

SUSTAINPVD

Mayor Jorge O. Elorza

Leah Bamberger, Director of Sustainability
 Dilip Shah, Building Energy Advisor

RePOWERPVD

Creating Buildings of the Future



20 %
 reduction by
 2025

Race to Zero

STATE OF RHODE ISLAND
OFFICE OF
ENERGY RESOURCES

nationalgrid

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2.3 Million SF of Real Estate in Providence has Joined



Regency Plaza, 10 Memorial Boulevard, Downtown Marriott, Providence Housing Authority

RePowerPVD.com



Cornish Associates – Alice Building, Burgess/O'Gorman Building, Kinsley Building, and Smith Building

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City of Providence – Mt. Pleasant HS, Nathan Bishop Middle School, Joseph A. Doorley, Jr. Building, and Mary E. Fogarty Elementary School

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Two have entered the Race to Zero

Jonathan R. Knowles, Professor at RISD / ONE Neighborhood Builders



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Learn more at RePowerPVD.com

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Portfolio Energy Benchmarking and Prioritization – Step by Step

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RePowerPVD Participant Webinar

November 5, 2018

Reilly Loveland, Project Manager
New Buildings Institute

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What is New Buildings Institute? (NBI)

NBI makes buildings more efficient. We shape the future with innovation, research, design guidance, and advanced building energy policy.

Technical Expertise:

- Zero energy leadership and market development
- Best practices in new and existing buildings
- Continuous code and policy innovation

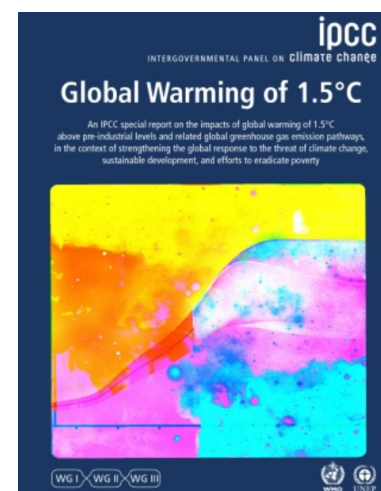


Intergovernmental Panel on Climate Change

“Limiting global warming to 1.5°C would require rapid, far-reaching and unprecedented changes in all aspects of society” – IPCC

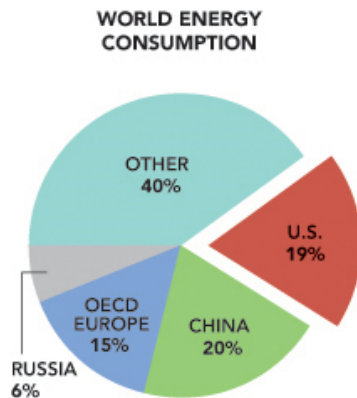
Global net human-caused emissions of carbon dioxide (CO₂) would need to fall by about 45% from 2010 levels by 2030, reaching ‘net zero’ around 2050.

Policies must change in the next 2-3 years.



Commercial Building Energy Use

3

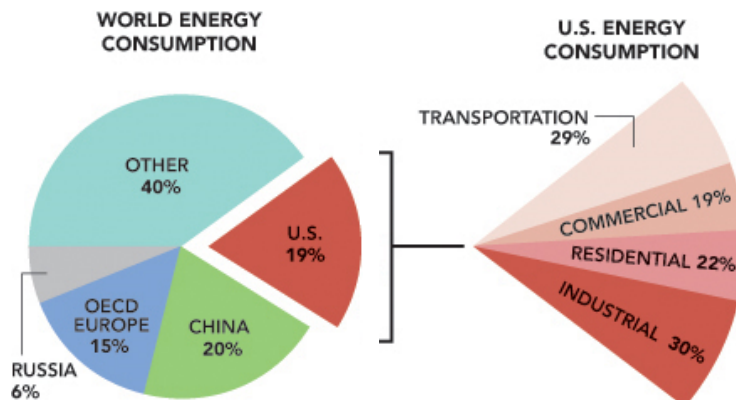


Graphics source: www.trendingenergy.com (Data: US Energy Information Administration)

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Commercial Building Energy Use



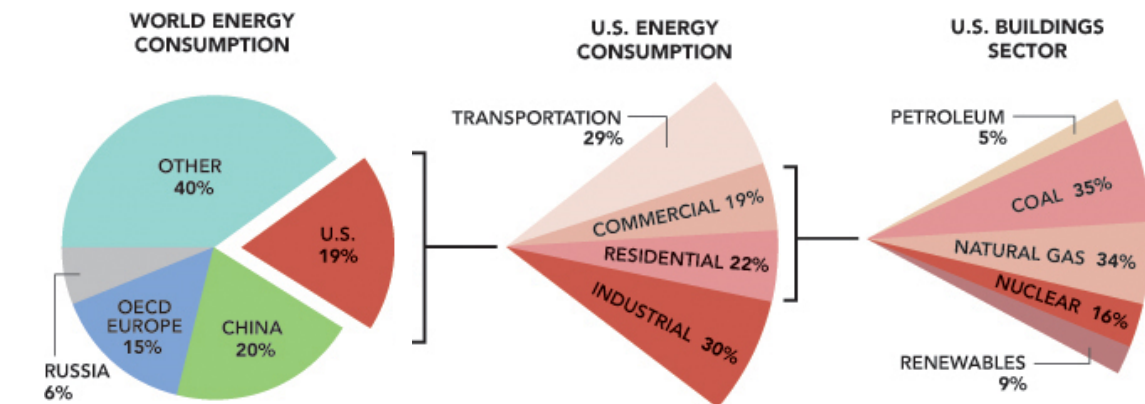
Graphics source : www.trendingenergy.com (Data: US Energy Information Administration)

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Commercial Building Energy Use

3



Graphics source : www.trendingenergy.com (Data: US Energy Information Administration)

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Savings Opportunity

**Existing Buildings
Contribute to 70%
of Emissions in
Providence**



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Leading by Example



Leadership in high performing public buildings can advance carbon reduction in private buildings by illustrating feasibility and inspiring healthy competition, further actualizing climate action goals.

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Benchmarking

Background

Why Does Benchmarking Matter?



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Benchmarking Definition

The process of accounting for and comparing a metered building's current energy performance with its energy baseline, or comparing a metered building's energy performance with the energy performance of similar types of buildings.

Benchmarking can be used to compare performance over time, within and between peer groups, or to document top performers.



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Why Track Energy Data?

Measurement is necessary to plan and track operational & capital improvements



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Industry
Standard
>250,000
commercial buildings

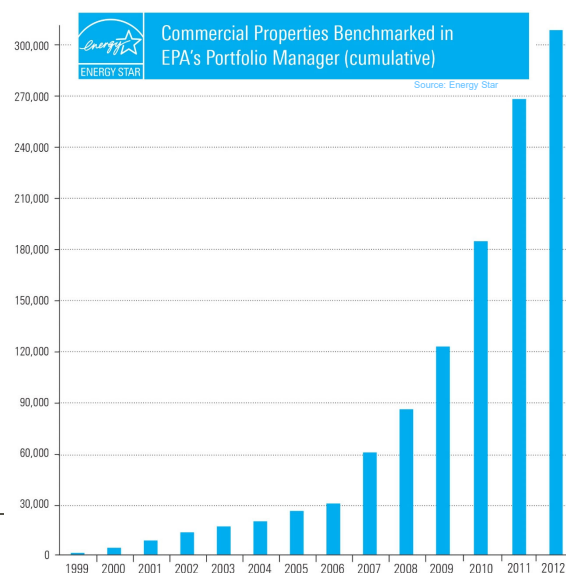
>40,000
individual accounts

27 billion sq. ft.
of commercial &
institutional office
space

Nearly **40%**
of commercial market

Source: NBI

Growth in Benchmarking



litute

Disclosure & Benchmarking

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



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Building Rating
www.buildingrating.org
IMT
INSTITUTE
FOR MARKET
TRANSFORMATION

