

FOCUS CRE Benchmarking Toolkit User Guide

Welcome

Welcome to NYSERDA's Focus on Commercial Real Estate Benchmarking Toolkit, a free web-based tool that enables commercial building owners and managers to assess their buildings' energy efficiency and carbon footprint, and compare the results to peer buildings in New York State. Developed by the New York State Energy Research and Development Authority (NYSERDA) in partnership with the real estate industry, the Focus CRE Toolkit helps owners to prioritize buildings in their portfolio, and identify potential areas for investment within buildings.

This guide will walk you through all the stages of benchmarking the buildings in your portfolio. It will show you how to generate the following reports:

- **Focus CRE Scorecard** indicating the building's Energy Star Score from the EPA's Portfolio Manager, as well as the building's weather-normalized source energy consumption and carbon footprint. The results are shown in comparison to other buildings in New York State.
- **Building Comparison Report** comparing buildings in your portfolio based on the information in the Scorecard.
- **Meter Regression Chart** showing the consumption pattern associated with a meter, including the heating, cooling, and base energy loads.

About Focus CRE

Benchmarking is the first step in the Focus CRE program, New York State's new business-focused solution that shows you how to translate energy efficiency into higher asset value. Focus CRE enables commercial building owners to achieve financial and environmental objectives through a five-step process:

- **Benchmark and prioritize buildings** using the CRE Benchmarking Toolkit;
- **Identify opportunities for energy savings** through a cost-shared building Energy Scan;
- **Evaluate return on investment** by using the CRE Lease Analysis Tool to project how costs and savings associated with potential measures will accrue to the owner and tenants;
- **Develop and implement a Focus CRE Action Plan**, often including capital cost incentives from NYSERDA;
- **Measure improvement** towards financial and efficiency objectives.

NYSERDA will cost-share all technical and planning work, and provides significant incentives for implementing selected measures. For more information on the Focus CRE program and our suite of services, visit <http://www.nyserda.org/cre/static/>

Contact

If you need further assistance, or are interested in working with an Account Manager, please contact 1-866-NYSERDA or FocusCRE@nyserda.org.

Getting Started: Required Information

All of the following information is needed in order to benchmark a building accurately. If you do not have some of the information available, you may save your work and finish it later.

Building-wide	
Address	
Year constructed	
Gross floor area	Total number of square feet measured between the principal exterior surfaces of the enclosing fixed walls, including vent shafts and stairwells. Use CAD figures if available.
Average number of daytime workers	
For each space	
Space type:	Descriptor of how space is used (e.g., office) See Appendix A for a complete list of space types
Gross floor area:	<i>See definition above</i>
Operating hours:	Exclude hours occupied only by support staff, e.g., security.
Number of workers on main shift	
Number of personal computers	
Effective date:	Indicates when all current space values were first in effect.
Percent air conditioned / Percent heated	
Additional information required for specific space types:	
➤ Hospital	Buildings; floors; beds; if it contains tertiary care, lab facilities, or a laundry facility
➤ Hotel	If it contains a food or laundry facility; occupancy rate
➤ K-12 School	Number of students; if it contains a cooking facility; if it is ventilated; months of use; school district
➤ Parking	Enclosed floor space; non-enclosed floor space (but still covered); open floor space
➤ Pool	Pool size; months of use
➤ Retail	Number of cash registers, walk-in coolers and freezers, and open-and-close refrigerators
➤ Residence Hall	Number of rooms; if it contains a computer lab or dining hall
➤ Supermarket	Number of cash registers, refrigerated cases and freezers; if it contains a food prep area
➤ Warehouse	If the space is refrigerated; number of walk-in coolers and freezers, lighting
For each meter	
Utility delivery company & account number	
Meter type	Choose from Master, Direct, or Submeter
Energy type and unit	See Appendix B for more information
Utility bills or consumption data	Data must be for a minimum continuous 12-month period, and must be the same period for all meters.

User Guide Step One: Enter a Building

Logging on to the Focus Benchmarking Tool will bring you to the **Home** page.

Procedure	Notes
1. Click on Add a new building	<i>Add a new building</i> appears on the Home page.
2. Enter building name and location	
3. Enter building owner	Owners previously added to the portfolio will be available in a dropdown list. To add a new owner, select <i>Create new owner</i> in the dropdown box. <i>Please note: Creating an additional owner will not create a new Focus CRE Toolkit user login.</i>
4. Building construction year and usage	Year of construction and the number of floors above and below grade are optional. These are used for anonymous peer comparison purposes only.
5. Conditioned area	The Conditioned Area values at the building level are optional. They are used for anonymous peer comparison purposes only.
6. Save your data!	

