

Greener Homes Seminar 2024

Benchmarking, Energy
Auditing, & NHSaves
Programs



Mission Driven Consulting Services

Agenda

- Benchmarking
- Auditing Services
- NHSaves Programs
- Case Studies





What is Benchmarking?

“Benchmarking is a way to measure the current energy performance of a building against past data or buildings of a similar size and occupancy.”

-Better Buildings Alliance



Compare buildings to national averages



Compare buildings of similar usage types



Compare buildings in a portfolio

Benchmarking Metrics



Annual Energy Use



Energy Use Intensity (EUI) = Energy Use / Sq. Ft.



Total Annual Energy Cost

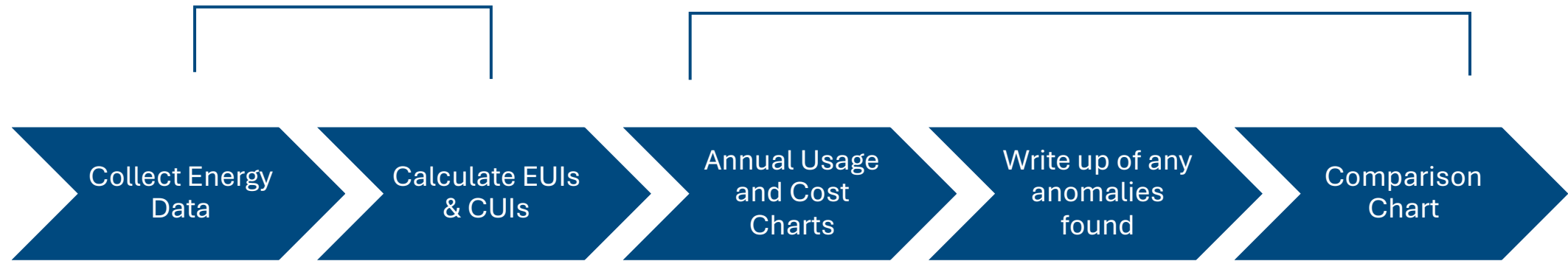


Cost Use Intensity (CUI) = Energy Cost / Sq. Ft.

Benchmarking Process

Calculations

Reporting





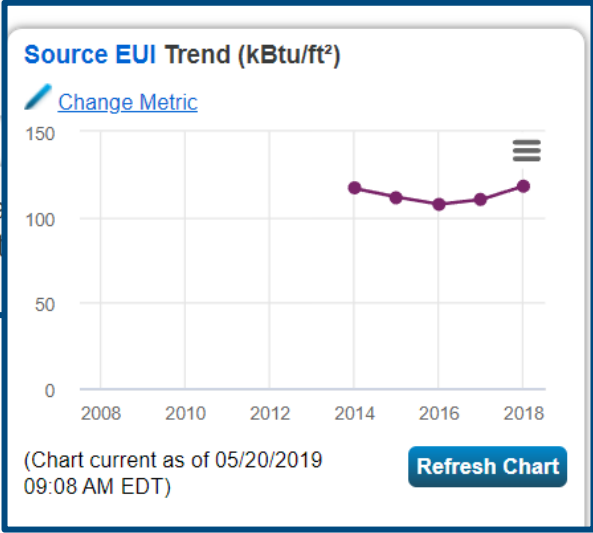
ENERGY STAR® PortfolioManager®

Energy Performance (kBtu/ft²)

Legend:
● Source EUI
● Site EUI

Progress Towards your Energy Target [Change Time Period](#)

Metric	Dec 31 2015 (Energy Baseline)	Dec 31 2022 (Energy Current)	Target*	Median Property*
ENERGY STAR score(1-100)	100	76	Not Set	50
Source EUI(kBtu/ft²)	49.1	108.7		
Site EUI(kBtu/ft²)	48.2	59.5		
Electricity Use (kWh)	8018403.0	4389115.2		
Propane Use (kBtu)	141296.01	298.2		



Metrics Summary

Metric	Dec 2015 (Energy Baseline)	Jan 2017 (Other)	Change
ENERGY STAR Score (1-100)	100	100	0.00 (0.00%)
Source EUI (kBtu/ft²)	49.1	48.9	-0.20 (-0.40%)
Site EUI (kBtu/ft²)	48.2	48.0	-0.20 (-0.40%)
Energy Cost (\$)	77,693.47	63,347.05	-14,346.42 (-18.50%)
Total (Location-Based) GHG Emissions Intensity (kgCO2e/ft²)	3.1	3.1	0.00 (0.00%)
Electricity Use - Grid Purchase and Generated from Onsite Renewable Systems (kWh)	5,873.1	5,851.2	-21.90 (-0.40%)
Propane Use (kBtu)	3,534,129.8	3,518,612.3	-15,517.50 (-0.40%)

