An Overview of Portfolio Manager for Commercial Building Benchmarking

United States Environmental Protection Agency

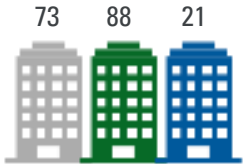
Benchmarking allows you to:

- Evaluate portfolio-wide performance
- Understand individual building performance
- Compare energy performance to national median
- Identify and address potential problems by looking at monthly trends
- Track the impact of energy, water, waste management strategies

ANY building can be benchmarked.

Compare your building to a **national sample** of similar buildings

Compare your buildings of a similar type to **each other**



Identify underperformers in your portfolio and set priorities for the use of limited staff time and/or investment capital

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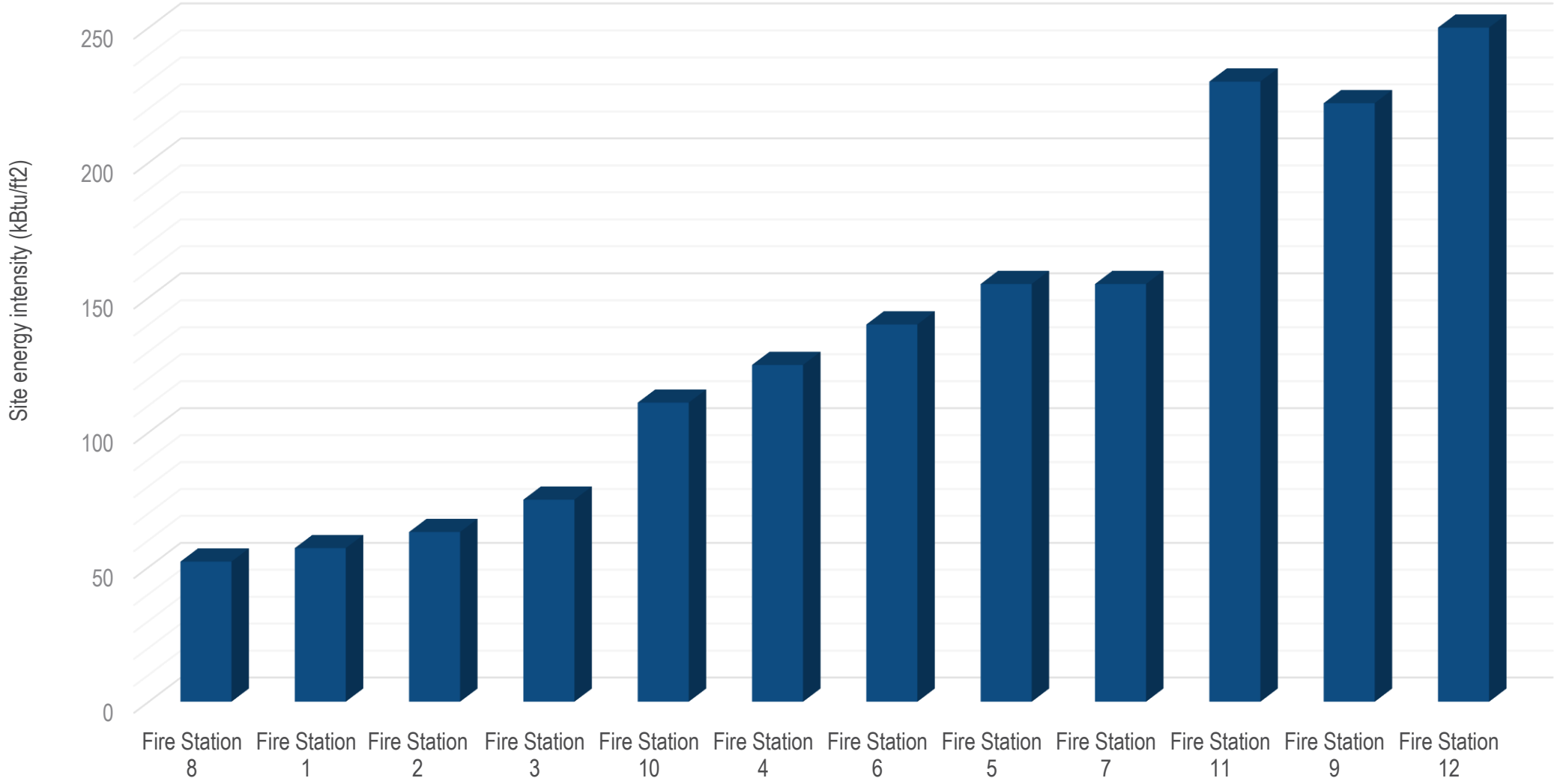
Comparing 12 City-Owned Fire Stations



Why Focus on Buildings and Plants?

Buildings and plants use a lot of energy.