Once you have entered and saved your initial building data, you will be taken to the building detail page.

Illustration of Building Detail Page



The screenshot shows the Focus Building Detail Page for 'Park Avenue South'. The page includes a navigation sidebar, a main content area with tabs for 'building detail', 'spaces', and 'meters', and a detailed data section. Callout boxes provide the following information:

- Portfolio Manager Score:** A green box with the score '82' and instructions: 'Click score to see scorecard' and 'Click "update" after entering or modifying data'.
- Link to User Guide and Help Desk:** A box pointing to the 'HELP | Logout' link in the top right.
- Links to add space, meter, and utility information:** A box pointing to the 'Add a space', 'Add a meter', and 'Import utility bills' buttons.
- Summary tabs:** A box pointing to the 'building detail', 'spaces', and 'meters' tabs.

The main data section for 'Park Avenue South' includes:

- Owner:** Park Avenue South, New York, NY 10003
- Year built:** 1914
- Number of floors:** Above grade: 21, Below grade: 2
- Gross floor area:** 272,974 sf
- Conditioned Area:** Heated: 106,102 sf, Cooled: 106,102 sf, Heated & cooled: 106,102 sf
- Main Building Parameters:** Heating plant equipment: HW Boiler, Cooling plant equipment: 1-Stage Absorption
- Cooling Plant Equipment Parameters:** Size of chillers: 10 sftons, Quantity: 1

User Guide Step Two: Add a Space Type

After you have saved the building data, you will be taken to the **Building Detail** screen. From there, click on *Add a space*.

Once you have created a space, you cannot change its type. To change the type, delete the space, and add it again as the new space type.

Procedure	Notes
1. Name the space	Give the space a unique identifier to help you track the information that you have entered.
2. Identify the space type	There are 15 predefined space types included in the Focus CRE Toolkit. The description for each is displayed when selected; a complete listing of space types and their descriptions can be also be found in Appendix A of this User Guide.
3. Provide information on usage	Each space type requires different information. You may choose to estimate information such as the number of occupants and personal computers, however, this will affect your Focus CRE Scorecard and EPA Portfolio Manager Score.
4. Save your data!	
5. Repeat as necessary	If your building contains multiple spaces, please return to the Building Detail page and click <i>Add a Space</i> , repeating the steps described above.

User Guide Step Three: Add meters

After you finish adding the building's spaces, you will be returned to the building detail page. Click *Add a meter*.

Procedure	Notes
1. Provide meter name and type.	Select from the following meter types: <ul style="list-style-type: none"> ➤ Master: Reflects the total consumption as recorded by several sub meters. ➤ Sub: Consumption totals for this meter feed into a master meter. <i>Please note: Master meter totals should be used for scoring.</i> ➤ Direct: Reflects consumption directly billed by the utility that does not qualify as a master meter.
2. Choose energy type and unit.	There are 16 primary forms of energy type that may be entered, as well as an option for 'other'. See Appendix B for the full list. <i>For district steam: Focus CRE's use of "MLbs" refers to millions of pounds. Con Edison's use of "MLbs" refers to thousands of pounds. Make sure that you have made any necessary conversions before entering steam data.</i>
3. Should this meter be included in a calculation of your building's total energy use?	Select "no" only if one of the following applies: <ul style="list-style-type: none"> ➤ The meter is a submeter and is included within the master meter data. ➤ The meter is used exclusively for production equipment and has no bearing on the building environment.
4. Is this meter currently active?	Select "no" if the account associated with the meter has been closed. Meters listed as active without current use data will prevent score generation.
5. Assign meter to the space(s) it services (Optional).	Highlight the applicable space listed under "Spaces not currently served" and click <i>add>></i> to move it to the "This meter currently serves" area. Assigning spaces is for your records and is not required.
6. Save your data!	Saving your meter data will return you to the Edit Meter page.
7. Add additional meters as needed.	Once you have returned to the Edit Meter page, repeat the steps described above.

User Guide Step Four: Adding Meter Data

FOCUS CRE Benchmarking Toolkit provides two methods for adding consumption data to your building's meters:

- **Import Utility Bills:** Use when adding large amounts of data or adding data for multiple meters.
- **Direct Entry:** Use when adding only a few months of meter.

Regardless of which method you choose, the Focus CRE Benchmarking Toolkit generates reports based on the most recent 12-month period that all meters for the building have in common.