Property Type

Property Type - Self-Selected: [Multifamily Housing](#) [Edit](#)

Property Type -Portfolio Manager-Calculated: [Multifamily Housing](#)

The Portfolio Manager-Calculated for your metrics (properties). [Learn more.](#)

Generate & Download Performance Document for this Property



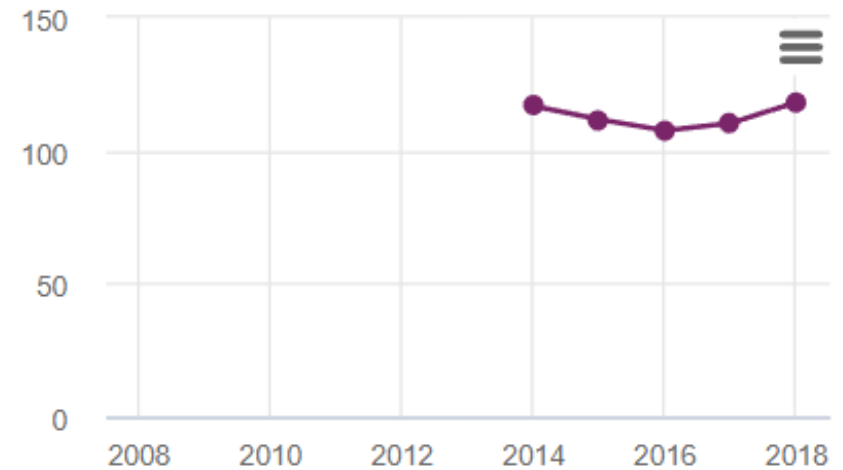
ENERGY STAR® PortfolioManager®

Metrics Summary

Metric	Dec 2015 (Energy Baseline)	Jan 2017 (Other)	Change
ENERGY STAR Score (1-100)	100	100	0.00 (0.00%)
Source EUI (kBtu/ft ²)	49.1	48.9	-0.20 (-0.40%)
Site EUI (kBtu/ft ²)	48.2	48.0	-0.20 (-0.40%)
Energy Cost (\$)	77,693.47	63,347.05	-14,346.42 (-18.50%)
Total (Location-Based) GHG Emissions Intensity (kgCO ₂ e/ft ²)	3.1	3.1	0.00 (0.00%)
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Source EUI Trend (kBtu/ft²)