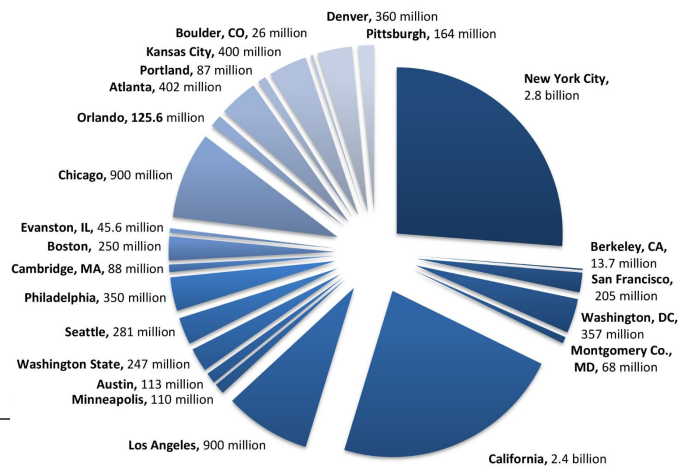
© Copyright 2018 Institute for Market Transformation. Updated 9/2018

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Disclosure & Benchmarking in PVD

Building Area (in Square Feet) Covered Annually

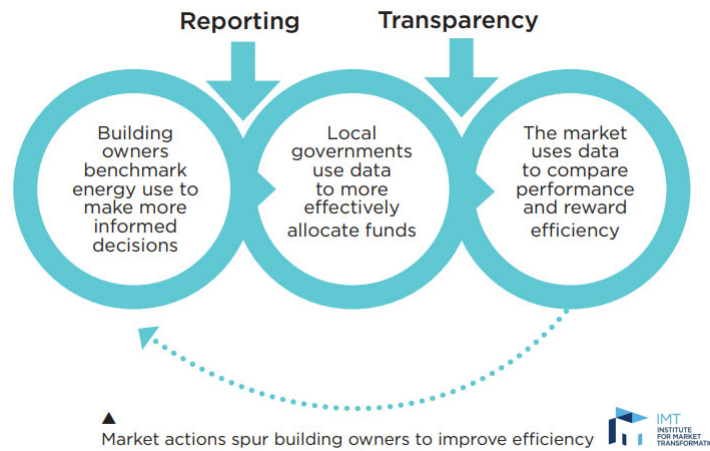
City of
Providence is
leading by
example with all
130 municipal
buildings
benchmarked!



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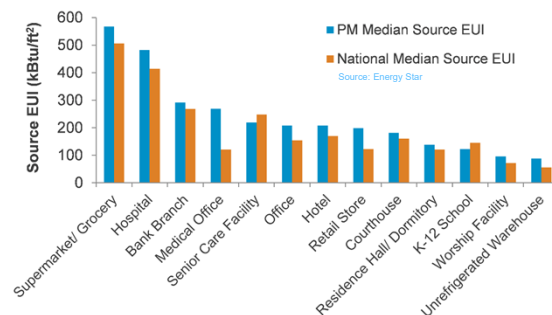
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Who Uses Building Data?



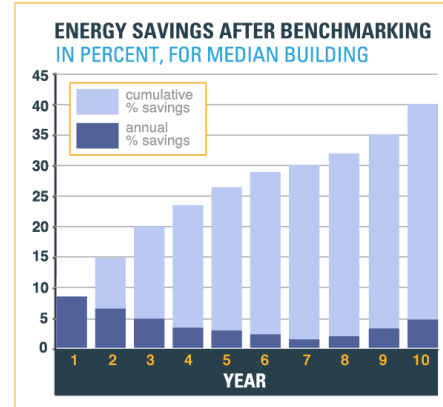
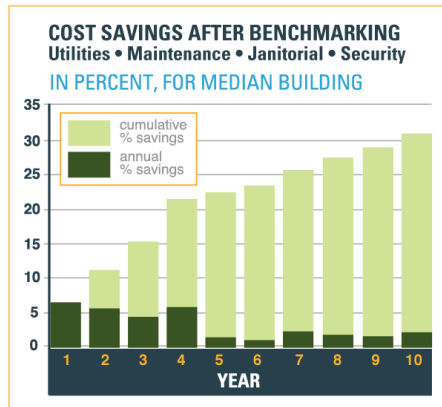
How Do We Organize It?

Benchmarking can be done on the individual building or portfolio level



What Do We Do With It?

Benchmarking highlights a path for buildings and portfolios to save energy and money.



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Source: FM Benchmarking: <http://www.fmbenchmarking.com/benefits/how-much-can-i-save-by-benchmarking/>

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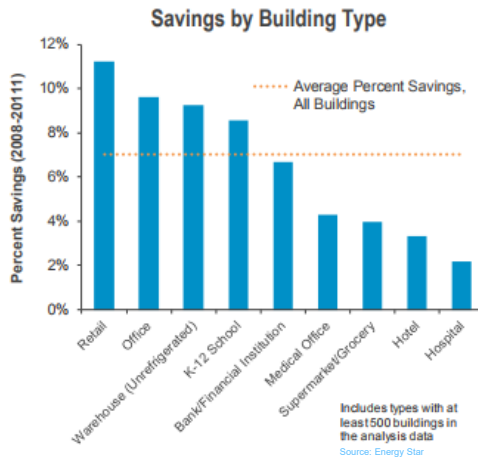
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Benefits of Benchmarking

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Benefits: Energy and Cost Savings



What is the financial value of benchmarking?

The financial value of benchmarking can be expressed in terms that are meaningful to each building sector. A savings of 2.4% for three consecutive years is equivalent to the following:



For a 500,000 square foot office building:
Cumulative energy cost savings of \$120,000
Increase in asset value of over \$1 million



For a medium box retailer with 500 stores:
Cumulative energy cost savings of \$2.5 million
Increase in sales of 0.89%



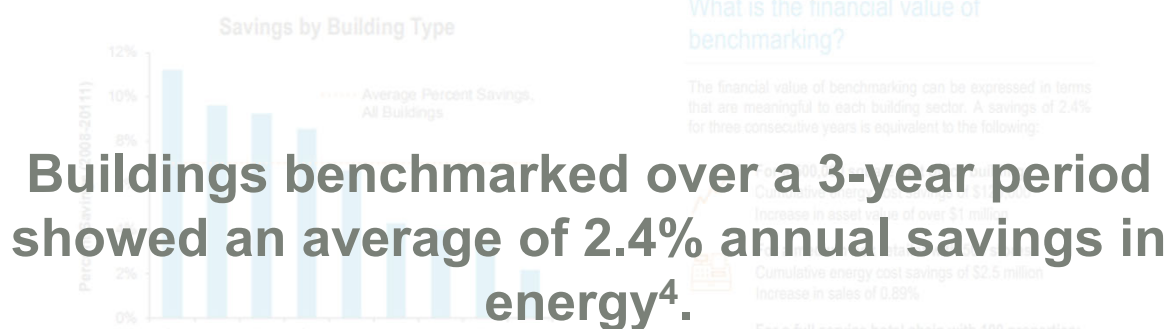
For a full service hotel chain with 100 properties:
Cumulative energy cost savings of \$4.1 million
Increase in revenue per available room of \$1.41



For an 800,000 square foot school district:
Cumulative energy cost savings of \$140,000
Salary of 1.2 full time teachers each year

Source: Energy Star

Benefits: Energy and Cost Savings



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Salary of 1.2 full time teachers each year

Source: Energy Star

⁴ IMT: http://www.imt.org/uploads/resources/files/IMTBenefits/Benchmarking_Online_June2015.pdf

Benefits: Informed Decision Making for Tenants

- Tenants directly and indirectly control a significant portion of energy use
- Tenants can better understand the impacts of their actions on building energy use & operating costs
- Tenant education and behavioral change strategies are integral to effective energy management programs for the whole building.

