

Benchmarking & Energy Efficiency in Columbus

Columbus Apartment Association
July 27, 2021





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Agenda

1. City of Columbus Climate Priorities
2. Benchmarking 101
3. Benchmarking in Columbus
4. Energy Efficiency 101
5. Benchmarking Process – Multi-Family
6. Questions

City of Columbus Climate Priorities



Pathway to a Carbon Neutral City

- In June 2017, Mayor Ginther signed onto the **Global Covenant of Mayors for Climate & Energy**, committing us to developing a plan consistent with the Paris Climate Agreement
- In the 2020 State of the City, the Mayor further announced a goal for Columbus to become **carbon neutral by 2050**



Climate Action Plan:

Neighborhoods



Buildings



Transportation



Waste

Benefits Beyond Climate



Climate Justice

Equitable distribution of benefits from climate action planning across the community



Environmental Quality

Preserves and improves **natural ecosystems** and promotes biodiversity



Human Health

Improves **public health through reduced pollutants and hazards**



Economic Prosperity

Provides opportunity for funding **revenue streams**, reduced or stable energy costs, and **job creation**

Benchmarking & Energy Efficiency are aligned with our Climate Action Plan



**SUSTAINABLE
COLUMBUS**
ANDREW J. GINTHER, MAYOR

Why are Buildings Important?



Buildings represent 56% of Columbus' community-wide GHG emissions

Leading to a significant opportunity for emissions and cost savings

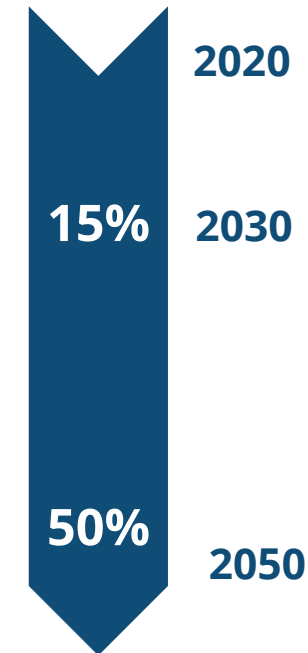
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AND ZONING SERVICES



Benchmarking & Climate Action

- Foundational to energy efficiency & ongoing energy management
- Fundamental to fiscal & social responsibility



By 2050, we need to cut energy use from commercial, multifamily, residential, and municipal buildings by 50%

Benchmarking Ordinance Goals

1. Create structure for building owners to become aware of energy & water use
2. Provide reliable data so inefficiencies can be identified & corrected
3. Inform the market of building energy & water performance