Import Utility Bills

This tool enables you to import data from multiple meters at once to expedite benchmarking. However, pay close attention to the following:

- Every building and meter has its own unique ID, which is how the tool knows where to place the imported data.
- It is possible to create a template that contains the data for multiple meters, but you must make sure you use the proper BuildingID and MeterID for each meter, found in columns G and H of the template, respectively.
- Upon upload, changes made to data on the template will replace data that is already in the Focus CRE Toolkit.

Procedure	Notes
1. Click on Import Utility Bills	This link can be found on both the Home page and the Building Detail page.
2. Select a building	Select the building for which you will be uploading data.
3. Select a meter:	<p>Select the meter for which you will be uploading data. If you wish to update or add data for all the meters, select all.</p> <p><i>Please note: you cannot create a new meter in the spreadsheet. To create a meter, see Step 3 of this guide.</i></p>
4. Download Excel template	Click <i>Create</i> to download your template. Your browser will prompt you to save or open the file. Save the file to your system.
5. Update the data in the spreadsheet	<p>Open the file. If meter data has been entered in the Focus CRE Toolkit, the spreadsheet will be pre-populated. You may add new data or edit existing data in the spreadsheet.</p> <p>Add rows as needed. Check the Building ID and Meter ID to ensure they are correct in each row. When copying and pasting these values do not use Excel's 'fill tool'; you must copy and paste the values. If you "drag" down the cells, Excel will increment the values and the meter data will not upload properly. A quick visual check to make sure the Building and Meter IDs are all correct will save time.</p>
6. Save your file	
7. Upload file	To upload a completed template, click on <i>Browse</i> under <i>Select an Import File</i> , and select your updated file. Click open, then click the <i>Submit</i> button.

Direct Entry

To update or add individual readings, you may find editing data directly in the Meter Consumption table useful. You may reach these tables through the Import Utility Bills page or by editing a meter's details.

Procedure	Notes
1. Create a new row	Clicking <i>Add</i> will create a new row in the table. You may edit data directly in the form by clicking on the cell that needs to be updated. <ul style="list-style-type: none"> ➤ Edit or delete an existing row: Click on the row you wish to alter; this will highlight the row. Simply type in new data to edit the cell, or click on delete to edit the row,
2. Adjust start date, end date, consumption, and cost	Users must enter the energy consumption for each billing cycle; make sure that there are no gaps or overlaps between any of the billing cycles. Supplying energy costs is optional.
3. Click <i>Add</i> again	This will automatically add the dates for the month following the last reported reading.
4. Save your data!	Changes to the meter page will not be saved until you click <i>Save</i> from the Edit a Meter page, or <i>Submit</i> from the Import Utility Bills page.

User Guide Step Five: Generating Reports

Benchmarking Score tab and Scorecard

To generate a building scorecard in the FOCUS CRE Benchmarking Toolkit, go back to the building detail page and click *Update* under the Portfolio Manager Score box towards the left of the screen. Clicking this link will automatically run regressions on all of the building meters, send the data to the EPA, and retrieve your Portfolio Manager Score for that building. *You may need to wait for up to one business day for scoring to update. Your score will still be generated if you log out of the program and log back in later.*

The score tab provides supplemental information about your building's benchmark score:

- ❖ **Gray score tab:** This building's information is not being included in the peer comparison reports.
- ❖ **Green score tab:** This building's information is being included in the peer comparison reports.
- ❖ **Orange and green score tab:** This building's information is being included in the peer comparison report, but there is error that needs to be addressed.
- ❖ **Below the score tab:** Indicates if there were any *alerts* generated during the rating process, if the report needs to be updated, or if the report is current.

The graphs in the benchmark scorecard compare your building to others in the peer comparison group. The best performing buildings are to the right hand side and are shaded green. Scores to the left indicate higher consumption and impact levels.

Building Comparison Report

The Building Comparison provides a side-by-side view of Source Energy Consumption, Carbon Dioxide Impact, and Portfolio Manager Score for up to eight buildings within your portfolio. The data is provided on a per square foot basis, allowing you to compare the efficiency of each building, regardless of size.

Select the *Building list* tab from the **My portfolio** page. Check the buildings you wish to compare by clicking the box next to each building. Buildings selected must appear on the same page of building listings. To compare buildings on different pages, increase the number of buildings per page view until they are on the same page.

Meter Regression Chart

The Focus CRE Benchmarking Toolkit allows you to determine your buildings energy use in relation to local weather conditions. Daily average temperatures are used to determine the amount of energy the building uses independent of outdoor conditions (the base load), and the extent that outdoor conditions increase energy consumption. This information helps identify the building systems most affected by outdoor temperature and therefore could receive the greatest benefit from upgrades.