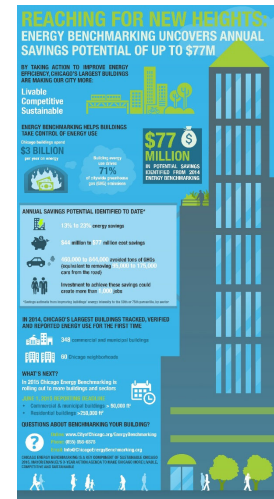
Benefits: Informed Decision Making for Owners

- Owners can understand how their buildings' energy performance compares to competitors: **Valuation**
- For owners with high performing buildings, benchmarking provides evidence of their building's additional value⁵:
 - ~10% higher occupancy
 - ~10% higher rents
 - ~25% higher sale prices
- Benchmarking enables fault detection: Catch anomalies early!
 - Manage and predict maintenance costs
 - Avoid maintenance emergencies (\$\$\$)
 - Defer equipment replacement

⁵ IMT: http://www.imt.org/uploads/resources/files/IMTBenefitsofBenchmarking_Online_June2015.pdf

Benefits: Informed Decision Making for Portfolio Holders

- Portfolio holders can use energy use metrics to rank their building against others in their portfolio, allowing prioritization of energy efficiency investments
- Portfolio holders can use metrics as the basis of an energy management plan to drive continuous performance improvement
- Policy makers can track markets that need the most assistance to reduce overall consumption across all markets



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Understanding Energy Use in Buildings

What Do We Measure?

“Garbage In, Garbage Out”: Benchmarking must be based on consistent data sources!

| Building Characteristics & Energy Usage | | | | |
|--|--|-----------------------------|-----------------------------|----------------------------------|
| Location | Date of Construction or Major Renovation | Building Size (Square Feet) | Principal Building Activity | Occupancy: FTEs & Hours per year |
| Annual Energy Usage (all sources combined) | | | | |

Energy Use: EUI

$$EUI = \frac{\text{Total Annual Energy Use (kBtu/yr)}}{\text{Building Size (ft}^2\text{)}}$$

Energy Use: EUI

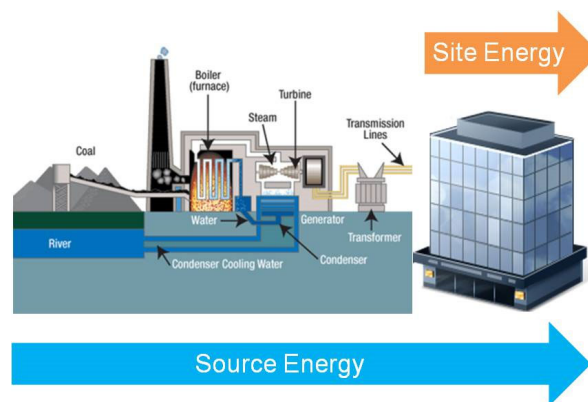
Site EUI: Total energy used on-site

Source EUI: Total upstream energy required

Energy Use: EUI

Site EUI: Total energy used on-site

Source EUI: Total upstream energy required



Example: US Median Office Building EUI

148.1 kBtu/ft²/yr **Source** 67.3 kBtu/ft²/yr **Site**

Energy Use: EUI



Hybrid

51 MPG

30% Improvement =

73 MPG –OR–

88 Gallons per Year

Energy Use: EUI



Hybrid

51 MPG

30% Improvement =

73 MPG –OR–

88 Gallons per Year



Old Pick-up

12 MPG

30% Improvement =

17 MPG –OR–

375 Gallons per Year

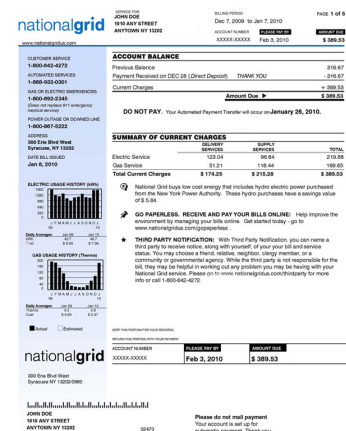
Benchmarking

Using Energy Star Portfolio Manager

Making Your Portfolio “Benchmarkable”

Gathering Your Data

- Up to date portfolio building inventory
 - Building Data: # buildings, size, type, etc.
- Data sources: utility bills vs. onsite metering data
- Energy Data & Meters:
 - Match meters to buildings
 - Understanding multiple meters on site or campuses
 - Multiple meters per building



Energy Star Portfolio Manager

Types of Buildings Possible in Portfolio Manager:


| | | | |
|-------------------|------------------|----------------------|------------------|
| Bank branch | Medical office | Office | Wholesale |
| Barracks | Multifamily | Refrigerated | club/supercenter |
| Courthouse | housing | warehouse | Worship facility |
| Data center | Non-refrigerated | Residence hall/ | |
| Distribution | warehouse | dormitory | |
| center | | Retail store | |
| Financial office | | Senior care | |
| Hospital (general | | community | |
| medical & | | Supermarket/grocery | |
| surgical) | | store | |
| Hotel | | Wastewater treatment | |
| K-12 school | | plant | |

What is an Energy Star Score?

0-100 score assessing commercial building performance by percentile

- Accounts for location, occupancy, activity
- Requires Energy Star Portfolio Manager tool
- 100 is best, 50 is median

| ✓ The Score Does | ✗ The Score Does Not |
|---|--|
| ✓ Evaluate actual metered energy use | ✗ Sum the energy use of each piece of equipment |
| ✓ Normalize for business activity (hours, workers, climate) | ✗ Credit specific technologies |
| ✓ Compare buildings to the national population | ✗ Compare buildings with others in Portfolio Manager |
| ✓ Indicate the level of energy performance | ✗ Explain why a building performs well or poorly |



The simple choice for energy efficiency.

ENERGY EFFICIENT
products

ENERGY SAVINGS
at home

ENERGY EFFICIENT
new homes

ENERGY STRATEGIES FOR
buildings & plants

Home » Buildings & Plants » Owners and managers » Existing buildings » Use Portfolio Manager

Buildings & Plants

about us | press room | help desk | **portfolio manager login**

Owners and managers | Service providers | Program administrators | Tenants | Tools and Resources

Existing buildings

Learn the benefits

Get started

Use Portfolio Manager

How Portfolio Manager helps you save

The benchmarking starter kit

Identify your property type


Enter data into Portfolio Manager

The data quality checker

How Portfolio Manager calculates metrics

Interpret your results

Verify and document your savings



ENERGY STAR® PortfolioManager®

The most-used energy measurement and tracking tool for commercial buildings.

Use Portfolio Manager

You've heard it before: you can't manage what you don't measure. That's why EPA created ENERGY STAR Portfolio Manager®, an online tool you can use to measure and track energy and water consumption, as well as greenhouse gas emissions. Use it to benchmark the performance of one building or a whole portfolio of buildings, all in a secure online environment.

Not sure if Portfolio Manager is for you? It is!

You can use Portfolio Manager to manage the energy and water use of any building. Seriously. Any building. K-12 school? Check. Office building? Check. Stadium? Check. We could keep going. All you need are your energy bills and some basic information about your building to get started.

Login to your account

Username

[forgot username?](#)

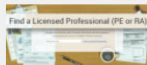
Password

[forgot password?](#)

[New user? Register](#)

New! Licensed Professional Finder

Enter your zip code to find Licensed Professionals that have verified properties near you for ENERGY STAR certification.



