



Energy Audit Report

REPORT DATE: May 6, 2024

PROPERTY INFORMATION:

Transfer Station
8 White Spruce Road
Bar Harbor, Hancock County, Maine 04609

PROJECT INFORMATION:

AEI Project No. 498453
Site Assessment Date: October 2, 2024

PREPARED FOR:

Town of Bar Harbor
93 Cottage Street
Bar Harbor, Maine 04609

PREPARED BY:

AEI Consultants - Corporate Headquarters
2500 Camino Diablo
Walnut Creek, California 94597



May 6, 2024

James Smith
Town of Bar Harbor
93 Cottage Street
Bar Harbor, Maine 04609

Subject: Energy Audit Report
Transfer Station
8 White Spruce Road
Bar Harbor, Maine 04609
AEI Project No. 498453

Dear James Smith:

AEI Consultants is pleased to provide the *Energy Audit Report* of the above referenced property. This assessment was authorized and performed in accordance with the scope of services engaged.

We appreciate the opportunity to provide services to you. If you have any questions concerning this report, or if we can assist you in any other matter, please contact me at (201) 332-1844 or bmorgan@aeiconsultants.com.

Sincerely,

A handwritten signature in black ink that reads "Brian Morgan". The signature is written in a cursive style with a prominent initial "B".

Brian Morgan
Business Development Manager
AEI Consultants

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1.0 CERTIFICATION/DISCLAIMER

AEI has completed an Energy Audit for the Property located at 8 White Spruce Road, Bar Harbor, Hancock County, Maine (the "Property"). AEI visited the site on October 2, 2024.

The energy conservation opportunities contained in this report have been reviewed for technical accuracy. The reader is reminded that energy savings ultimately depend on variable factors including occupant behavior, weather, and quality of installation. Estimated installation costs are based on a variety of sources, including our own experience at similar facilities, our own pricing research using local contractors and vendors, and cost handbooks such as those produced by RS Means. The cost estimates represent the best judgment of the auditors for the proposed action. The Owner is encouraged to confirm these cost estimates independently since actual installed costs can vary widely for a particular installation. AEI does not guarantee installed cost estimates and shall in no event be liable should actual installed costs vary from the estimated costs herein.

AEI does not guarantee the costs savings estimated in this report. AEI shall in no event be liable should the actual energy savings vary from the savings estimated herein.

AEI certifies that it has no undisclosed interest in the Property and that AEI's employment and compensation are not contingent upon the findings or estimated costs to remedy any deficiencies due to deferred maintenance and any noted component or system replacements.

2.0 EXECUTIVE SUMMARY

AEI Consultants (AEI) was retained by Town of Bar Harbor to conduct an ASHRAE Level II Energy Audit, in conformance with the scope and limitations of ASHRAE *Procedures for Commercial Building Energy Audits*, Second Edition (2011), ANSI/ASHRAE/ACCA Standard 211-2018, *Standard for Commercial Building Energy Audits* for the Property located at 8 White Spruce Road, Bar Harbor, Hancock County, Maine (the "Property").

2.1 PURPOSE AND SCOPE

AEI has performed a comprehensive analysis of the Property to identify possible areas where Energy and Water may be conserved. The areas being considered include HVAC equipment, lighting, domestic water heating, appliances, fenestrations, insulation, roofing, bathroom fixtures, and miscellaneous equipment.

Utility Analysis

AEI has performed a comprehensive utility analysis to determine the Energy and Water consumption of the buildings. The analysis utilizes at least 12 months of common area utility bills and as many tenant utility bills as possible. By observing peak loads during the year, a baseline for energy and water consumption can be determined.

Energy Audit Process

Where possible, in addition to the Site Survey, AEI has utilized construction drawings, interviews, repair records, etc. to determine the actual current efficiency of the Property's building envelopes and equipment.