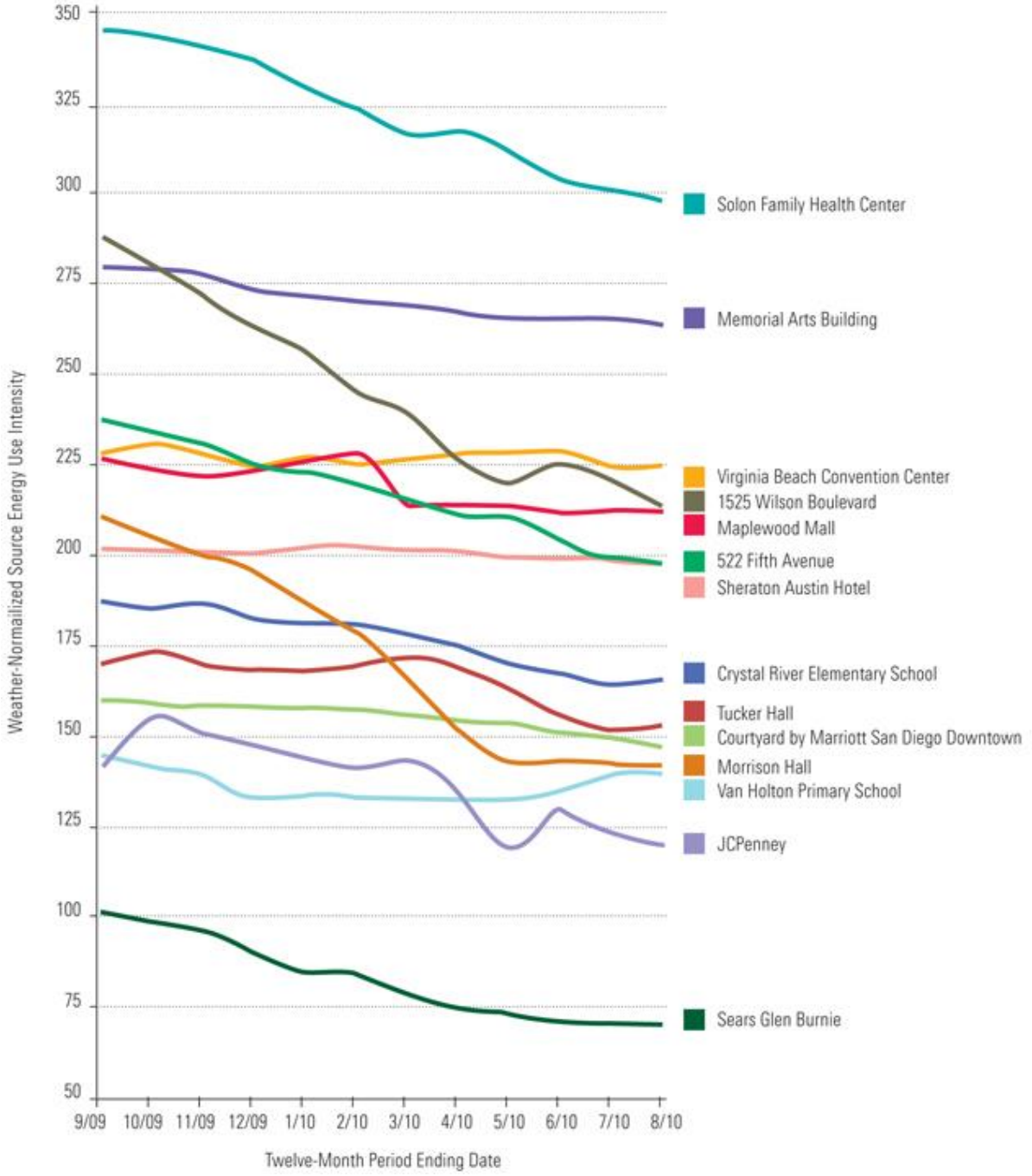
The average building wastes **30 percent** of the energy it consumes.

Why Focus on Buildings and Plants?

Energy use reductions of **10%** or more are possible with little or no cost.

Why Focus on Buildings and Plants?

Energy use reductions of 10–60% are possible in a single year.



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ENERGY STAR® Portfolio Manager®

- Launched Portfolio Manager in 1999 to help organizations increase efficiency of energy use
- Built on the principle that the foundation of good management is good information
  - Energy tracking and management was not widely practiced; no standardization
  - Designed for the use of building owners and managers, not for reporting to the EPA
- Added water tracking in 2006, in collaboration with the EPA's WaterSense
- Added waste tracking in 2016, in collaboration with the EPA's Office of Resource Conservation & Recovery

ENERGY STAR® Portfolio Manager®

Management Tool

Assess whole building energy and water consumption, plus waste

Track green power purchase

Share/report data with others

Track changes in energy, water, greenhouse gas emissions, and cost over time

Create custom reports

Apply for ENERGY STAR certification

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ENERGY STAR® PortfolioManager®

Hundreds of metrics, including:

Energy use
Source, site, weather normalized, demand

Water use
Water use intensity, Water Score (for Multifamily)

Waste & Materials
Waste intensity, diversion rate

1-100 ENERGY STAR score

GHG emissions
Indirect, direct, total, avoided

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Benchmarking with Portfolio Manager is the Industry Standard

GM
HANES Brands Inc
TARGET
PROVIDENCE Health & Services
USAA
USAA Real Estate Company
sears
Hines
VORNADO REALTY TRUST
BOEING
FC PS FAIRFAX COUNTY PUBLIC SCHOOLS
FOOD LION
CORNING
City of Seattle
STAPLES
STARBUCKS COFFEE
CBRE
NISSAN
3M
PEPSICO
TOYOTA
KOHL'S
JLL
Cleveland Clinic
TRANSWESTERN®
The Performance Advantage in Real Estate
verizon
COLGATE-PALMOLIVE

www.energystar.gov/JoinBuildings

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Who Is Using Portfolio Manager?

- Building owners, managers, tenants, service providers
- Local, county, and state governments, some with benchmarking and public disclosure policies
- Federal agencies under executive orders & statutes
- Green building certification programs
  - LEED, Green Globes, BREEAM
- Consumer information sites
  - TripAdvisor, CoStar, Apartments.com
- Energy competitions
  - Kilowatt Crackdowns
- Investors, via sustainability reporting and ranking
  - GRESB, Greenprint, CDP
- Multifamily financing industry
  - Fannie Mae, Freddie Mac, HUD