Create an Account

Accessing Your Account

Username:

Password:

Create a password that is at least 6 characters long and includes at least three of the following: lowercase letters, uppercase letters, numbers and/or special characters (such as *, #, %, etc.).

Confirm Password:

About Yourself

First Name:

Last Name:

Job Title:

Email:

Confirm Email:

Note: We never share your email address with third parties.

Phone:

Country:

Language:

Reporting Units: ☒ Conventional EPA Units (e.g., kBtu/ft²) ☐ Metric Units (e.g., GJ/m²)

Street Address:

City/Municipality:

State/Province:

Postal Code:

About Your Organization

Organization Name:

Primary Business or Service of Your Organization:

Is your organization an ENERGY STAR Partner? ☐ Yes ☒ No


Searchability in Portfolio Manager

Can other people search for you and send you a connection request? ☒ Yes ☐ No

Confirm Your Identity

Please confirm that you are a human

☐ I'm not a robot



[Privacy](#) [Terms](#)

Welcome reillynewbuildings: [Account Settings](#) | [Notifications](#) | [Contacts](#) | [Help](#) | [Sign Out](#)

MyPortfolio | [Sharing](#) | [Reporting](#) | [Recognition](#)

Properties (1)

[Add a Property](#)

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 spreadsheet if you are a pro. This can be done to create new properties, add use details, create meters and add meter consumption data.
- [Download your entire portfolio to Excel](#) or create a [custom download](#).
- [Set a portfolio baseline and/or target](#) to help measure progress.
- [Add sample properties](#) to your account. Up to five sample properties with pre-populated data will be added to your portfolio for testing purposes.

Welcome to Portfolio Views!

Now you can see an overview of your portfolio's performance right from this page by using a [View](#). We have set up one view to get you started. Energy highlights. If you would like to see these metrics, please [Refresh Metrics](#) or you can [set up your own customized views](#). Views need to be refreshed to see your most recent metrics.

[Clear Message](#)

Dashboard

Please [refresh](#) to see your current metrics.

[View All Properties \(1\)](#) | [Energy Highlights](#) | [Refresh Metrics](#)

[Add/Edit/Delete Groups](#) | [Add/Edit/Delete Views](#)

| Name | Energy Current Date | ENERGY STAR Score | Site EUI (kBtu/ft ²) | Source EUI (kBtu/ft ²) |
|----------------------|---------------------|-------------------|----------------------------------|------------------------------------|
| Loveland High School | 8/23/14 | | | |

[First](#) [Previous](#) Page 1 of 1 [Next](#) [Last](#) 100 [View 1 - 1 of 1](#)

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MyPortfolio | [Sharing](#) | [Reporting](#) | [Recognition](#)

Reilly:

Your account has been created. Here is how to get started:

- [Set up your first building](#). If you have any questions or run into trouble, please check out our [support](#) pages or [contact our help desk](#) for assistance.
- [Learn about using Portfolio Manager](#) and about [ENERGY STAR recognition](#).

Properties (0)

[Add a Property](#)

Manage Portfolio

- [Upload and/or update multiple properties](#) at once using an Excel spreadsheet if you are a pro. This can be done to create new properties, add use details, create meters and add meter consumption data.
- [Download your entire portfolio to Excel](#) or create a [custom download](#).
- [Set a portfolio baseline and/or target](#) to help measure progress.
- [Add sample properties](#) to your account. Up to five sample properties with pre-populated data will be added to your portfolio for testing purposes.

You currently do not have any properties within your Portfolio Manager account. You can set up your first property or add up to five sample properties with pre-populated data to your portfolio. If this is your first time using Portfolio Manager, you may want to add sample properties to your portfolio in order to test out available features and see the look of a complete property.

[Set up your first property](#)

[Add up to five sample properties](#)

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Set up a Property: Let's Get Started!

Properties come in all shapes and sizes, from a leased space in a large office building, to a K-12 school with a pool, to a large medical complex with lots of buildings. Since there are so many choices, Portfolio Manager can walk you through getting your property up and running. When you're done, you'll be ready to start monitoring your energy usage and pursue recognition!



Your Property Type

We'll get into the details later. For now, overall, what main purpose does your property serve?

Library

[Learn more about Property Types.](#)



Your Property's Buildings

How many physical buildings do you consider part of your property?

- ☐ None: My property is part of a building
- ☒ One: My property is a single building
- ☐ More than One: My property includes multiple buildings ([Campus Guidance](#))

How many?



Your Property's Construction Status

Is your property already built or are you entering this property as a construction project that has not yet been completed?

- ☒ Existing: My property is built, occupied and/or being used. I will be using Portfolio Manager to track energy/water consumption and, perhaps, pursue recognition.
- ☐ Design Project: My property is in the conceptual design phase (pre-construction); I will be using Portfolio Manager to evaluate the energy efficiency of the design project.
- ☐ Test Property: This is not a real property. I am entering it to test features, or for other purposes such as training.

Tip

To set up a property, you'll need information such as **gross floor area** and **operating hours**.

Tip

Not sure what kind of property you are? Because we focus on whole building benchmarking, you want to select the property type that best reflects the activity in the majority of your building. Don't worry if you have other tenants with different business types, just select the main activity.

Test Properties

You may want to enter a property into Portfolio Manager that isn't actually a "real" property, either to familiarize yourself with features or maybe to train other people. By telling us this is a "Test" property, we can give the option of including this property in your portfolio-level metrics, charts and table or not, depending what your needs are. This can be configured on your [Account Settings](#).

[Get Started!](#) [Cancel](#)

Set Up a Property: Basic Property Information

Tell us a little bit more about your property, including a name that you will use to look up your property and its address.

About Your Property

Name:

Country:

Street Address:

City/Municipality:

State/Province:

Postal Code:

Year Built:

Gross Floor Area: ☐ Temporary Value

Gross Floor Area (GFA) is the total property floor area, measured from the principal exterior surfaces of the building(s). Do not include parking. [Details on what to include.](#)

Irrigated Area: ☐ Temporary Value

Occupancy: %

Do any of these apply?

- ☐ My property's energy consumption includes [parking areas](#)

You will need to include parking if it is not separately metered – if the parking is separately metered we recommend you enter this as a separate property.

[Back](#)

[Continue](#) [Cancel](#)

Set up a Property: How is it used?

Based on what you've told us so far, Portfolio Manager has set up your property. Fill in the tables below to provide more detailed information on how your property is used.

Basic Information

Name: Loveland Library **Country:** US
Property Type: Library **Address:** 555 Main St
 Providence, RI 02906 [Map It](#)
Year Built: 1972
Property consists of: 1 building

[Edit](#)

Add Another Type of Use

Building Use [Edit Name](#)

Library refers to buildings used to store and manage collections of literary and artistic materials such as books, periodicals, newspapers, films, etc. that can be used for reference or lending.