Accuracy of Analysis

AEI used spreadsheet calculations that base estimated savings on the as-built facility and energy consuming equipment's current operating condition. The simple payback calculations are based on the labor and material cost of the new equipment divided by the cost savings per year. AEI shall not be responsible for equipment that may not reach the end of its useful life or costs more to operate than noted in the EEMs.

Current Energy Code

The energy code adopted by Maine at the time of this report is 2015 International Energy Conservation Code (2015 IECC) or equivalent for Commercial construction. [<https://www.energycodes.gov/status-state-energy-code-adoption>]

2.2 SIGNIFICANT ASSUMPTIONS

The following assumptions are made by AEI in this report. AEI relied on information derived from secondary sources including governmental agencies, the client, designated representatives of the client, property contact, property owner, property owner representatives, computer databases, and personal interviews. AEI has reviewed and evaluated the thoroughness and reliability of the information derived from secondary sources including government agencies, the client, designated representatives of the client, property contact, property owner, property owner representatives, computer databases, or personal interviews.

It appears that all information obtained from outside sources and reviewed for this assessment is thorough and reliable. However, AEI cannot guarantee the thoroughness or reliability of this information.

2.3 LIMITATIONS

Available information has been analyzed using currently accepted assessment techniques and it is believed that the inferences made are reasonably representative of the Property. AEI makes no warranty, expressed or implied, except that the services have been performed in accordance with generally accepted industry practices applicable at the time and location of the study.

Responses received from local government agencies or other secondary sources of information after the issuance of this report may change certain facts, findings, conclusions, or circumstances to the report. A change in any fact, circumstance, or industry-accepted procedure upon which this report was based may adversely affect the findings, conclusions, and recommendations expressed in this report.

2.4 RELIANCE

All reports, both verbal and written, are for the benefit of Town of Bar Harbor. This report has no other purpose and may not be relied upon by any other person or entity without the written consent of AEI. Either verbally or in writing, third parties may come into possession of this report or all or part of the information generated as a result of this work. In the absence of a written agreement with AEI granting such rights, no third parties shall have rights of recourse or recovery whatsoever under any course of action against AEI, its officers, employees, vendors, successors or assigns.

Reliance is provided in accordance with Town of Bar Harbor and AEI's contract and Terms and Conditions dated August 28, 2024. The limitation of liability defined in the contracted terms is the aggregate limit of AEI's liability to the client and all relying parties.

2.5 FINANCIAL ANALYSIS DEFINITIONS

Simple Payback = The estimated installation cost divided by the calculated annual cost avoidance.

EUL = Estimated Useful Life of components and systems as determined by manufacturers, ASHRAE, HUD, Fannie Mae, Freddie Mac and other authorities.

SIR = Savings to Investment Ratio; $(EUL \times \text{Annual Savings}) \div \text{Initial Cost}$

ROI = Return on Investment; $(EUL \times \text{Annual Savings} - \text{Initial Cost}) \div \text{Initial Cost}$

IRR = Internal Rate of Return; the annual yield from a project, usually expressed as a percentage of the total amount invested; the compound rate of interest which, when used to discount cash flows, will result in zero net savings. If the IRR is greater than the investor's stated discount rate, the measure is considered beneficial.

NPV = Net Present Value; The value (the gain minus the cost) of an investment in today's dollars over some specified time period. If the investment has a positive NPV, it is generally considered to be beneficial.

2.6 SUMMARY OF BUILDING PERFORMANCE

The following table summarizes the current and proposed building performance with the recommended Energy and Water Efficiency Measures (EWEMs) described in the following section.