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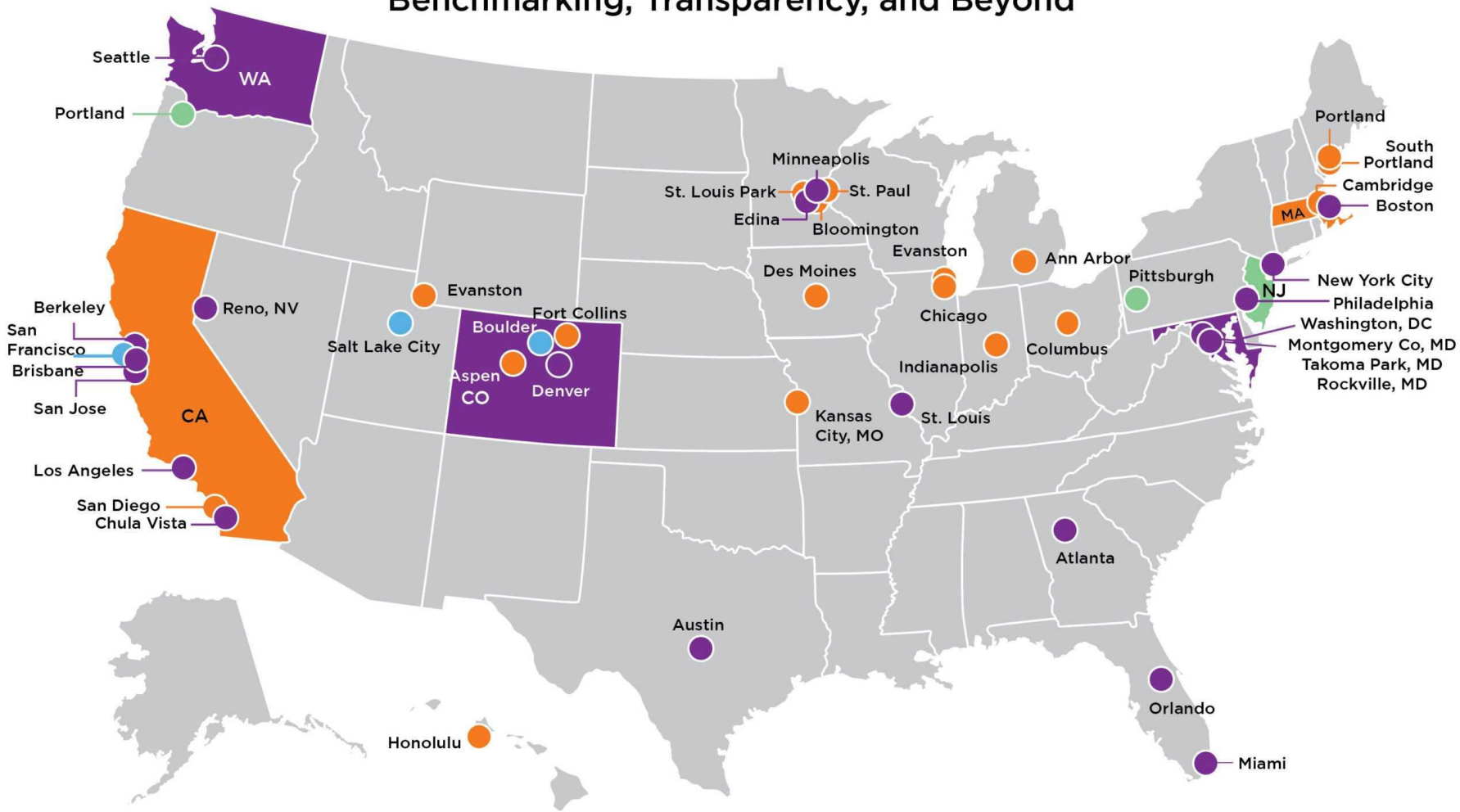
State and Local Policies

U.S. City, County, and State Policies for Existing Buildings: Benchmarking, Transparency, and Beyond



- Benchmarking required for public and commercial buildings
- Benchmarking required for public, commercial, and multifamily buildings
- Benchmarking and additional actions required for public and commercial buildings
- Benchmarking and additional actions required for public, commercial, and multifamily buildings

IMT
INSTITUTE FOR MARKET TRANSFORMATION

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imt.org/public-policy/building-performance-policy-center

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Benchmarking laws that require use of ENERGY STAR Portfolio Manager

More than 3 dozen laws nationwide

Buildings must:

1. Benchmark their energy use
2. Report it on an annual basis
3. Disclose to public or potential buyers/lessees

The EPA only advises on the use of Portfolio Manager

ENERGY BENCHMARKING
FOR BUILDINGS IN THE DISTRICT

WHAT IS BENCHMARKING?

The Clean and Affordable Energy Act of 2008 established that all private buildings over 50,000 gross square feet within the District of Columbia, including multifamily residences, must measure and disclose their energy and water consumption to the Department of Energy and Environment (DOEE). The annual reporting deadline is **April 1st** of each year, for the previous calendar year.

Benchmarking is defined as tracking a building's energy and water use and using a standard metric to compare the building's performance against past performance and to its peers nationwide. In the District, benchmarking and reporting is done using U.S. EPA's free ENERGY STAR® Portfolio Manager® tool. Summary data for each reported building is published on DOEE's website.

IS MY BUILDING REQUIRED TO BENCHMARK?

All commercial and multifamily buildings over 50,000 gross square feet are required to report benchmarking data to the District on a yearly basis. Check your building plans or blueprints and the DOEE's Covered Building List to determine the square footage of your building.

WHAT INFORMATION DO I NEED ?

You will need to gather specific space type information for your building, such as the gross floor area, operating hours, and number of occupants. Additionally, you will need to gather 12 full calendar months of data for the requested reporting year for all energy sources and water, from January 1 through December 31. Note that whole building data is required under this regulation, and this data is available from all utilities in the District. See the reverse side of this flyer for more information.

HOW CAN I GET HELP?

Not sure where to begin with benchmarking your building's energy use and increasing your building's energy efficiency?