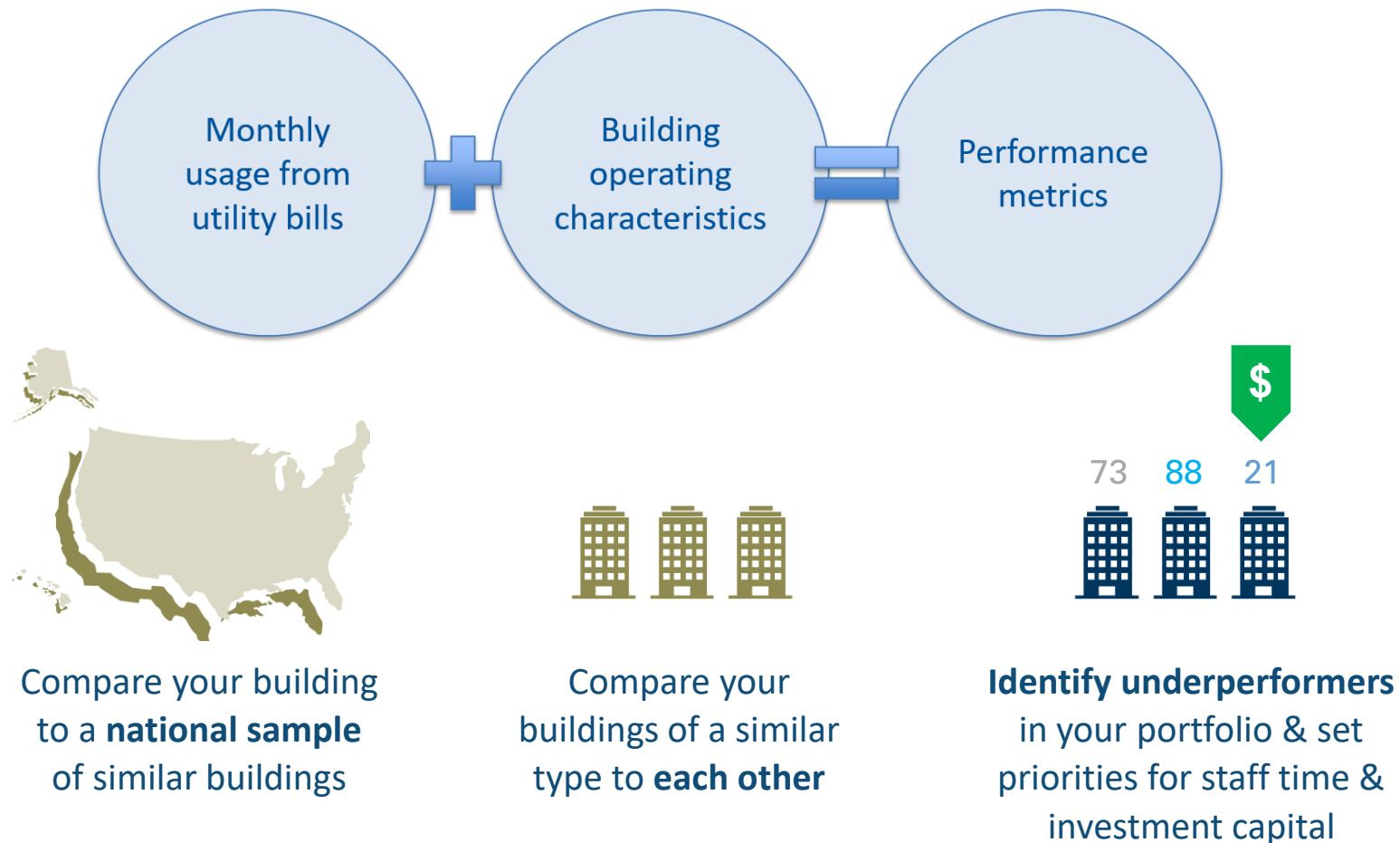
Benchmarking 101



What is Benchmarking?

- Benchmarking is the process of tracking the energy use of a building and comparing its performance to similar buildings
- Benchmarking makes a city more energy efficient by improving building owners' awareness of energy performance
- Benchmarking typically yields a 2-3% annual energy reduction through increased awareness¹

Benchmarking Process





ENERGY STAR® PortfolioManager®

- **Industry standard tool** for measuring energy performance and comparing building performance with similar facilities nationwide
- All U.S. jurisdictions with mandatory benchmarking policies require use of Portfolio Manager
- Largest accessible commercial buildings data set

- **Ensures consistency across:**

- Performance metrics
- Data quality
- Reporting process



Benefits of Benchmarking

As a building owner or tenant:

- Better understand the energy performance of your building/unit
- Prioritize investment in underperforming buildings/units
- Learn best practices from similar building types
- Earn recognition for high-performing buildings
- Develop a comprehensive energy management plan



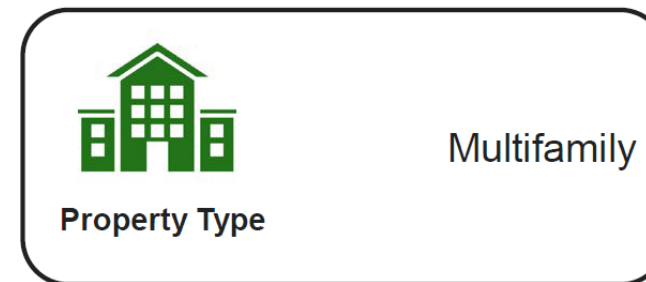
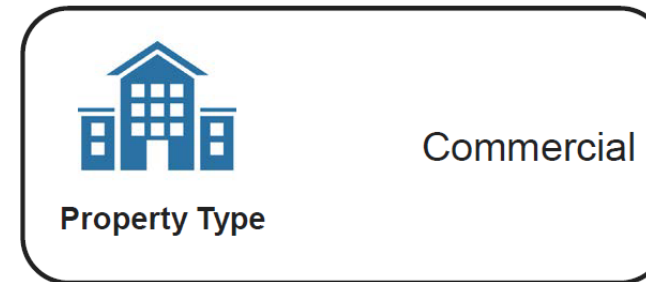
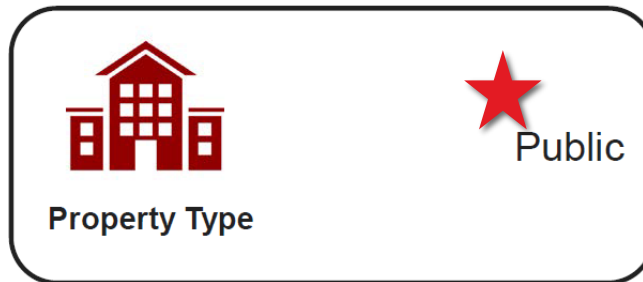
Benchmarking in Columbus