EWEM Summary Table	
Current Building Energy Usage	925,792 kBtu
Current Building Energy Cost	\$7,842
Proposed Energy Savings	631,175 kBtu
Proposed Energy Cost Savings	\$395
Energy Savings	68.2%
Energy Cost Savings	5.0%
Investment for EEM's	\$952
Payback for Investments (without water savings)	2.4 Years
Payback for Investments (with water savings)	2.0 Years
Site Energy Use	
Current Electric Site Energy Consumption	53,408 kWh
Proposed Electric Savings	2,687 kWh
Proposed Electric Savings	5.0%
Current Used Oil Energy Consumption	5,388 Gal
Proposed Used Oil Savings	0 Gal
Proposed Used Oil Savings	0.0%
Site Energy Use Intensity	
Total Building Area	3,560 Sq. Ft.
Current Site Energy Use Intensity	260 kBtu/Sq. Ft.
Proposed Site Energy Use Intensity	83 kBtu/Sq. Ft.
Source Energy Use Intensity	
Current Source Energy Use Intensity	354 kBtu/Sq. Ft.
Proposed Source Energy Use Intensity	171 kBtu/Sq. Ft.
Site Greenhouse Gas Emissions	
Current Site GHG Emissions	68.13 MTCO ₂ e/Yr
Proposed Site GHG Emissions	67.47 MTCO ₂ e/Yr
Water and Sewer Usage	
Current Usage	4.599 kGal
Current Cost	\$204
Proposed Savings in kGal	1.752 kGal
Cost Per kGal	\$44.36
Proposed Cost Savings	\$78
Percent Water and Cost Savings	38.1%

2.7 RECOMMENDED ENERGY AND WATER EFFICIENCY MEASURES (EWEM)

The following recommended EWEMs have been analyzed using calculations based on occupant usage, localized climate conditions, HVAC and ventilation operating hours, and lighting hours. The HVAC operating hours are approximations and may vary depending on the severity of the weather. Water consumption is based on the number of occupants and assumed running times for water consuming devices. The EWEM table shows the initial investment cost, energy and water consumption and cost savings, estimated equipment expected useful life (EUL), investment simple payback, savings to investment ratio (SIR), and return on investment (ROI) for each EWEM. The utility cost increase over the life of the EWEMs implemented was not considered as a factor in the financial analysis for each measure. Any analyzed EWEMs with a Savings to Investment Ratio less than 1.0 (or a negative Return on Investment) are not included in this table.

Energy And Water Efficiency Measures (EWEM) Summary

Energy And Water Efficiency Measure (EWEM) Description	Initial Cost (\$\$)	Electricity Savings (kWh)	Used Oil Savings (Gal)	Water/ Sewer Savings (kGal)	Annual Utility Savings (\$\$)	Simple Pay Back (Years)	EUL (years)	SIR	ROI	Owner % Energy Savings	Projected GHG Emissions Reduction MTCO _{2e}	kBTU Savings
Retrofit 13 Interior Linear Fluorescent T12 and T8 Lighting Fixtures with 34 DLC Certified Linear LED Lamps.	\$671	2,687	0	0	\$395	1.7	10	5.88	4.88	1.0%	0.660	9,168
Replace 1 Existing Toilets with WaterSense Labeled Low Flow 0.8 GPF Single Flush Toilets, Niagara Stealth 2-Piece 0.8 GPF Ultra-High-Efficiency Single Flush Elongated Toilet, or equivalent toilets.	\$281	0	0	1.8	\$78	3.6	20	5.54	4.54	0.0%	0.00	0
Totals =	\$952	2,687	0	2	\$472	2.0	n/a	n/a	n/a	1.0%	0.66	9,168

2.8 ENERGY AND WATER EFFICIENCY MEASURES NOT RECOMMENDED

The following EWEMs were analyzed but not included in the recommended EWEM list due to one or more unsatisfactory financial analysis metrics. This would include any EWEM with a Savings to Investment Ratio less than 1.0 or a negative Return on Investment.

Description:

This measure explores the potential to significantly reduce the facility's greenhouse gas emissions by supplementing the existing heating system with additional electric heat pumps. Currently, the office areas are conditioned by a 2-ton mini-split heat pump system, and a 200,000 BTU/hour used oil furnace provides heating for the remainder of the waste transfer facility. Notably, the facility benefits from a free source of used oil for this furnace.

