weight, there is a way to mark each entry as estimated

| Materials without Volume Conversions |
|--------------------------------------|
| Appliances |
| Batteries |
| Electronics |
| Furniture |
| Lamps/Light Bulbs |
| Office Supplies |
| Regulated Medical Waste |
| Other |



Step 4: Associate your waste meters

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

Your meter entries have been added to your meters!

Select Waste and/or Materials Meters to Include in Metrics

Tell us which meters to include when calculating the Waste metrics for [AES - Library \(Test\)](#) so that we can provide you with the most accurate metrics possible.

Summary

3 Meters representing the waste and materials for [AES - Library \(Test\)](#) (a single building).

Waste and Materials Meters

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

| <input checked="" type="checkbox"/> | Name Meter ID | Type |
|-------------------------------------|--|-------------------------------------|
| <input checked="" type="checkbox"/> | Disposed- Trash 21773191 | Disposed Trash |
| <input checked="" type="checkbox"/> | Composted- Compostable - Mixed/Other 21773283 | Composted Compostable - Mixed/Other |
| <input checked="" type="checkbox"/> | Recycled- Mixed Recyclables 21773281 | Recycled Mixed Recyclables |

Apply Selections [Cancel](#)

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- Tell us which meters to add to your total for metrics
- Similar to the process for energy and water
- Usually, all of your meters will be associated

Waste and materials metrics

- **Overall Aggregate Metrics**
 - Total Waste (Disposed AND Diverted)
 - Total Diverted Materials
 - Includes: Recycled, Composted, and Donated/Reused
 - Total for each management method (e.g., Disposed, Recycled)
 - Total for each disposal destination (e.g., Landfill, Incineration, ...)
- **Detailed Metrics for each type of waste (e.g., Cardboard – Recycled)**
 - Total Cost and Tons
 - Estimated Data Flag

Where do I get this data?

- The goal of waste and materials management in Portfolio Manager is to help you start tracking information you may not be tracking today
- Ask your hauler if it is possible to measure the weight of your materials
 - This should be your long term goal
 - You can also try to estimate the weight yourself
- If you can't get the weight, we offer the "Container" option, which requires you to estimate a % full
 - When you first start using Portfolio Manager, you can enter 100% full
 - Over time, try to start looking once a month

The value-add of using Portfolio Manager

- Encourages ongoing, monthly tracking of wastes which can lead to better management
- Standardizes tracking across your portfolio for better uniformity
- Distinguishes between measured and estimated values
- Enables everyone involved with a campus to be working from the same data, also integrating energy, water, and waste data into a single platform
- Begins a groundswell of organizations requesting better data from their haulers and technology providers
- Robust reporting functions both for you and for internal and external audiences, including sustainability-related reporting
- Eventually, could help EPA to develop rough comparative metrics



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Management Tool



Assess whole building energy, water, and waste consumption



Track changes over time in GHG emissions, ENERGY STAR 1-100 scores, and more



Track green power purchase



Create custom reports



Share/report data with others



Apply for ENERGY STAR certification



Voluntary competition being held July 1st - December 31st, 2017

Recognition for percentage-based improvement over baseline for energy, water, **and waste reduction** in commercial buildings

Free educational outreach events throughout

Many sponsors, partners, and collaborators, including University of Central Florida's *Energy Specialist Training Program*, and Valencia College

www.cfbotb.org



Program updates

Agenda highlights:

- How to prepare for 2018 updates to 1-100 ENERGY STAR scores
- Best practices for deploying electric vehicle charging stations
- ENERGY STAR market insights & program updates
- The future of lighting for commercial applications
- Next-level advances in smart buildings
- The financial value of energy efficiency
- Reaching and engaging tenants and occupants
- ... and more!

Preview agenda & book your room now:
www.energystar.gov/BuildingsPartnerMeeting

ENERGY STAR 2017 Commercial Buildings Partner Meeting

October 24 – 25 Sheraton Grand Chicago

Interactive map of policies and programs



www.energystar.gov/policiesandprograms

Can be hosted on your site!

Launch your own efficiency competition!



Step-by-step guidance on how to:

1. Set Goals
2. Define the Playing Field
3. Dedicate Resources
4. Recognize Participants
5. Keep Score
6. Plan the Launch
7. Get the Word Out

www.energystar.gov/competitionguide

Questions?

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Helpful resources:

- [Waste FAQs](#)
- [Managing and Reducing Wastes: A Guide for Commercial Buildings](#)
- [EPA's volume-to-weight conversion factors for waste](#)

Connect with me at AASHE!