Columbus' Benchmarking Ordinance

- In March of 2020, Columbus City Council passed a Benchmarking and Transparency Ordinance requiring annual benchmarking and reporting for:
 - City buildings 25,000 square feet and above
 - Non-City buildings 50,000 square feet and above
- Compliance began in 2021 with buildings over 100,000 square feet
- 2022 first year all buildings over 50,000 square feet submit
- ~2,100 buildings will be required to comply overall

Who's Covered?



★
City of Columbus
buildings over
25,000 square feet
will be required to
comply


City Resources Available

- Full-time, **dedicated** City staff
- **Automated benchmarking** for Public Utilities water & electric customers
- Dedicated technical assistance
- Step-by-step **guidance** to comply
- Benchmarking Help Desk:
benchmarking@Columbus.gov
- Website:
<https://www.columbus.gov/sustainable/benchmarking/>

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Benchmarking Compliance
Quick Guide

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This Benchmarking **Compliance Quick Guide** is intended to guide you through the required steps to comply with the Columbus Energy and Water Benchmarking Ordinance in 2021. All steps below must be completed **by December 15, 2021**. After 2021, June 1 will remain the ongoing annual deadline to submit the previous year's Benchmarking Report.

In the inaugural year of the Benchmarking Ordinance, only buildings 100,000 square feet and larger will be required to submit Benchmarking Reports **capturing calendar year 2020 energy data**. Reporting of water data is optional in 2021 and will be required beginning in 2022.

For assistance with any step of the Benchmarking process, please contact the Columbus Benchmarking Help Desk at benchmarking@Columbus.gov or (614) 724-1277.

If your building completed Phase 1 earlier this year, jump to step 3. If not, begin with step 1.

1. Determine Eligibility, Share Contact Information, and Collect CBUSID

<input type="checkbox"/>	Determine whether your building(s) must comply	<ul style="list-style-type: none">Buildings 100,000 square feet and above will be required to comply with the Benchmarking Ordinance in 2021.Find your building on the Covered Buildings List here.
<input type="checkbox"/>	Identify a benchmarking leader and share your contact information	<ul style="list-style-type: none">Designate an in-house building staff member or 3rd party provider to be your benchmarking leader.Fill out the Building Contact Form to receive electronic notifications and updates.
<input type="checkbox"/>	Look up your building(s)' CBUSID	<ul style="list-style-type: none">Use the Building ID Lookup Tool to find your CBUSID.If you can't find your ID but believe your building meets the benchmarking requirements, reach out to the Help Desk.

2. Set up your ENERGY STAR Portfolio Manager property profile

<input type="checkbox"/>	Create an ENERGY STAR Portfolio Manager Account	<ul style="list-style-type: none">Visit energystar.gov/portfoliomanager to create an account.You may use an existing Portfolio Manager account.
<input type="checkbox"/>	Gather basic information required to benchmark	<ul style="list-style-type: none">Collect the basic information required to benchmark using the Data Collection Worksheet.
<input type="checkbox"/>	Create a property and enter use details	<ul style="list-style-type: none">On the MyPortfolio tab, select ADD A PROPERTY and following the guiding steps to create your property.On the DETAILS tab, use the ADD ANOTHER TYPE OF USE menu to select a property use. Click ADD and enter the requested information.
<input type="checkbox"/>	Enter your CBUS ID	<ul style="list-style-type: none">On the DETAILS tab, click EDIT under UNIQUE IDENTIFIERS. From STANDARD IDs, select COLUMBUS BUILDING ID.Enter the CBUS ID associated with your building. CBUS IDs can be found using the Building ID Lookup Tool.