Gross Floor Area should include all space within the building(s), including circulation rooms, storage areas, reading/study rooms, administrative space, kitchens used by staff, lobbies, conference rooms and auditoriums, fitness areas for staff, storage areas, stairways, and elevator shafts.

| Property Use Detail | Value | Current As Of | Temporary Value |
|------------------------|-----------------|---------------|--------------------------|
| Gross Floor Area | 130,000 Sq. Ft. | 10/12/2017 | <input type="checkbox"/> |
| Weekly Operating Hours | | 1/1/1972 | <input type="checkbox"/> |
| Number of Workstations | | 1/1/1972 | <input type="checkbox"/> |
| Number of Computers | | 1/1/1972 | <input type="checkbox"/> |

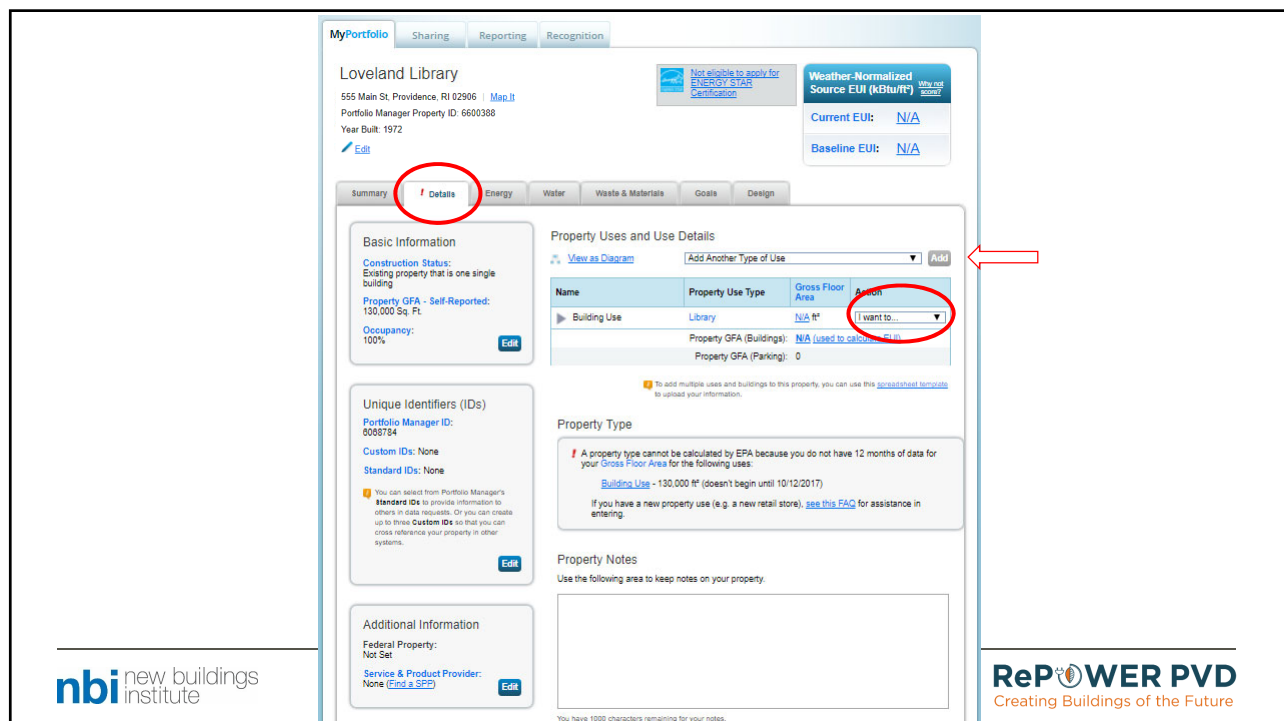
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[Back](#)
[Add Property](#)

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Excel spreadsheet titled "Add_Properties_en (3) - Excel" showing a table for property data. The table has columns for Property Name, Street Address, Street Address 2, City/Municipality, State/Province, Other State/Province, Postal Code, Country, Year Built/Year Planned for Construction Completion, Primary Function, Construction Status, Gross Floor Area, and GFA Units. A red box highlights the "Instructions" tab in the bottom left corner. A yellow note in cell A2 states: "Property Name must be unique names. 80 character max."

Batch uploading can be tricky! Pay attention to details and read instructions.



MyPortfolio | Sharing | Reporting | Recognition

Congratulations! You have successfully created your property.
Next, you can:
• [Add energy use information](#), so that you can see your energy performance metrics.

Loveland Library
555 Main St, Boston, MA 02110 | [Map It](#)
Portfolio Manager Property ID: 0008784
Year Built: 1972
[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

Property Profile (Future enhancements)
This section will be deleted in 2019, except for the property photos which will remain. [More information](#).
[Create Profile](#)

Source EUI Trend (kBtu/ft²)

Metrics Summary [Change Metrics](#) [Change Time Periods](#)

| Metric | Not Available (Energy Baseline) | Not Available (Energy Current) | Change |
|--|---------------------------------|--------------------------------|--------|
| ENERGY STAR Score (1-100) | Not Available | Not Available | N/A |
| Source EUI (kBtu/ft²) | Not Available | Not Available | N/A |
| Site EUI (kBtu/ft²) | Not Available | Not Available | N/A |
| Energy Cost (\$) | Not Available | Not Available | N/A |
| Total GHG Emissions Intensity (kgCO₂e/ft²) | Not Available | Not Available | N/A |
| Water Use (All Water Sources) (kgal) | Not Available | Not Available | N/A |
| Total Waste (Disposed and Diverted) (Tons) | Not Available | Not Available | N/A |

Check for Possible Data Errors
Run a check for any 12-month time period to see if there are any possible errors found with your data.
[Check for Possible Errors](#)

Total GHG Emissions Trend (Metric Tons CO₂e)

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Loveland Library
555 Main St, Providence, RI 02906 | [Map It](#)
Portfolio Manager Property ID: 6600388
Year Built: 1972
[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 Energy Meters Total
In order to receive metrics for your property, you must provide meters. You have not entered any meters yet.
[Add A Meter](#)
Current Energy Date: Not Available
[Enter Your Bills](#)

Meters - Used to Compute Metrics (0)
[View as a Diagram](#)
[Add A Meter](#)

There are currently no energy meters entered for this property/building. In order to track energy usage and receive energy metrics, you must provide an energy meter. [Enter information about your energy meters](#) to begin tracking energy usage. After entering the meter, you will need to [choose to include it in your metrics](#).
For a step-by-step guide to entering meter data, see [How to get Utility Data into Portfolio Manager](#).

Four Ways to Enter Bill Data

1. Manually
2. Use our [simple spreadsheet](#) (one meter) to upload or Copy/Paste
3. Use our [complex spreadsheet](#) (multiple meters + multiple properties)
4. [Find an organization](#) to electronically enter your data into Portfolio Manager


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For a step-by-step guide to entering meter data, see [How to get Utility Data into Portfolio Manager](#).

Get Started Setting Up Meters for Loveland Library

There are four ways to enter meter data. First, you can enter manually, starting below. Second, you can set up your meters below, then upload a specially formatted spreadsheet with just your bill data. Third, for advanced users, you can use our upload tool that allows you to set up all of your meters and enter bill data. And finally, you can hire an organization that exchanges data to update your energy data automatically.



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?
 - ☒ generated onsite with my own solar panels
How Many Meters?
 - ☐ generated onsite with my own wind turbines
- ☒ Natural Gas
How Many Meters?
- ☐ Propane
- ☐ Fuel Oil (No. 2)
- ☐ Diesel
- ☐ District Steam
- ☐ 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:

Tracking Energy

To track your energy, create an energy meter for each source of energy from a utility, a neighboring building, or an onsite solar or wind panel. If you purchase a raw fuel (e.g. gas) and produce your own fuel (e.g., electricity or chilled water), you only need a meter for the fuel you purchased (e.g. gas), and not for the fuel you produce.

Two Meters Needed for Onsite Solar/Wind

If you've got onsite Solar (or Wind), you still need to enter an Electric Grid Meter. [Learn More.](#)

Automate Your Meter Entries

There are many organizations that will electronically enter your utility data into Portfolio Manager. Many utilities provide this service for free. Service providers integrate this service into their own software and value-added offerings. [Learn more.](#)

About Your Meters for Loveland Library

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.