- Visit the DOEE Benchmarking website at doee.dc.gov/energybenchmarking
- Contact the DOEE Benchmarking Help Center at 202-671-3300 or info.benchmark@dc.gov
- View a webinar video to help guide you through the benchmarking process: bit.ly/DCBenchmarkVideo
- Visit the DC Sustainable Energy Utility (DCSEU) website at dcseu.com:
  - Gather information on the multitude of resources and incentives offered by DC SEU to help you maximize efficiency and reduce energy usage in your buildings
  - Obtain a contact list of consulting firms offering benchmarking services in the DC metro area: dcseu.com/docs/DC-SEU-Service-Provider.pdf

DEPARTMENT OF ENERGY & ENVIRONMENT

E-mail: info.benchmark@dc.gov | Call: 202-671-3300

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Building Performance Policy Overview

- More than 50 jurisdictions in the U.S. have building performance policies covering commercial and/or multifamily buildings
  - Almost all require annual benchmarking
  - Some laws require periodic audits/assessments or retuning/ tune-ups/ retro commissioning
  - A growing number have building performance standards
- Policies enacted in 2022 or 2023 (as of 06/01/2023) are listed in the table at right
- New Jersey, Indianapolis, and Miami have their first benchmarking deadlines in 2023
- DC has its first BPS deadline in 2023

Benchmarking	BPS	Retuning
Honolulu, HI	Maryland	Madison, WI
Madison, WI	Montgomery County, MD	
Maryland	Federal BPS	
Massachusetts		

Using Portfolio Manager

ENERGY STAR® Portfolio Manager®

Accessible in a free, online secure platform:
www.energystar.gov/benchmark

A Metrics Calculator that generates key performance indicators.

- ✓ Energy consumption (source, site, weather normalized, EUI)
- ✓ Water consumption (municipally supplied potable and reclaimed, alternative)
- ✓ Waste management (disposed, recycled, donated/reused, and composted)
- ✓ 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

Translate simple information into dozens of performance indicators

Energy Metrics (Site and Source)

- Total Energy Use (kBtu)
- Energy Use Intensity (EUI) (kBtu/Sq. Ft.)
- Weather Normalized EUI (kBtu/Sq. Ft.)
- National Median EUI (kBtu/Sq. Ft.)
- % Difference from National Median EUI (%)

Comparisons

- Total Energy Use (kBtu)
- Energy Use Intensity (kBtu/Sq. Ft.)
- Adjusted Energy Use (%)
- GHG Emissions (MtCO2e)
- Available against baseline or between any two periods.

Financial

- Annual Energy Cost
- Total Energy Cost per Sq. Ft.
- Cumulative Investment in Facility Upgrades
- Cumulative Investment per Sq. Ft.

Renewable Energy

- Total On-Site Electric Generation (kWh)
- Percent of Electricity from On-Site Renewable (%)
- Total Renewable Energy Certificates Purchased and Sold
- Total Avoided Greenhouse Gas Emissions from RECs (MtCO2e)