The proposed project involves installing four additional 5-ton mini-split heat pump units to offset most of the facility's current heating load. Because the heat pumps' capacity and efficiency decrease as outdoor air temperatures drop, the existing used-oil furnace would be retained to operate during periods of high heating demand when the outdoor air temperature falls below approximately 25°F. This hybrid approach ensures reliable heating while maximizing the use of the more efficient heat pumps during milder conditions.

The estimated cost for the materials and labor associated with this project is approximately \$63,020. While this investment would eliminate the consumption of approximately 4,507 gallons of used oil annually, it would also introduce an estimated additional electricity consumption of 36,144 kWh per year to power the new heat pump units.

From a greenhouse gas perspective, this measure offers a substantial reduction, estimated at 37.16 metric tons of carbon dioxide equivalent (MTCO₂e) annually. However, a detailed financial analysis indicates that the energy cost savings from reduced oil consumption outweigh the increased electricity expenses, resulting in a negative return on investment.

It is also important to note that the increased electrical load from the additional heat pump units may necessitate upgrades to the facility's existing electrical infrastructure. A qualified electrical contractor should assess the current capacity to ensure it can accommodate the additional demand.

Recommendation: While this measure significantly reduces greenhouse gas emissions, the current financial analysis does not support its implementation due to the increased operational costs. The substantial upfront investment and ongoing electricity expenses outweigh the savings from eliminating used oil consumption, even with the benefit of free fuel. If greenhouse gas reduction is a primary organizational goal, and financial considerations are secondary, this measure warrants further consideration. Further consideration should include thoroughly assessing the existing electrical infrastructure to ensure it can meet the added electrical load.

Energy And Water Efficiency Measures (EWEM) Evaluated But Not Recommended

Energy And Water Efficiency Measure (EWEM) Description	Initial Cost (\$\$)	Electricity Savings (kWh)	Used Oil Savings (Gal)	Water/ Sewer Savings (kGal)	Annual Utility Savings (\$\$)	Simple Pay Back (Years)	EUL (years)	SIR	ROI	Owner % Energy Savings	Projected GHG Emissions Reduction MTCO2e	kBTU Savings
Integrate additional Mini-Split Heat Pumps into the existing used oil heating system and use furnace for backup heat when the outside air temperature is below 25° .	\$63,020	-36,144	4,507	0.000	-\$5,307	-11.9	15	-1.26	-2.26	53.9%	37.16	498,677

3.0 BACKGROUND

3.1 GENERAL PROPERTY DESCRIPTION

This energy audit encompasses a commercial property containing two primary structures at 8 White Spruce Road and 9 White Spruce Road in Bar Harbor, Maine. The parcel totals approximately 1 acre and was developed in 2015.

The Transfer Station is a one-story building with a gross building area of 3,560 square feet. The e-waste collection facility is a single-story, unconditioned structure with a negligible gross building area.

The site contact was James Smith.



Transfer facility exterior

3.2 EXISTING ENERGY AND WATER EFFICIENCY MEASURES

The following existing energy and water efficiency improvements were observed at the Property:

1. LED Interior Lighting
2. LED Exterior Lighting
3. Mini-Split Heat Pump
4. Double glazed windows

3.3 SPACE TYPE AND USAGE SCHEDULES

Transfer Station / Recycling Center

Phone: (207) 288-4464

Hours (excluding holidays)

Summer (June 1 through September 30)

Monday, Tuesday, Wednesday and Friday - 7:00 AM to 3:45 PM

Thursday - 7:00 AM to 11:45 AM

Saturday - 8:00 AM to 11:45 AM

Sunday - CLOSED
Holidays - See link below

Winter (October 1 through May 31)
Monday, Tuesday, Wednesday and Friday - 8:00 AM to 3:45 PM
Thursday - 8:00 AM to 11:45 AM
Saturday - 8:00 AM to 11:45 AM
Sunday - CLOSED
Holidays - See link below

Transfer Station / Recycling Center Holiday and Shut-Down Schedule 2025
Holiday / Shut-Down Schedule 2025



e-Waste collection facility



Transfer facility exterior



Transfer facility exterior

4.0 UTILITY ANALYSIS

The following utility analysis covers the period of May 2023 through April 2024. Electricity consumption is based on bills obtained from the property owner. Used oil or water consumption history was not provided. Used oil and water consumption show below was estimated.