3 Energy Meters for Loveland Library (click table to edit)

| <input type="checkbox"/> | Meter Name | Type | Other Type | Units | Date Meter became Active | In Use? | Date Meter became Inactive | Enter as Delivery? |
|--------------------------|---|---|------------|---|---|-------------------------------------|----------------------------|--------------------------|
| <input type="checkbox"/> | Natural Gas | Natural Gas | | therms | 01/01/2016 | <input checked="" type="checkbox"/> | | <input type="checkbox"/> |
| <input type="checkbox"/> | Electric Grid Meter | Electric - Grid | | kWh (thousand Watt-hours) | 01/01/2016 | <input checked="" type="checkbox"/> | | <input type="checkbox"/> |
| <input type="checkbox"/> | <input type="text" value="Electric Solar Mtr"/> | <input type="text" value="Electric - Solar"/> | | <input type="text" value="kWh (thousand)"/> | <input type="text" value="01/01/2016"/> | <input checked="" type="checkbox"/> | <input type="text"/> | <input type="checkbox"/> |

[Delete Selected Entries](#)
[Add Another Entry](#)

Back

Create Meters [Cancel](#)

Your Meter Entries for Loveland Library

Now we need actual energy consumption information in order to start providing you with your metrics and, possibly, your score!

3 Energy Meter(s) for Loveland Library

Natural Gas

| Start Date | End Date | Usage therms | Total Cost (\$) | Estimation |
|---------------------------------------|----------|-----------------|-----------------|------------|
| Click to add an entry | | | | |

[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 chosen

[Electric Grid Meter](#)
[Electric Solar Meter](#)

[Continue](#) [Cancel](#)

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Your Property is: [Edit](#)

- ☒ A Single Building
- ☐ Part of a Building
- ☐ A Campus of Multiple Buildings

You Are Tracking: [Edit](#)

- ☒ Total energy consumption for your property
- ☐ Partial energy consumption for your property

Utility & Weather

Electric Distribution Utility (EDU):
The Narragansett Electric Co

Regional Power Grid:
NEVE (New England)

Weather Station:
PROVIDENCE/GREEN ST (725070)

Your electric distribution utility (EDU) and weather station selections affect the calculation of your energy metrics.

[Edit](#)

Loveland Library

555 Main St, Providence, RI 02906 [Map It](#)

Portfolio Manager Property ID: 6068784

Year Built: 1972

[Edit](#)

Not eligible to apply for ENERGY STAR Certification

Weather-Normalized Source EUI (kBtu/ft²) With net score?

Current EUI: [N/A](#)

Baseline EUI: [N/A](#)

Summary **Energy** Water Waste & Materials Goals Design

Meter Summary

3 Energy Meters Total

3 - Used to Compute Metrics

[Add A Meter](#)

Current Energy Date
Not Available

[Enter Your Bills](#)

Meters - Used to Compute Metrics (3)

[Change Meter Selections](#)

[View as a Diagram](#)

| Name Meter ID | Energy Type | Most Recent Bill Date | In Use? (Inactive Date) |
|--|------------------|--------------------------|----------------------------|
| Electric Grid Meter 34225131 | Electric - Grid | | Yes |
| Electric Solar Meter 34225132 | Electric - Solar | | Yes |
| Natural Gas 34225130 | Natural Gas | | Yes |

[Download Annual Totals by Meter](#)

Four Ways to Enter Bill Data

1. Manually
2. Use our [simple spreadsheet](#) (one meter) to upload or Copy/Paste
3. Use our [complex spreadsheet](#) (multiple meters + multiple properties)
4. [Find an organization](#) to electronically enter your data into Portfolio Manager

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Manage Bills (Meter Entries) for [Loveland Library](#)

Meter Selection: Electric Grid Meter - 34225131

Basic Meter Information

Monthly Entries

Display Year(s): Show All Years

| | Start Date | End Date | Usage kWh (thousand Watt-hours) | Total Cost (\$) | Estimation | Green Power | Demand (kW) | Demand Cost (\$) | Last Updated |
|---|------------|----------|---------------------------------|-----------------|------------|-------------|-------------|------------------|--------------|
| Click to add an entry | | | | | | | | | |
| Delete Selected Entries Add Another Entry Learn how to copy/paste | | | | | | | | | |

Display Year(s): Show All Years

| | Start Date | End Date | Usage kWh (thousand Watt-hours) | Total Cost (\$) | Estimation | Green Power | Demand (kW) | Demand Cost (\$) | Last Updated |
|--------------------------|------------|-----------|---------------------------------|-----------------|--------------------------|--------------------------|-------------|------------------|--------------|
| <input type="checkbox"/> | 1/1/2016 | 1/31/2016 | 134,437 | 10,355.00 | <input type="checkbox"/> | <input type="checkbox"/> | | | |
| <input type="checkbox"/> | 1/31/2016 | 2/29/2016 | 118,237 | 9,284.00 | <input type="checkbox"/> | <input type="checkbox"/> | | | |

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

Save Bills

Note that you need 12 months of consecutive data to generate performance metrics.

Make sure that there are no overlaps or gaps in your start and end dates.