Benchmarking Quick Guide for 2021 Reporting

Energy Efficiency 101



What is Energy Efficiency?

- Energy Efficiency is using less energy to accomplish the same job, while reducing energy bills, lowering the infrastructure burden, and reducing greenhouse gas emissions¹
- ‘Using less energy to perform the same task’
- Eliminating waste or the “Energy you don’t use”

Benefits of Energy Efficiency

Building Owners

- Increases property value
- Attracts new tenants



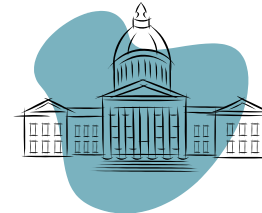
Tenants / Renters

- Lowers utility costs
- Improves indoor environment



Community

- Less air pollution improves public health
- Lessens infrastructure burden
- Creates local, high-skilled jobs



Benchmarking Process – Multi-Family



How to Get Started Benchmarking

1. Collect Data

2. Input Data

3. Submit /Review Data



Portfolio Manager: What data is required to benchmark your property?

You can benchmark almost any type of property in Portfolio Manager! The information required varies depending on the type of property and whether or not the property is eligible for an [ENERGY STAR Score](#).

Pick your country and property type to get started.

Country: [Why is this needed?](#)

Property Type:

[Add Another Use Type](#)

You can look up more than one use type if needed. [Learn more about when to use different use types when setting up your property.](#)

[Lookup Required Data](#)

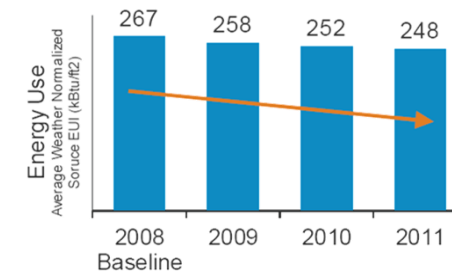
What Metrics Are Available?

All properties are eligible to receive metrics such as [Source EUJ](#) by providing [Gross Floor Area](#) and 12 months of energy usage. The [ENERGY STAR Score](#) is available for specific property types and requires additional information. [Learn more about eligibility for the ENERGY STAR Score](#)

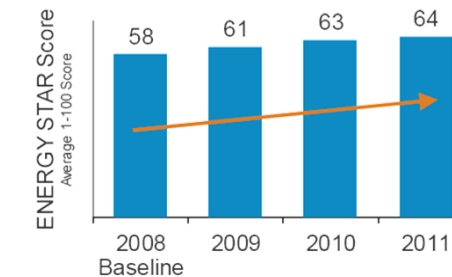
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Monthly Entries			
	Start Date	End Date	Usage therms
<input type="checkbox"/>	1/1/2019	1/31/2019	15,900
<input type="checkbox"/>	2/1/2019	2/28/2019	23,500
<input type="checkbox"/>	3/1/2019	3/31/2019	16,500
<input type="checkbox"/>	4/1/2019	4/30/2019	200
<input type="checkbox"/>	5/1/2019	5/31/2019	50



7%
Savings



6 point
increase

Step 1a – Collect Data: Building Use

#1a) Collect Property Use Details

Collect Basic Building Information

1. Building Use Details

- Name and Address
- Primary Use
- Gross Floor Area
- Year Built
- Operating Hours

Building Use Details

Data Required for All Properties	
Property Name	_____
Property Address	_____
Total <u>Gross Floor Area</u> of Property	_____ Sq. Ft./Sq. M.
<u>Irrigated Area</u>	_____ Sq. Ft./Sq. M./ Acres
<u>Year Built/Planned for Construction</u>	_____
<u>Occupancy</u>	_____
<u>Number of Buildings</u>	_____

Office Uses

Data Collected for Office Uses	
The following information is required to get an ENERGY STAR Score (if eligible):	
<u>Gross Floor Area</u>	_____
<u>Weekly Operating Hours</u>	_____
<u>Number of Workers on Main Shift</u>	_____
<u>Number of Computers</u>	_____
<u>Percent That Can Be Cooled</u>	_____
The following information is optional and not used to calculate a score; it may inform future analysis and score revisions by EPA and/or may help you manage and compare your properties:	
<u>Percent That Can Be Heated</u>	_____