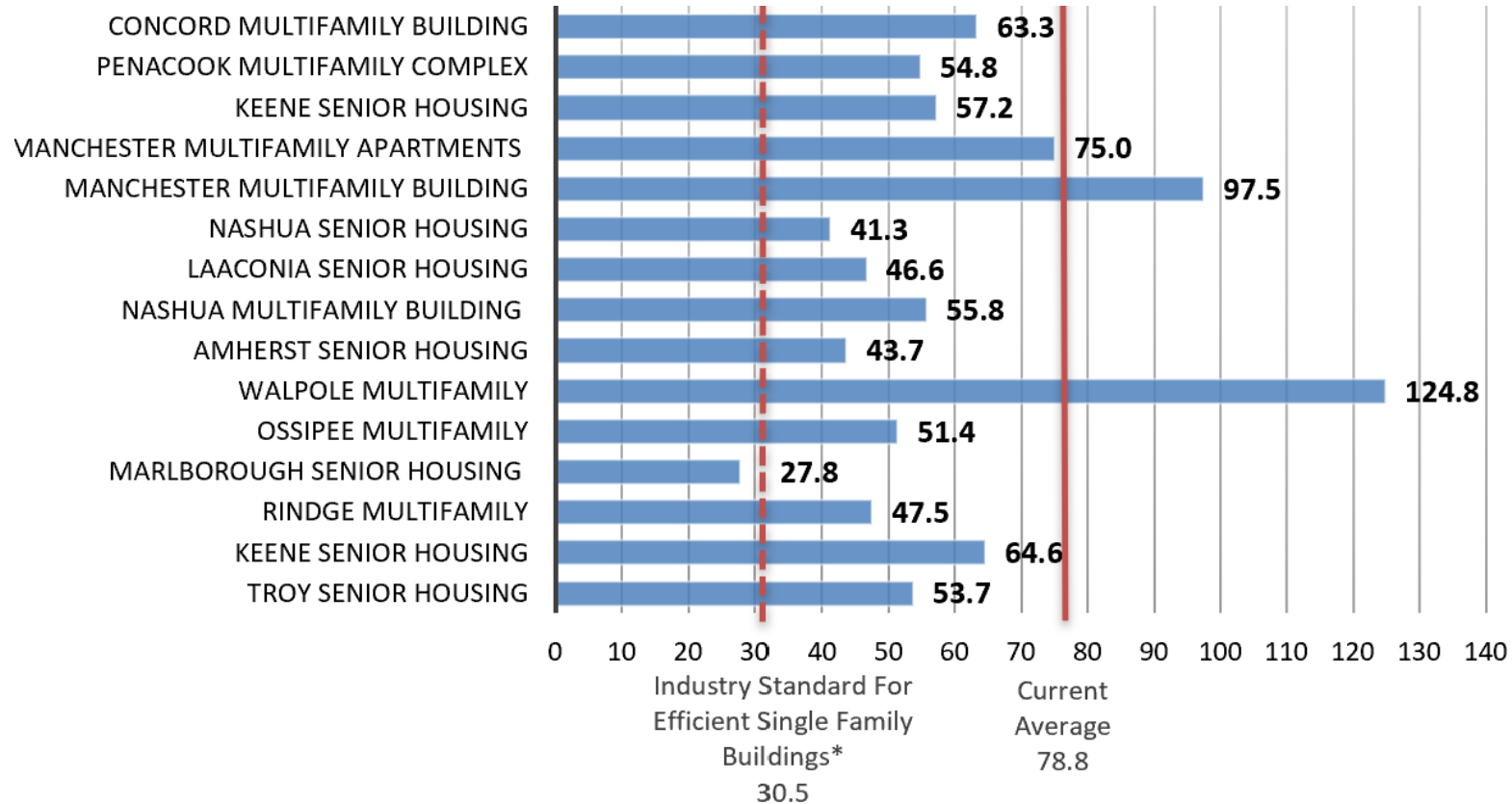
[Change Metric](#)



(Chart current as of 05/20/2019
09:08 AM EDT)

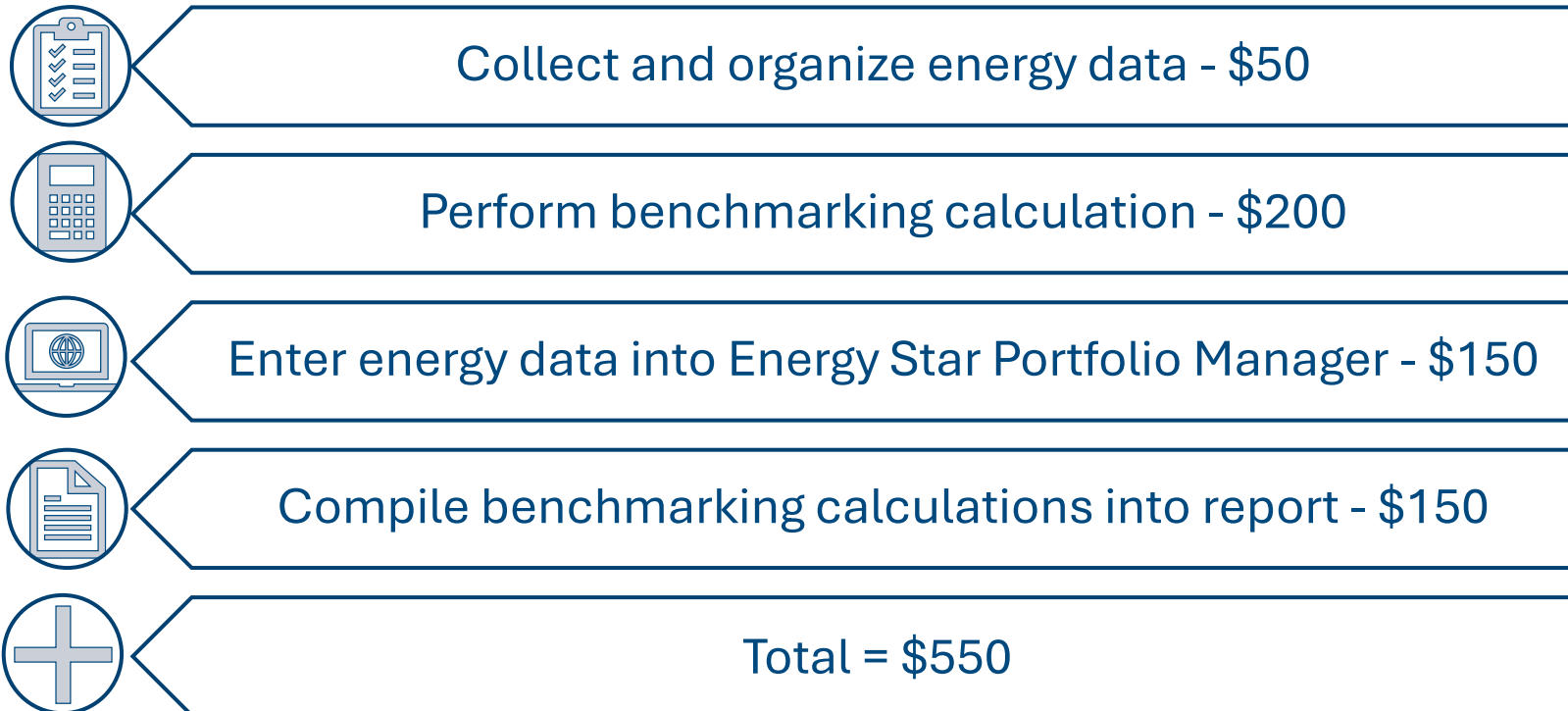
[Refresh Chart](#)