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

Choose File No file chosen Upload

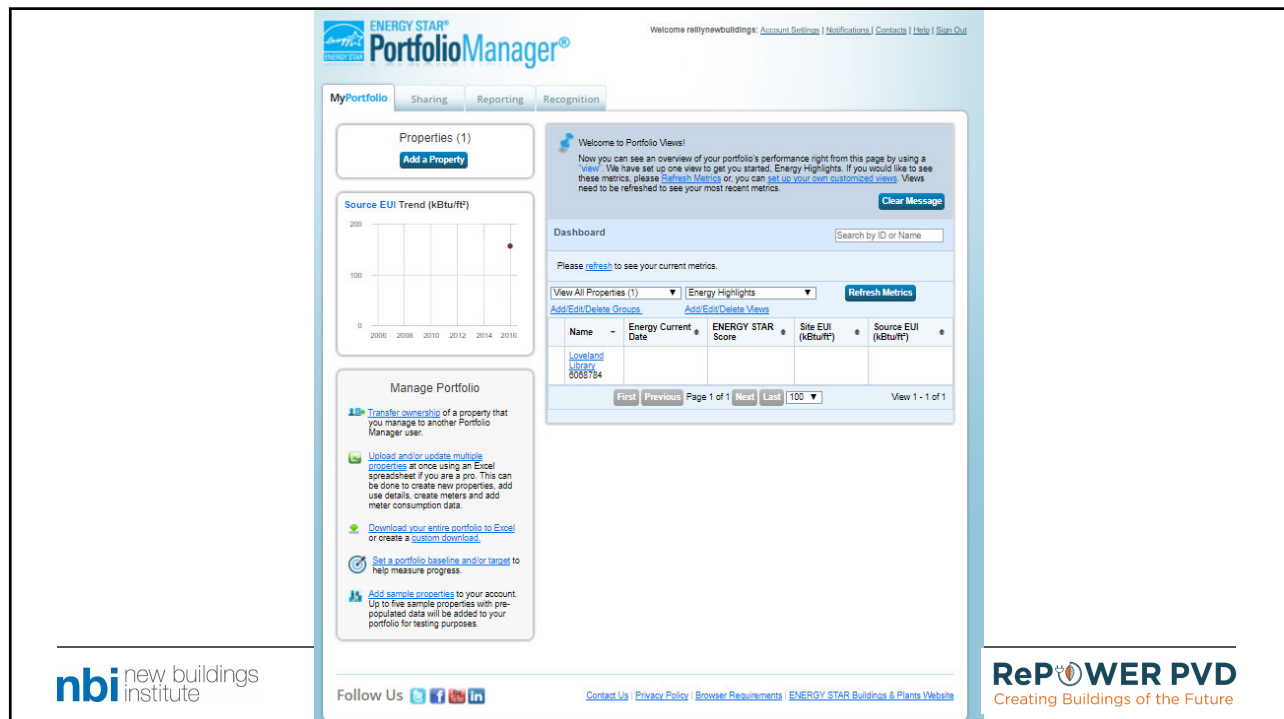
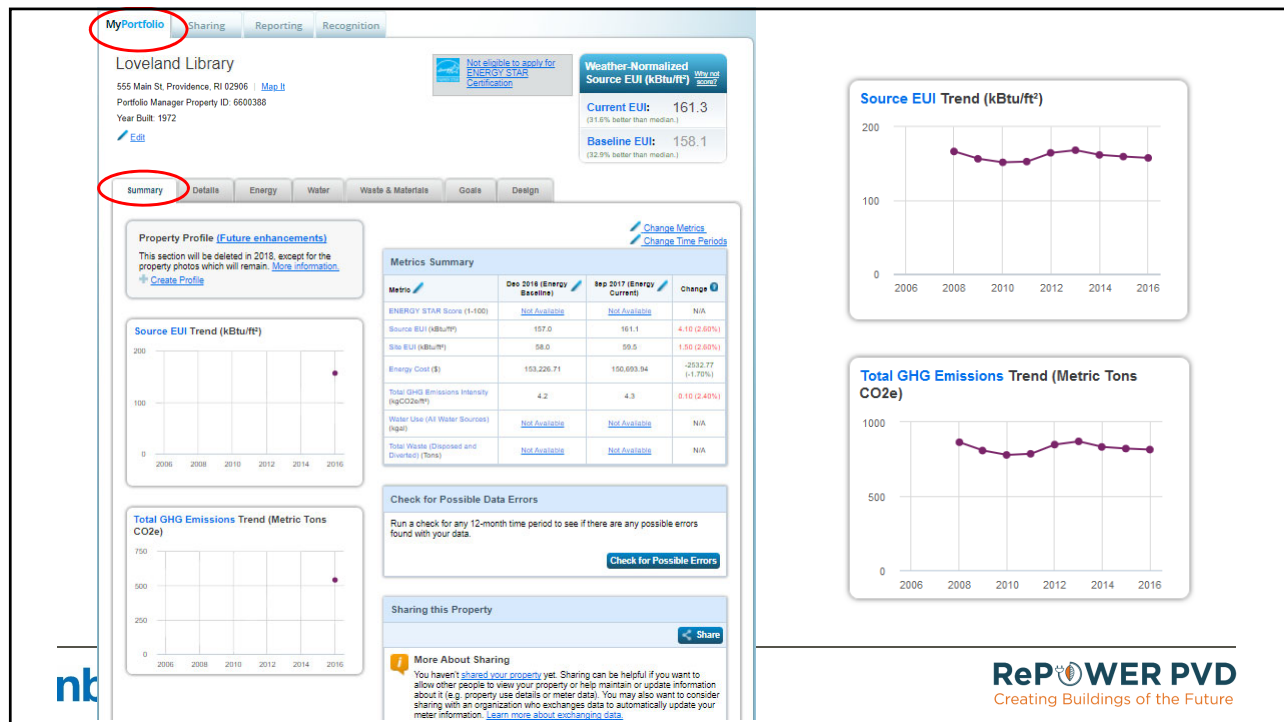
MeterConsumptionDataSpreadsheet_metered_gridPurchase_en - Excel

FILE HOME INSERT PAGE LAYOUT FORMULAS DATA REVIEW VIEW DEVELOPER ACROBAT

Clipboard Font Alignment Number Styles Cells

| | A | B | C | D | E | F | G |
|----|-----------------------|---------------------|------------------|-----------------|-----------------------|-------------------|------------------------|
| | Start Date (Required) | End Date (Required) | Usage (Required) | Cost (Optional) | Estimation (Required) | Demand (Optional) | Demand Cost (Optional) |
| 2 | 2/29/2016 | | 127760 | \$10,184.00 | No | | |
| 3 | 3/31/2016 | | 134903 | \$10,526.00 | No | | |
| 4 | 4/30/2016 | | 148026 | \$11,412.00 | No | | |
| 5 | 5/31/2016 | | 158493 | \$13,780.00 | No | | |
| 6 | 6/30/2016 | | 178913 | \$14,250.00 | No | | |
| 7 | 7/31/2016 | | 185187 | \$15,930.00 | No | | |
| 8 | 8/31/2016 | | 157600 | \$12,210.00 | No | | |
| 9 | 9/30/2016 | | 142406 | \$10,496.00 | No | | |
| 10 | 10/31/2016 | | 130840 | \$9,936.00 | No | | |
| 11 | 11/30/2016 | 12/31/2016 | 132172 | \$9,537.00 | No | | |
| 12 | 12/31/2016 | 1/31/2017 | 134437 | \$10,355.00 | No | | |
| 13 | 1/31/2017 | 2/28/2017 | 118757 | \$9,121.00 | No | | |
| 14 | 2/28/2017 | 3/31/2017 | 135133 | \$10,368.00 | No | | |
| 15 | 3/31/2017 | 4/30/2017 | 134093 | \$10,287.00 | No | | |
| 16 | 4/30/2017 | 5/31/2017 | 151377 | \$11,393.00 | No | | |
| 17 | 5/31/2017 | 6/30/2017 | 176770 | \$13,477.00 | No | | |
| 18 | 6/30/2017 | 7/31/2017 | 197381 | \$14,783.00 | No | | |
| 19 | 7/31/2017 | 8/31/2017 | 192745 | \$14,498.00 | No | | |
| 20 | 8/31/2017 | 9/30/2017 | 157967 | \$11,951.00 | No | | |

Note that there are different versions of the template for each fuel type.

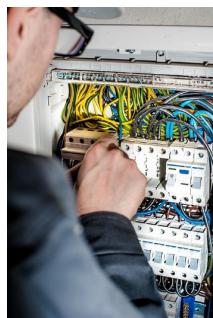


Benchmarking

Next Steps

Okay, Now What?

- Make Recommendations, Prioritize, Take Action!



Benchmarking



Brown Science Library

EUI = 178

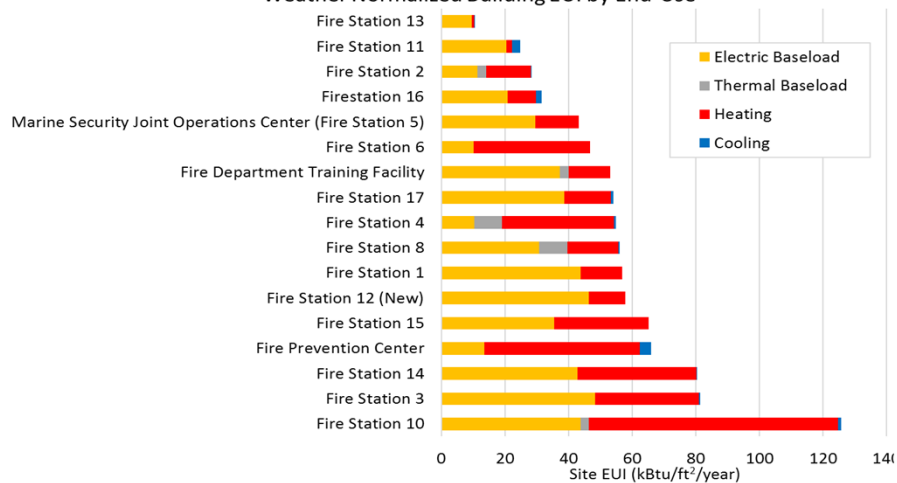
Good?