To view a meter regression chart, proceed to the meter's detail page, accessible on the *Meters* tab of the **Building Detail** page. If you have not yet requested an EPA Portfolio Manager score, select the range of dates for the analysis and click *Run Regression*. Otherwise, *Display Chart* will generate the Meter Regression chart.

Appendix A: Space Types

The Focus CRE Toolkit recognizes 15 different space types. Floor area for all supporting functions, such as lobbies, stairways, rest rooms, elevator shafts, etc., should be included with the space type that it supports.

Warehouse: Facility space used to store goods, manufactured products, merchandise or raw materials. Does not include storage areas used to support another space type, e.g., the storage area of a retail store.

Hospital: A facility or set of facilities (campus) that are used for the diagnosis, treatment, and temporary housing of patients with acute care needs. Children's hospitals also fit this definition.

Bank/Financial: Building or building area occupied by any bank or financial institution. This includes space that would otherwise fit the definition of "Office."

Computer Data Center: Any room or partitioned space that is devoted to high-density computing equipment. A computer data center may not exceed 10% of the total building area.

Pool: Any heated swimming pool inside or outside the facility.

Medical Office: Area used to provide ambulatory treatment for medical, dental, or psychiatric outpatient care.

Retail: Store(s) with a direct street entrance/exit. Gyms, restaurants, and electronics stores are not considered "Retail" and should instead be categorized as "Other."

Hotel: Space used for overnight lodging. Hotels and motels rent overnight accommodations by room or suite, and have a bath or shower and other amenities in most guest rooms. Resorts and extended stay hotels are not yet eligible.

Supermarket: Space that is primarily devoted to the retail sale of food and beverage products.

Courthouse: Include all supporting areas such as temporary holding cells, fitness areas for staff, office space, etc.

Other: Applies to a facility or a portion of a facility where the primary activity does not fall into any of the available space types. May not exceed 10% of the total building area.

K-12 School: Vocational, technical, and trade schools should not be included.

Parking: Enclosed or open parking areas that operate from the same energy meter as the primary building. Do not count separately metered parking. Loading docks are not considered parking.

Residence Hall: Space offering accommodation for long-term residents that is associated with educational institutions or military facilities.

Office: Space used for general office, professional and administrative purposes. Office space occupied by a financial institution should be categorized as "Bank/Financial."

Appendix B: Energy Types and Measures

Unit of measure by energy type

Energy Type	Unit of Measure
Coal (anthracite)	kBtu, kLbs, lbs, MBtu, MLbs, tons
Coal (bituminous)	kBtu, kLbs, lbs, MBtu, MLbs, tons
Coke	kBtu, kLbs, lbs, MBtu, MLbs, tons
Diesel (No. 2)	gal, kBtu, MBtu
District Chilled Water - Electric-Driven Chiller	kBtu, MBtu, ton hours
Electricity	kBtu, kWh, MBtu, MWh
Fuel Oil (No. 1)	gal, kBtu, MBtu
Fuel Oil (No. 2)	gal, kBtu, MBtu
Fuel Oil (No. 4)	gal, kBtu, MBtu
Fuel Oil (No. 5 and No. 6)	gal, kBtu, MBtu
Kerosene	gal, kBtu, MBtu
Liquid Propane	cf, gal, kBtu, kcf, MBtu
Natural Gas	ccf, cf, kBtu, kcf, MBtu, Mcf, therms
Other	kBtu
Photovoltaic	kBtu, kWh
Propane	cf, gal, kBtu, Kcf, MBtu
Steam*	kBtu, kLbs, MBtu, MLbs (see note)

Index to abbreviations

Abbreviation	Full name
Btu	British Thermal Unit
kBtu	One thousand Btus
MBtu	One million Btus
kWh	Kilowatt hours
MWh	Megawatt hours
gal	Gallons
therms	Therm

Abbreviation	Full name
cf	Cubic feet
ccf	One hundred cubic feet
kcf	One thousand cubic feet
Mcf	One million cubic feet
kLbs*	One thousand pounds (see note)
MLbs*	One million pounds (see note)

*Note: Focus CRE's use of "MLbs" refers to millions of pounds. Con Edison's use of "MLbs" refers to thousands of pounds. Make sure when entering steam data into the Benchmarking Toolkit that you first adjust the unit measure.

For Further Assistance

If you need further assistance, or are interested in working with an Energy Project Manager to create a Focus CRE Action Plan, please contact 1-866-NYSERDA or FocusCRE@nyserda.org.