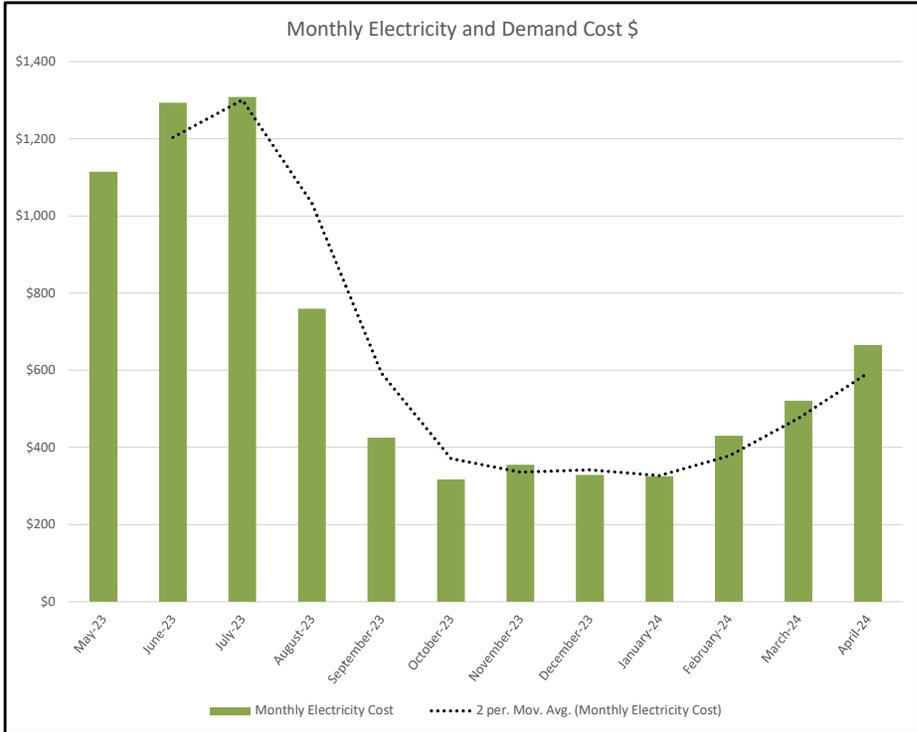
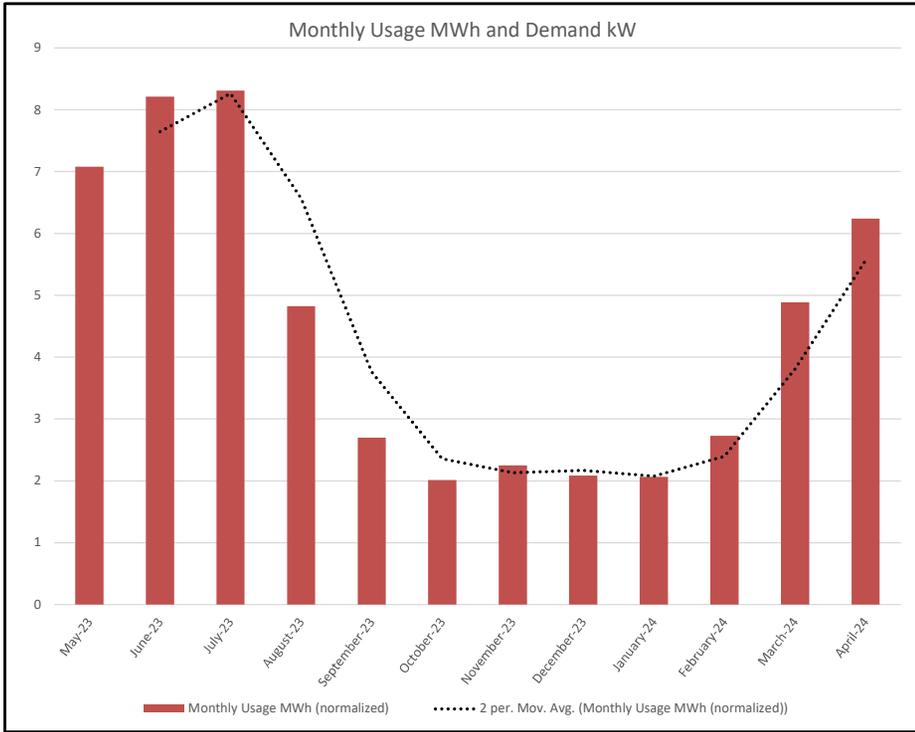
4.1 UTILITY PROVIDERS