Step 1b – Collect Data: Monthly Energy

#1b) Collect Data - Monthly Energy Data

- At least 12 months of monthly energy use data is required to accurately benchmark a facility
- Data collection options: Multi-Family
 1. Request whole-building data from AEP Ohio
 2. Automated Benchmarking For Department of Public Utilities (DPU) – Electric & Water
 3. Columbia Gas- TBD

Manage Bills (Meter Entries) for [Example Warehouse](#)

Meter Selection: Electric Grid Meter - 24470370

▶ **Basic Meter Information** (***click on the arrow to the left to expand this section)

▼ Monthly Entries

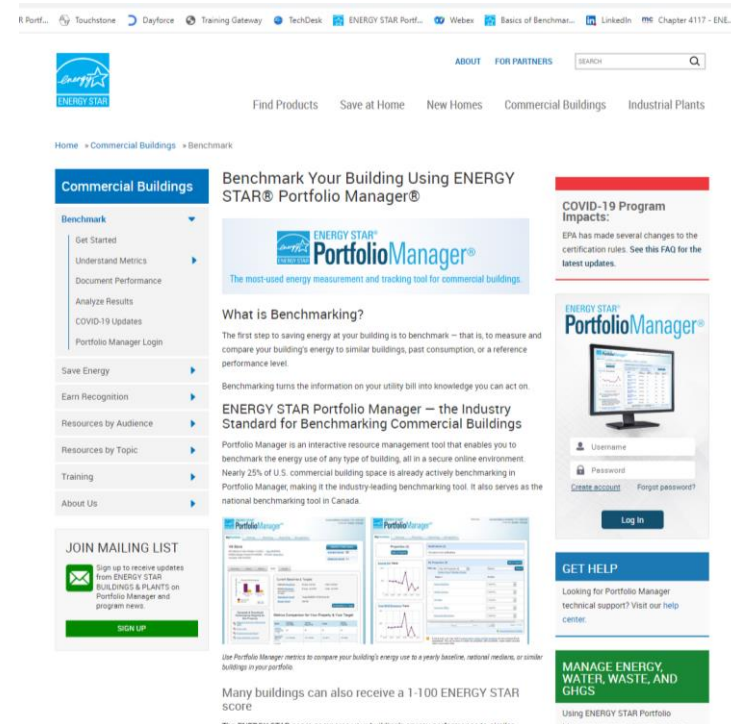
Display Year(s): 2016

	Start Date	End Date	Usage kWh (thousand Watt-hours)	Total Cost (\$)	Estimation	Green Power	Demand (kW)
<input type="checkbox"/>	12/30/2015	1/30/2016	2,880	465.08	<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	1/30/2016	3/1/2016	2,720	445.05	<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	3/1/2016	3/30/2016	2,400	384.22	<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	3/30/2016	4/28/2016	2,440	386.44	<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	4/28/2016	5/28/2016	2,225	299.24	<input type="checkbox"/>	<input type="checkbox"/>	

Step 2a – Create Account/ Login to ENERGY STAR Portfolio Manager (ESPM)

#2a) Create Account

- ESPM Home Page does not look like a usual login page
- Create Account/Login on right



Step 2b – Input Property Details into Portfolio Manager

#2) Input Property Details

- Once building use details, enter this information directly into 'Details' tab in ESPM
- For more detailed questions such as 'Number of Computers' use default values if unknown

Welcome to Portfolio Manager

Helping you track and improve energy efficiency across your entire portfolio of properties.

Username: Property Uses and Use Details

Password: [View as Diagram](#)

Name	Property Use Type	Gross Floor Area	Action
▼ Building Use	Office	55,000 ft²	I want to... ▼
	Value	Current As Of	Temporary Value?
★ Gross Floor Area	55000 ft²	01/01/1975	No
★ Weekly Operating Hours	65 (default value)	09/01/2021	No
★ Number of Workers on Main Shift	0	01/02/2010	No
★ Number of Computers	0	01/02/2010	No
Percent That Can Be Heated	50 % or more	01/01/1975	No
★ Percent That Can Be Cooled	50 % or more	01/01/1975	No
★ This Use Detail is used to calculate the 1-100 ENERGY STAR Score.			
▶ Parking Use	Parking	50,000 ft²	I want to... ▼
! Property GFA (Buildings): 60,000 (used to calculate EUI)			
Property GFA (Parking): 50,000			