Building Comparison



Benchmarking Services

Benchmarking Pricing Per Building / Complex



Energy Auditing Services



“The information that was provided to us was extremely helpful and the programs and solutions offered will be instrumental in getting Monadnock Village and our other properties in a better place”.

- Melissa Blood
Asset Manager, AHEAD Inc.

Types of Energy Audits



Walk-through Audit



Level I Audit



Level II Audit

Types of Energy Audits

Walk-through Audit

- Most economical
- Review of building systems
- Project scope development



Types of Energy Audits

Level I Audit

- Write up of existing conditions
- Blower door & infrared imaging
- Proposed energy efficiency measures



Types of Energy Audits

Level II Audit

- Write up of existing conditions
- Benchmarking
- Blower door & infrared imaging
- Proposed energy efficiency measures
- Energy and financial modeling of each measure

Pricing Structure

Audit Pricing Per Building



Scoping Assessment - Free



Level I Audit - \$1,800 to \$4,500



Level II Audit - \$4,500 to \$9,000



The RBG can guide select projects through NHSaves programs, and potentially fund the full cost of the cost-effective energy efficiency improvements.

- Home Energy Assistance (HEA)
- Commercial Pathways



“...Resilient Buildings Group ‘connect[ed] the dots’ and guid[ed] Easterseals to the NHSaves opportunities...”

**-Jason Teaster
Easterseals project 2023**

Excerpt from the [New Hampshire Bulletin article](#)

Home Energy Assistance (HEA) Program



Insulation Upgrades

Insulation for attics, walls, and basements to improve comfort and efficiency



Air Sealing Work

Air sealing work to reduce drafts through the building



HVAC Upgrades

Replacement of eligible heating systems



Thermostat Replacements

Programmable thermostats that allow for scheduling set backs



Ventilation Systems

Replacement of exhaust fans to remove moisture and stale air

Commercial Programs

1

Instant “Midstream”
Program

2

Direct Install/Turnkey
Program

3

Prescriptive Application
Program

4

Custom Application
Program



Case Studies



Multifamily Building

Derry, NH

- ✓ **Air Source Heat Pump System** to replace baseboard electric heating system
- ✓ **Energy Star Refrigerators** to replace the old inefficient units
- ✓ **LED Lighting** to replace existing linear fluorescent lights



Single Family Home

Concord, NH

- ✓ **Attic insulation & air sealing**
- ✓ **Basement Insulation**
- ✓ **Weatherstripping** for all exterior doors
- ✓ **WiFi programmable thermostats**



Multifamily Building

Nashua, NH

- ✓ Rebate for **high-efficiency boilers**
- ✓ **Energy Star Refrigerators** to replace the old inefficient units
- ✓ **Attic insulation & air sealing**
- ✓ **Weatherstripping** for all exterior doors

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