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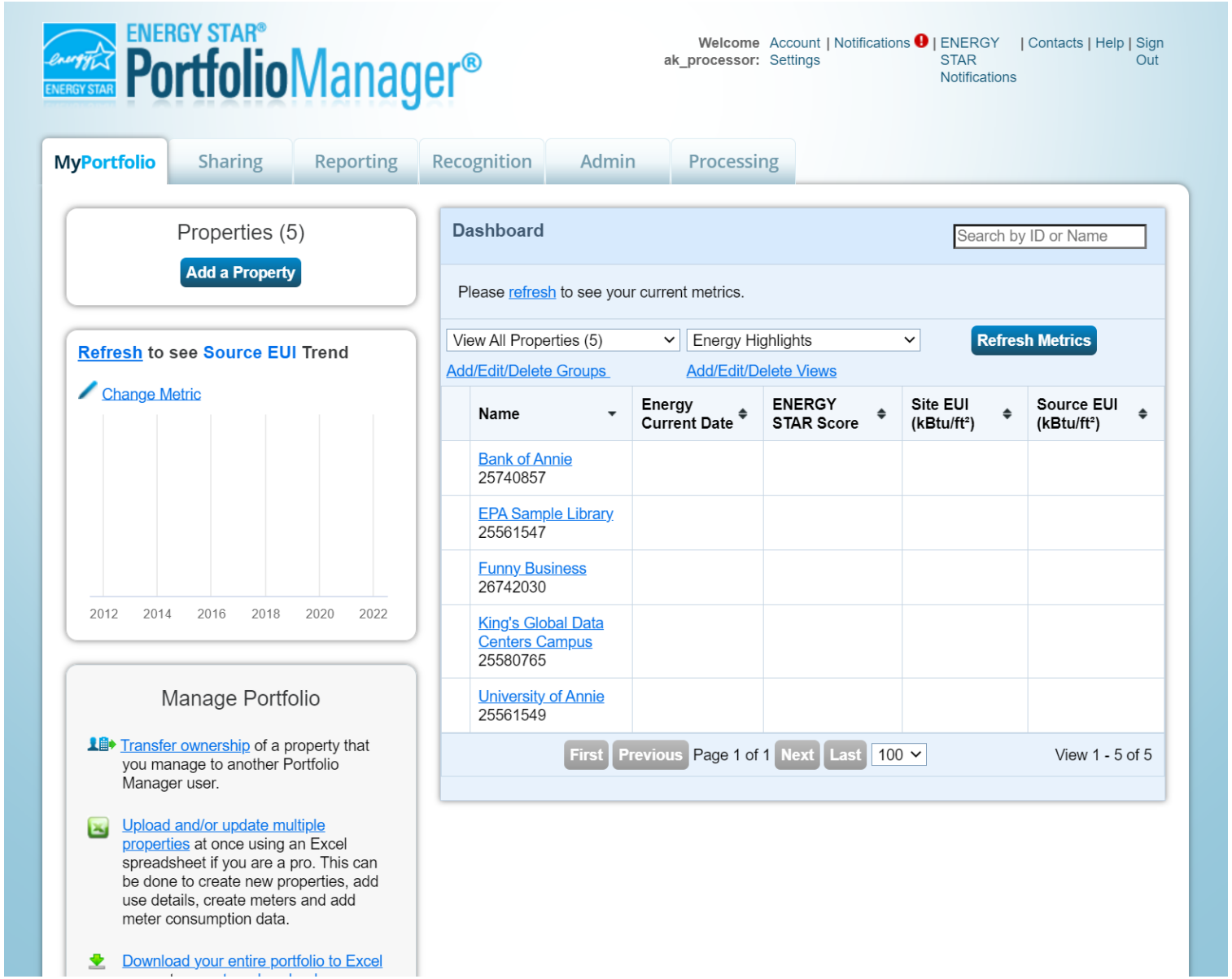
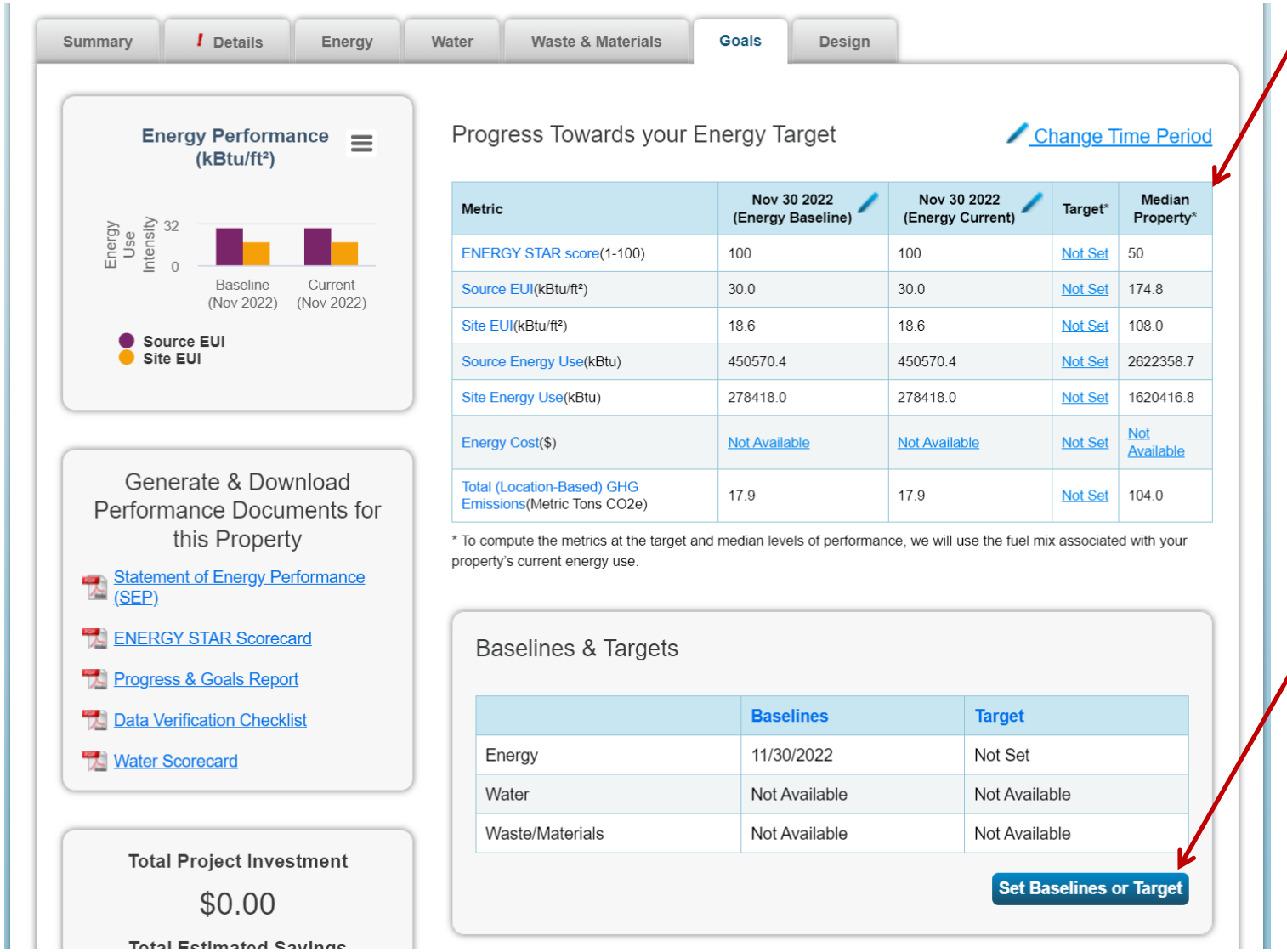
Portfolio Manager account user interface



Set goals and track progress



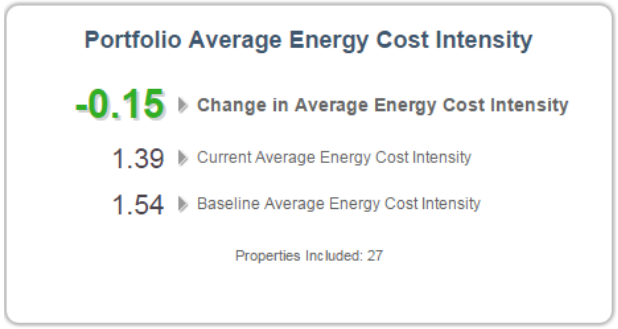
Monitor progress and document savings goals achieved

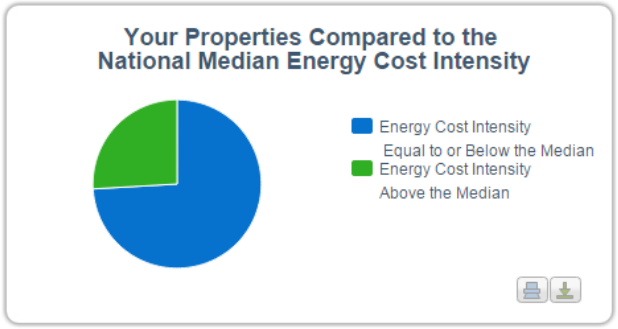
Track targets at the building or portfolio levels