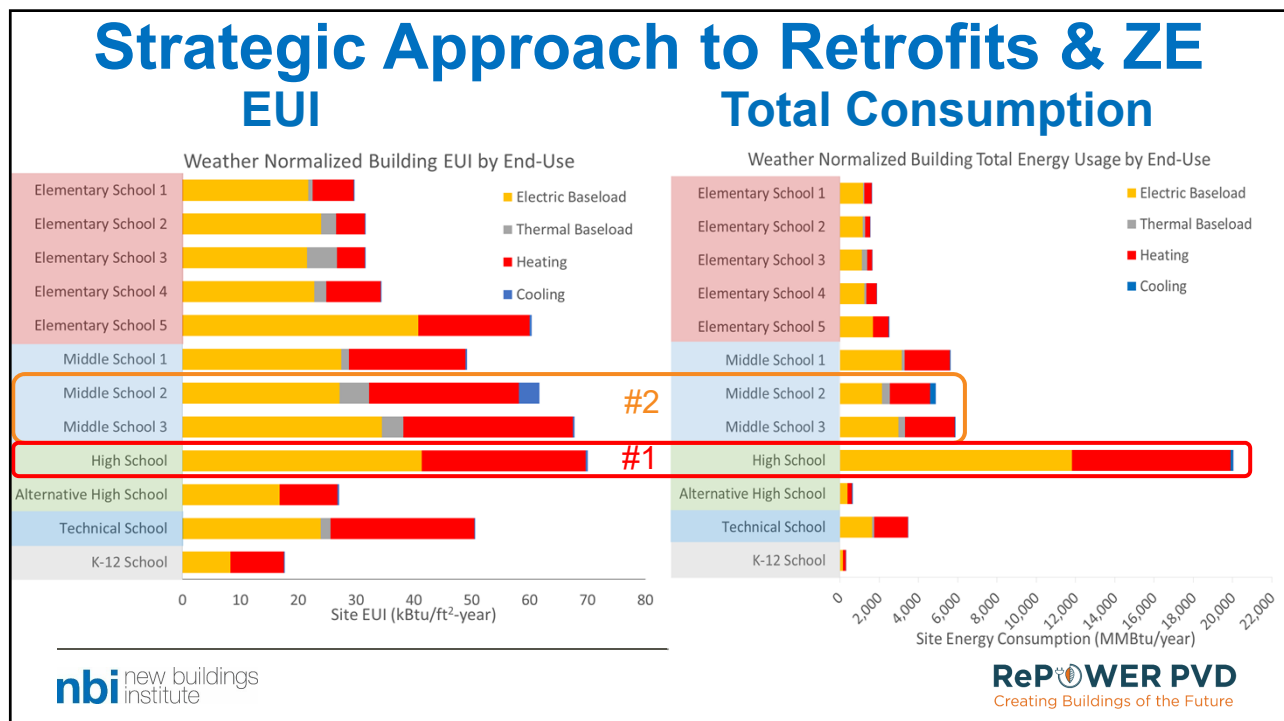
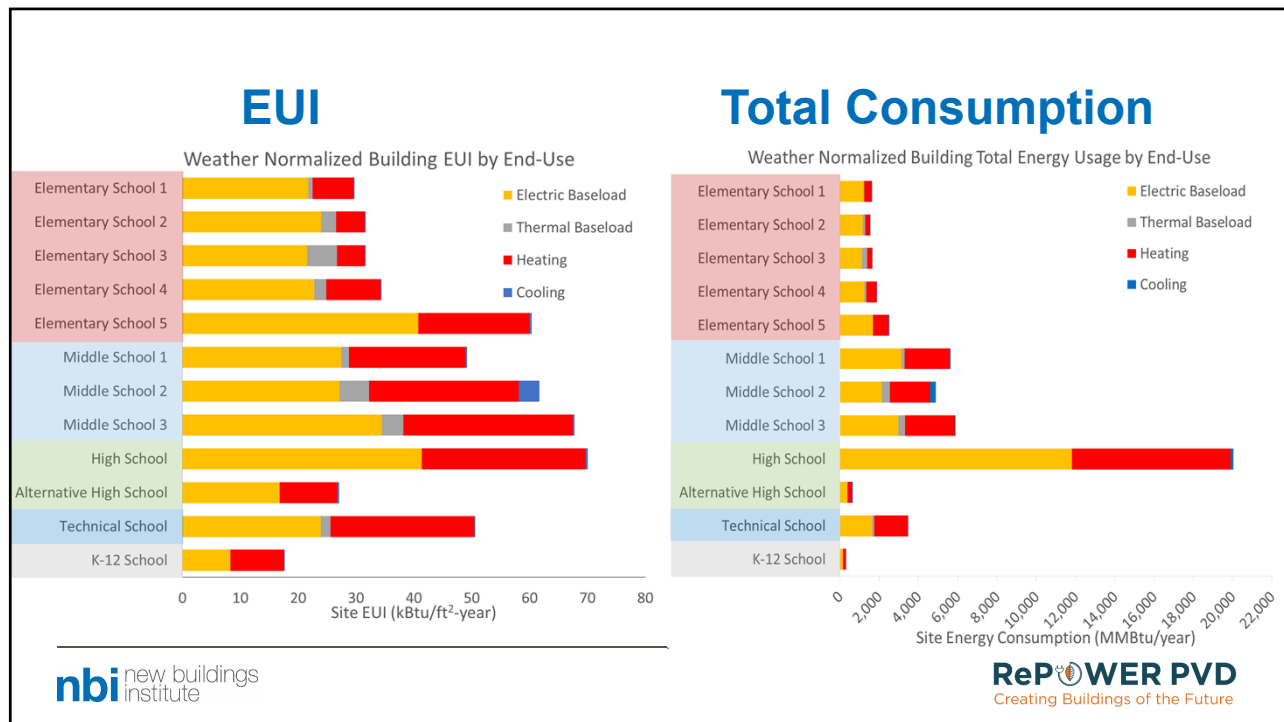
Bad?

Ugly?

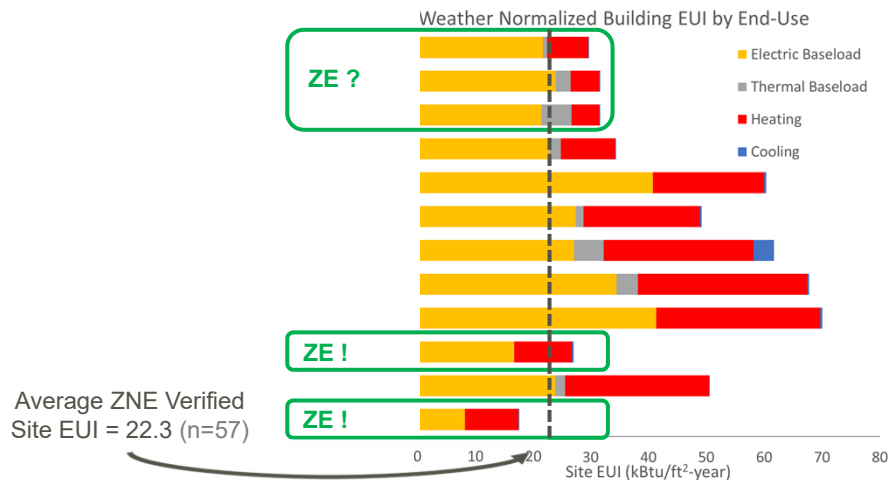
Portfolio Prioritization

Weather Normalized Building EUI by End-Use





Other ZE Pilot Candidates



Benchmarking Summary

• Why

- Leads to Energy Savings
- Track Building Performance
- Required by Mandatory Disclosure

• What

- Track Building Characteristics & Energy Usage

• How

- Record Data
- Calculate Key Performance Indicators (KPIs)
- Benchmarking Tools: Portfolio Manager
- Identify and prioritize buildings for energy efficiency upgrades