Utility Type	Utility Provider Name
Electricity	Constellation NewEnergy
Water	Town of Bar Harbor
Sewage Disposal/Treatment	Town of Bar Harbor

4.1.1 ELECTRICITY

The chart below shows the monthly consumption and cost of electricity for the Property. The cost per kWh is calculated in the fourth column. The bottom row shows the annual electrical energy consumption and cost for the Property.

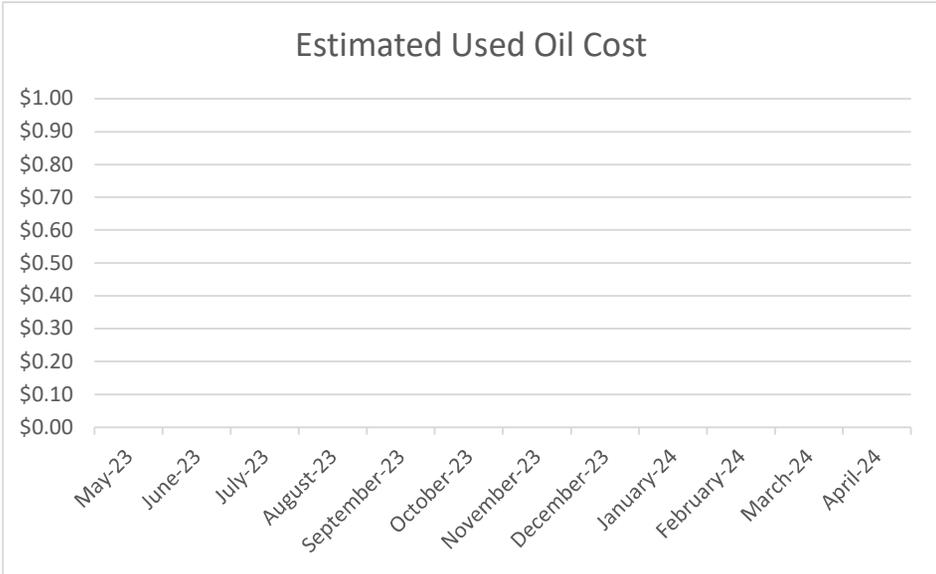
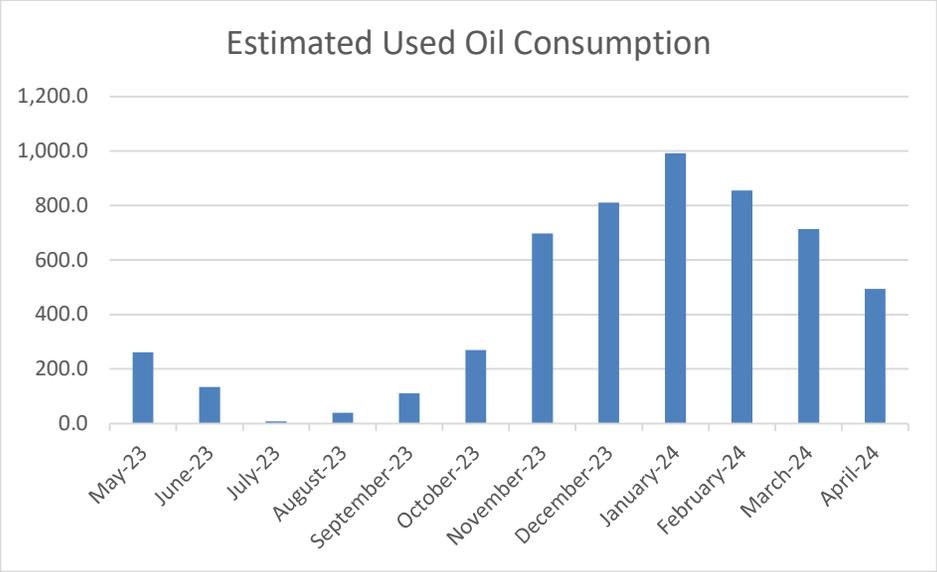
Billing Month & Year	Monthly Electricity Usage (kWh)	Monthly Electricity Cost	Cost per kWh	kBTU Usage (kWh x 3.41)
May-23	7,080	\$1,115	\$0.16	24,158
June-23	8,215	\$1,293	\$0.16	28,031
July-23	8,311	\$1,308	\$0.16	28,358
August-23	4,825	\$760	\$0.16	16,464
September-23	2,701	\$425	\$0.16	9,216
October-23	2,013	\$317	\$0.16	6,869
November-23	2,253	\$355	\$0.16	7,688
December-23	2,086	\$328	\$0.16	7,118
January-24	2,066	\$325	\$0.16	7,049
February-24	2,732	\$430	\$0.16	9,322
March-24	4,885	\$521	\$0.11	16,668
April-24	6,241	\$665	\$0.11	21,295
Annual Electricity Usage & Cost:	53,408	\$7,842	\$0.15	182,236