Step 2b – Enter CBUSID in ESPM

#2) Enter CBUSID

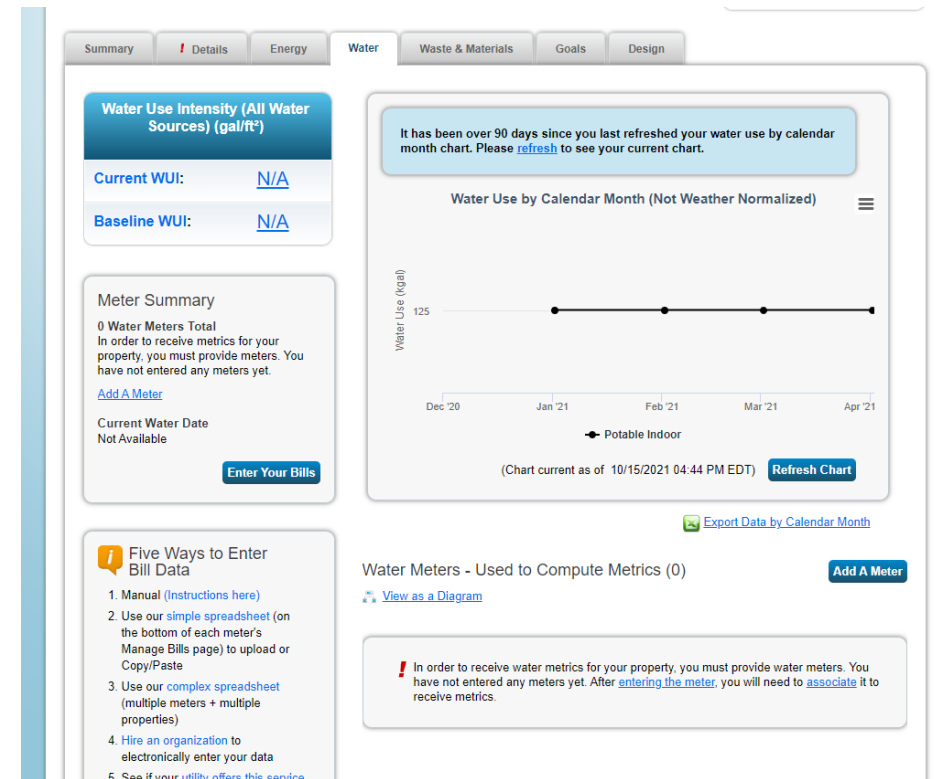
- In the 'Details' Tab on the left side of the screen
- No space between 'CBUS' and the 4 digit number

The screenshot displays two sections of a web application interface. The top section, titled 'Unique Identifiers (IDs)', contains the following text: 'Portfolio Manager ID: 18004881', 'Custom IDs: None', and 'Standard IDs: None'. Below this is a yellow information icon followed by a paragraph: 'You can select from Portfolio Manager's Standard IDs to provide information to others in data requests. Or you can create up to three Custom IDs so that you can cross reference your property in other systems.' An 'Edit' button is located at the bottom right of this section. The bottom section, titled 'Standard IDs', contains a paragraph explaining that standard IDs are typically used in data collection by state and local governments with benchmarking laws, and refers to a FAQ for help. Below this is a label 'Standard ID(s):' followed by a dropdown menu currently showing 'Columbus Building ID' and an 'ID:' field containing 'CBUS1234'. There is a '+ Add Another' link below the ID field. At the bottom right of the entire form are 'Save' and 'Cancel' buttons.

Step 2b (cont'd) – Create Meters in ESPM

#2a) Create Meters

- Energy and Water Meters need to be created in ESPM prior to syncing for automated benchmarking or prior to manual entry
- Click 'Add a Meter' button and follow instructions in 'Compliance Quick Guide'



Step 2c – Input Data – AEP Ohio

#2) Input Data

- Collect Meter #'s for each tenant
- Benchmarking Help Desk can assist in collecting meter numbers
- Email completed form to AEPOHIOBenchmarking@AEP.com
- Enter anonymized monthly data into a single electric meter in ESPM

#	Property	Account Number	Premise Number	Meter Number	Benchmark Year	Contact Name	Contact Email
Example	Primrose Apartments	1099999999	109999999	257885671	2020	John Doe	JohnDoe@gmail.com
1							
2							
3							
4							
5							