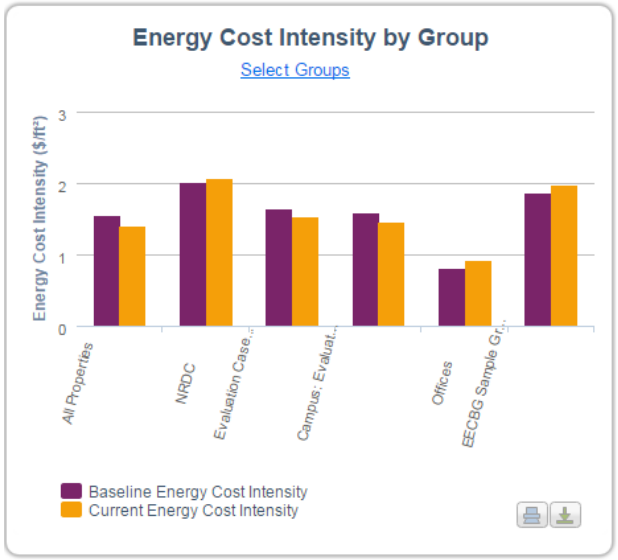
Set performance targets and baselines

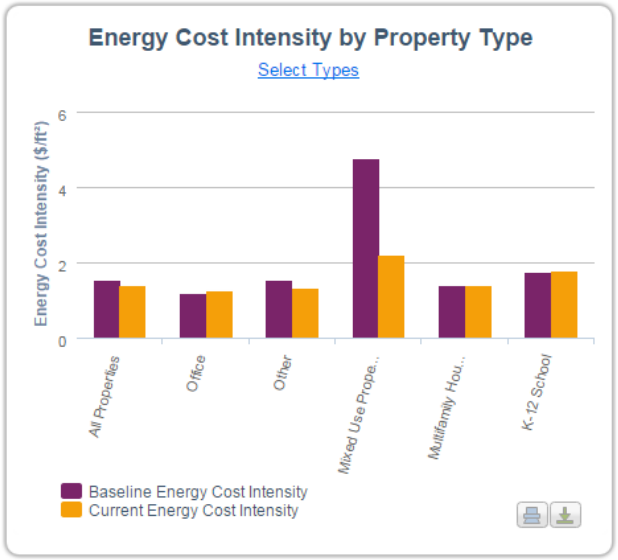
Beyond Benchmarking

- Access off-the-shelf portfolio-specific reports
  - Site and source EUI, water use intensity, emissions intensity, etc.
- Generate custom reports
- Create report templates for consistent reporting
- Create data requests to collect building data from other Portfolio Manager users
- Exportable charts & graphs









Manage your portfolio

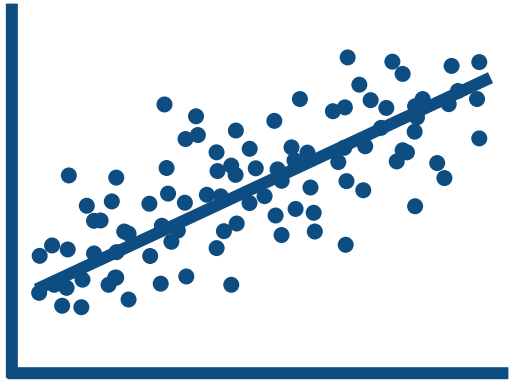
- Create customized groups of buildings to manage your portfolio
- Share full or limited building information with other Portfolio Manager users
- Allow shared users access to edit or share building data
- Transfer buildings to other accounts
- Make copies of buildings

Developing a 1–100 ENERGY STAR Score

Nationally representative survey

Data analysis

Statistical modeling



Comparison between actual energy data and the modeled estimate

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Property types with 1-100 ENERGY STAR scores

Bank Branch

Barracks*

Convenience Stores

Courthouses

Data Centers

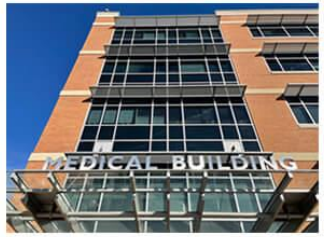
Distribution Centers

Financial Offices

Hospitals

Hotels

K-12 Schools



Medical Offices

Multifamily Housing

Office Buildings

Residence Hall/Dormitory *

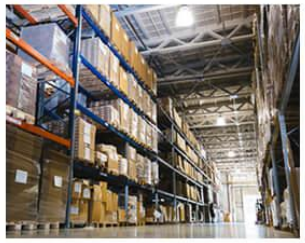
Retail Stores

Senior Living Communities

Single-Family Homes*

Supermarkets

Vehicle Dealerships


Warehouses

Wastewater Treatment Plants*

Wholesale club/ Supercenters

Worship Facilities

ENERGY STAR certification for commercial buildings

- Building must be in the United States or territories
- Achieve an ENERGY STAR score of 75 or higher
- Apply for ENERGY STAR recognition via Portfolio Manager
- Application must be verified by a licensed professional
- Awarded based on the calendar year of application
- Must re-apply annually to keep current

ENERGY STAR in Canada

- The EPA's ENERGY STAR program partnered with Natural Resources Canada (NRCan) to adapt the tool for use with Canadian properties
  - Visit https://www.nrcan.gc.ca/energy-efficiency/energy-star-canada/18953
- Portfolio Manager is available in French
- Property Types eligible to receive a - 100 ENERGY STAR Score
  - Commercial office
  - K-12 school
  - Hospital
  - Ice/Curling Rinks
  - Medical office
  - Senior Living Communities and Residential Care Facilities
  - Supermarket/grocery store
- Building certification has been available since March 2018

Get Started: Gather the information needed to benchmark

- Property information
  - Building type
  - Name, street address, ZIP/postal code
- Property type data
  - Gross floor area
  - Use details (e.g., workers, operating hours)
- Utility bills
  - From all purchased and on-site generated energy *(required for EUI and/or 1 to 100 ENERGY STAR Score only)*
  - From all purchased and on-site generated water
  - Related to waste management

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Four Ways to Get Data into Portfolio Manager