Step 2c (cont'd) – Input Data – DPU Electric and Water – Automated Benchmarking

#2) Sync meters with your ESPM Account

- [Columbus.utility.touchstoneiq.com/login](https://columbus.utility.touchstoneiq.com/login)
- Columbus Utilities Auto-Upload User Guide goes through all steps
- Requires utility bill account #
- Verification request(s) are sent to tenant
- For questions and assistance
Columbus.Utilities@touchstoneiq.com
- Up to two years of back-data will be pushed into meter(s), then monthly data

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ANDREW J. GINTHER, MAYOR
DEPARTMENT OF PUBLIC UTILITIES

Login Register

Register

Name

E-Mail Address

Password

Confirm Password

Register

ENERGY STAR® Portfolio Manager® Account Properties

Select the building(s) that you want to connect: SYNC WITH ESPM

NAME ↑	ESPM PROPERTY ID	CONNECT
Cambridge Building	20408675	CONNECT
Chicago Building	20251210	CONNECT
Cool City Test Building	20230833	CONNECT
Corporate Office	20150634	CONNECT
Denver Building - Speer	20293709	CONNECT
Florida Office / Changed To Denver	20165131	CONNECT

Step 3 – Submit Benchmarking Report & Review Data Metrics

#3) Submit Benchmarking Report to the City of Columbus

- Last step to compliance with City of Columbus Benchmarking Ordinance is to submit report
- City of Columbus does not have access to your ESPM account even after syncing meters and entering CBUSID

The screenshot shows the ENERGY STAR Portfolio Manager interface. At the top, there's a navigation bar with 'MyPortfolio', 'Sharing', 'Reporting', and 'Recognition' tabs. The 'Reporting' tab is active. A green banner at the top of the main content area says: 'Complete this form to respond to the "2022 Columbus Energy and Water Reporting: Data Request" for Columbus Benchmarking Ordinance. This response has also been added to your "Templates & Reports" list on the Reporting tab.' Below this, the title is 'Respond to Data Request: 2022 Columbus Energy and Water Reporting: Data Request from Columbus Benchmarking Ordinance (City of Columbus)'. The main content area is divided into two columns. The left column is titled 'About this Data Request' and contains the following information: 'Data Requested By: Columbus Benchmarking Ordinance', 'Instructions: Please read these instructions thoroughly.', 'The following steps are required before submitting your Benchmarking Report:', a list of steps: '--Verify that your building is covered by the Benchmarking Ordinance on the [Building ID Lookup Tool](#).', '--Add your CBUS ID to Portfolio Manager.', '--Enter whole-building energy and water use data for the compliance period, January 1, 2021 – December 31, 2021, into Portfolio Manager.', '--Run the Data Quality Checker for the compliance period and make appropriate changes.', 'With those steps completed, use the guidance below to submit your Benchmarking Report:', and a final instruction: '--In the "About Your Response" section, please indicate whether the report is being submitted for your own building(s)'. The right column is titled 'Responding to Data Requests' and contains the text: 'You are viewing this screen because someone has asked you to provide data to them in the form of a data request. To respond, simply fill out the information on this screen and select what properties you wish to include (some decisions may have been made by the data requestor.)'. Below this text is a link: 'Also see the [How to Respond to Data Requests](#) guide.' and a progress indicator with 10 dots, the first of which is filled.

Step 3 (cont'd) – Review Data Metrics

#3) Review Data

- ENERGY STAR Portfolio Manager provides valuable **performance metrics** on your building:
 - Energy analytics:
 - ENERGY STAR 1 – 100 Score
 - Weather-normalized site/source EUI
 - Annual greenhouse gas emissions
 - Goal setting and ongoing tracking



Energy Use Intensity (EUI)

EUI is the energy used per square foot per year

National median site EUI:

- Office = 52.9 kBtu/ft²
- Hospital = 234.3 kBtu/ft²
- Strip mall = 103.5 kBtu/ft²
- Multi-Family = 59.6 kBtu/ft²

Questions? Want to get started?

Contact :

Eric Porr, ETPorr@columbus.gov

For compliance with Columbus' Benchmarking Ordinance:

Email us at benchmarking@columbus.gov

Visit us online at columbus.gov/sustainable/benchmarking