- **Manual Data Entry**
  - Type in each number for each monthly entry
- **Single Meter Spreadsheet**
  - Use a spreadsheet to update one meter a time
  - Copy/paste data from Excel to Portfolio Manager
- **Multi-meter Spreadsheets**
  - Use a spreadsheet to update multiple meters from multiple properties
- **Web Services**
  - Companies electronically enter utility data into Portfolio Manager through a process of data exchange called “web services”
  - Find utilities that provide aggregated benchmarking data at www.energystar.gov/utilitydata

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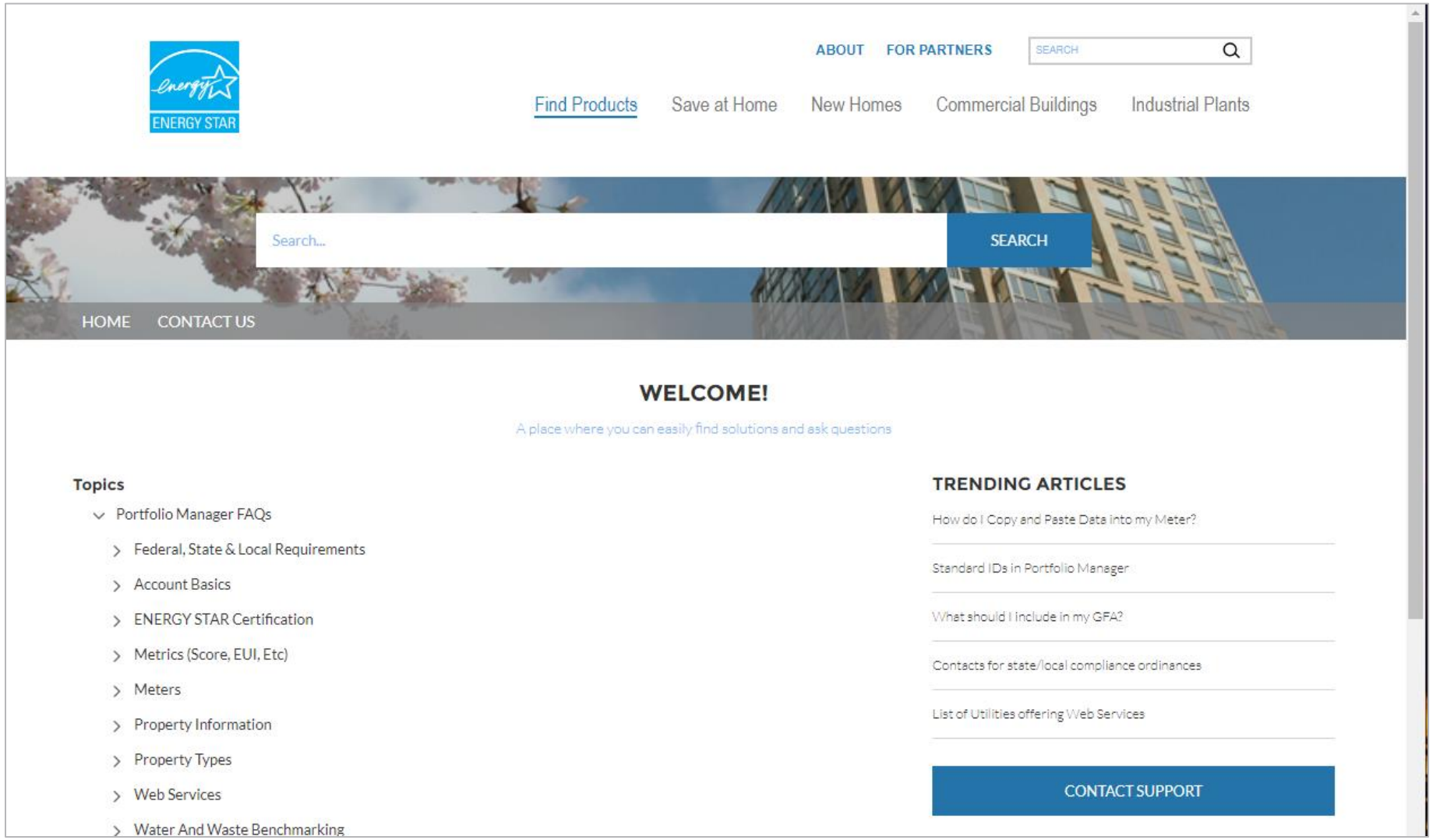
Other Resources

Learn more about Portfolio Manager

- Visit energystar.gov/buildings/training
  - Step-by-Step guides for using Portfolio Manager
  - Access to live and recorded webinars
  - Webinar slides for Portfolio Manager 101, 201, and 301
  - Short videos to help you create a property, create meters, populate meters, create reports, and more!

ENERGY STAR Help Desk

energystar.gov/buildingshelp



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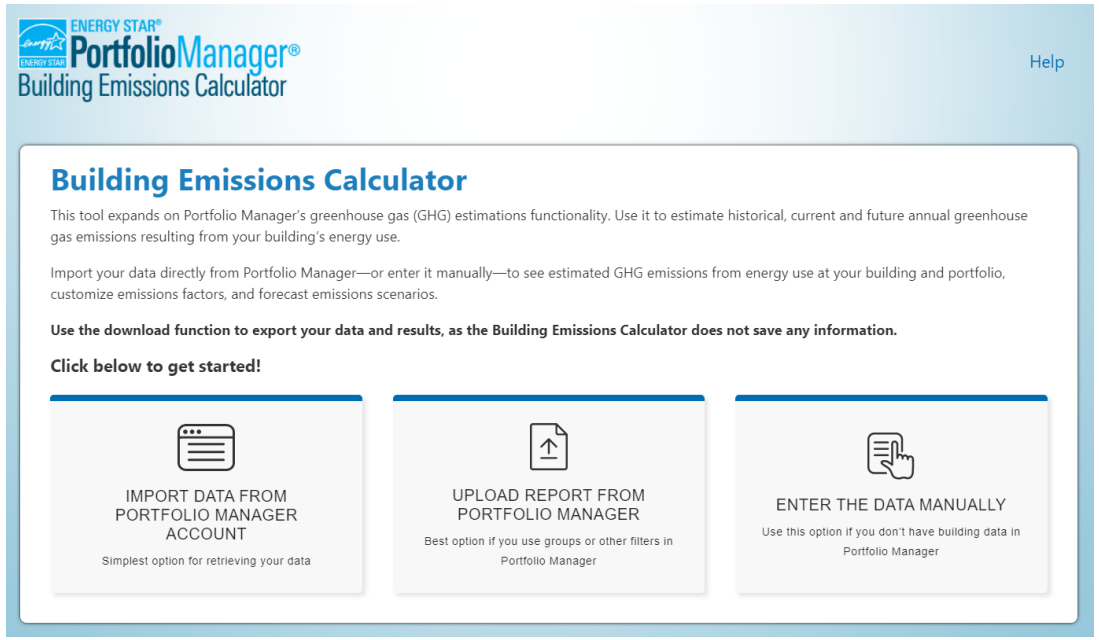
ENERGY STAR® Portfolio Manager® Building Emissions Calculator



Past, Current, and Future GHG Calculations

- Estimate your building's GHG emissions,
- Support GHG emissions inventories,
- Evaluate emissions under local building performance standards
- Forecast the impact of changes in building efficiency and energy procurement.

https://portfoliomanager.energystar.gov/buildingEmissionsCalculator/

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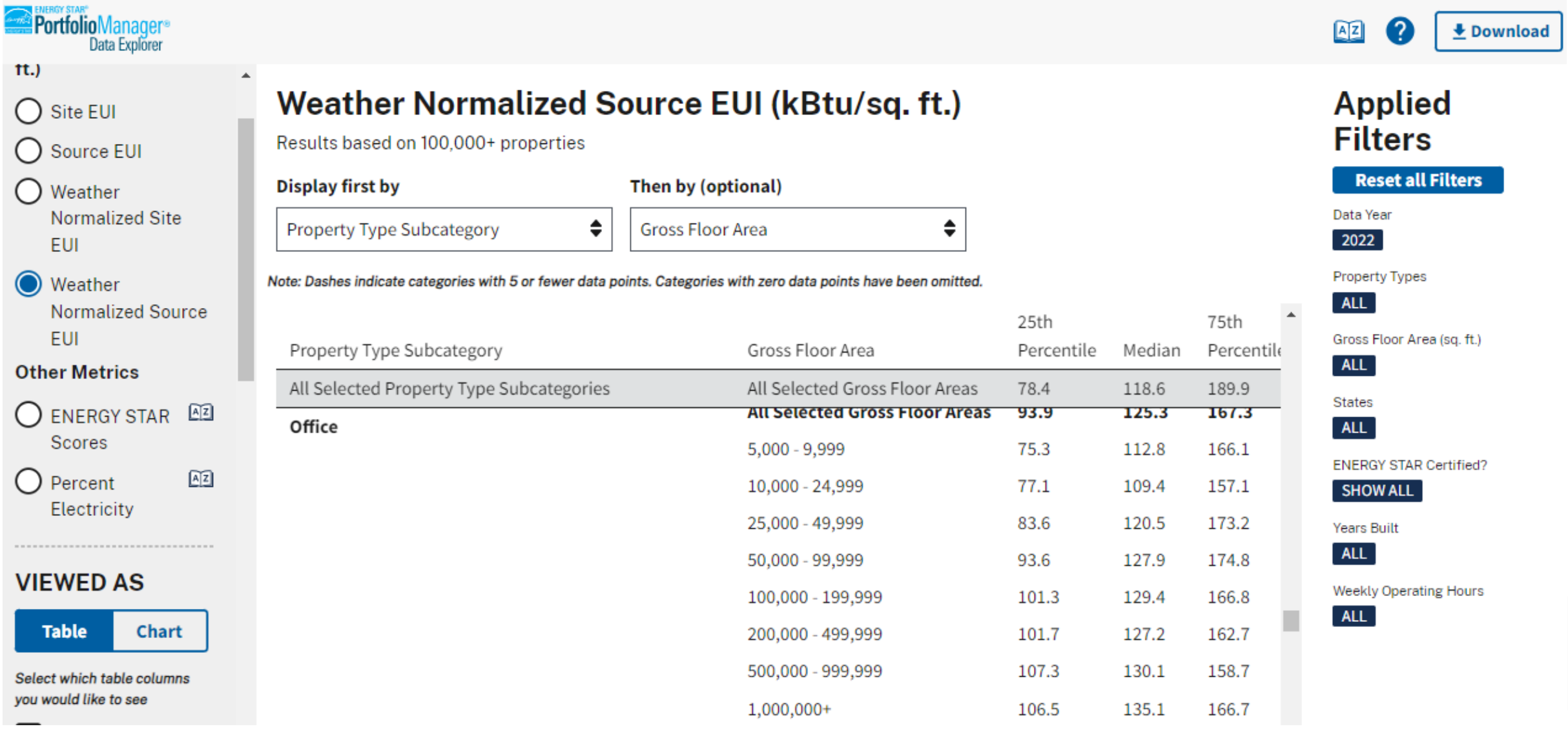
Portfolio Manager Data Explorer

- Dive into energy use data from over 150,000 U.S. commercial and multifamily properties.
- Explore energy use intensities, ENERGY STAR scores, and percent electricity across a wide range of property types.

Portfolio Manager Data Explorer



ENERGY STAR® Portfolio Manager®

Free. Online. Secure.

www.energystar.gov/buildings/benchmark

Questions?

Slides will be sent to all webinar registrants after today's session

If you have any questions on Portfolio Manager
or the ENERGY STAR program, contact us at:
www.energystar.gov/BuildingsHelp