4.1.2 USED OIL

The chart below shows the monthly consumption and cost of the #2 Fuel Oil for the Property. The cost per Gal is calculated in the fourth column. The bottom row shows the annual Fuel Oil consumption and cost for the Property.

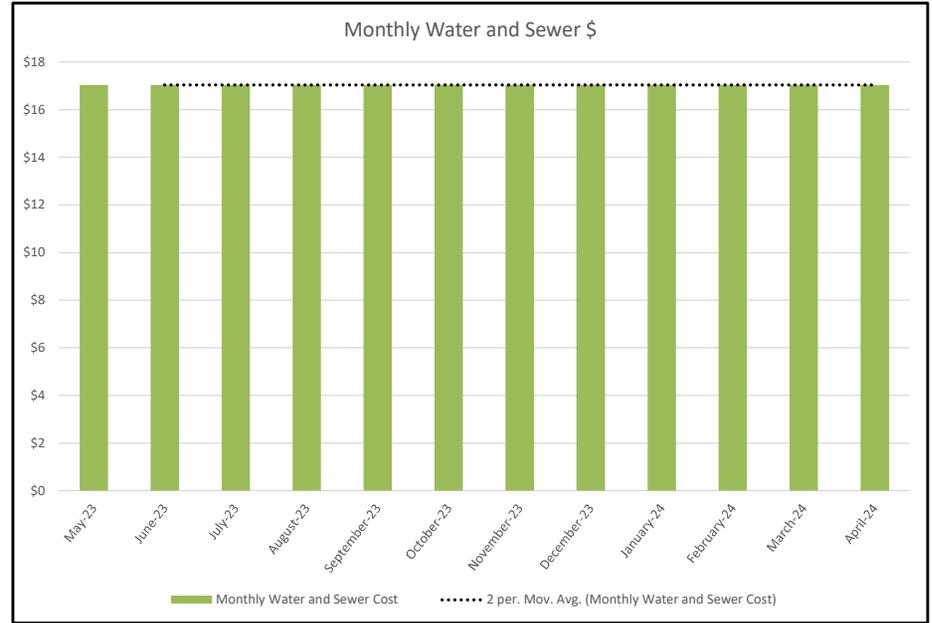
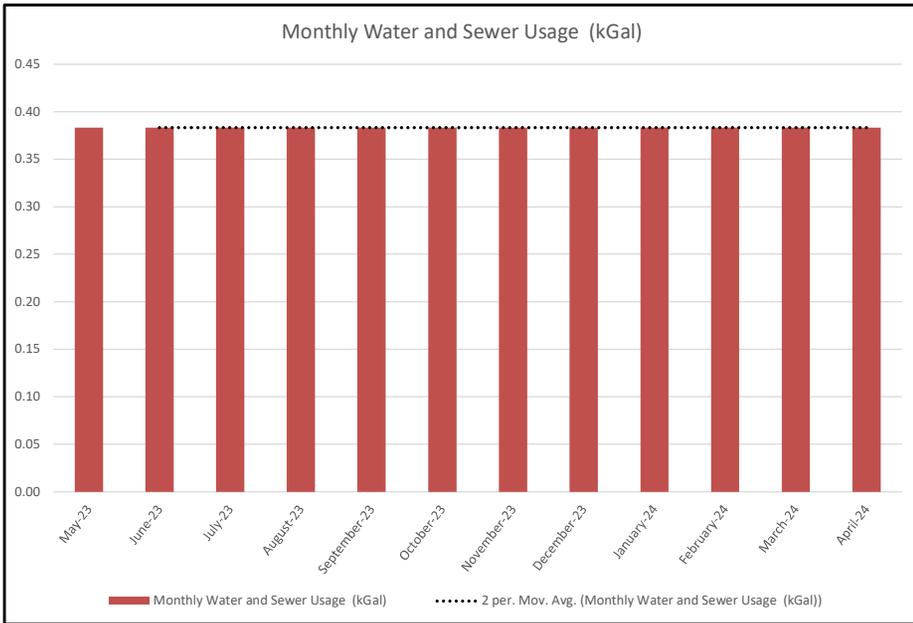
Billing Month & Year	Monthly Fuel Oil Consumption (Gal)	Monthly Fuel Oil Cost	Cost per Gal	kBTU Usage (Gal x 138,874)
May-23	260.5	\$0.00	\$0.00	35,954.1
June-23	133.5	\$0.00	\$0.00	18,421.1
July-23	8.3	\$0.00	\$0.00	1,147.9
August-23	40.3	\$0.00	\$0.00	5,566.4
September-23	110.6	\$0.00	\$0.00	15,258.8
October-23	270.6	\$0.00	\$0.00	37,340.3
November-23	697.9	\$0.00	\$0.00	96,307.2
December-23	811.3	\$0.00	\$0.00	111,955.9
January-24	992.4	\$0.00	\$0.00	136,950.5
February-24	856.1	\$0.00	\$0.00	118,139.5
March-24	713.0	\$0.00	\$0.00	98,397.3
April-24	493.6	\$0.00	\$0.00	68,117.9
Annual Used Oil Delivery (Gal) and Cost:	5,388.1	\$0.00	\$0.00	743,557



4.1.3 WATER AND SEWER

The chart below shows the monthly consumption and cost of the water and sewer for the Property. The cost per kGal is calculated in the far-right column. The bottom row shows the annual water and sewer consumption and cost for the Property.

Billing Month & Year	Monthly Water and Sewer Usage (kGal)	Monthly Water and Sewer Cost	Cost per kGal
May-23	0.38	\$17	\$44.46
June-23	0.38	\$17	\$44.46
July-23	0.38	\$17	\$44.46
August-23	0.38	\$17	\$44.46
September-23	0.38	\$17	\$44.46
October-23	0.38	\$17	\$44.46
November-23	0.38	\$17	\$44.46
December-23	0.38	\$17	\$44.46
January-24	0.38	\$17	\$44.46
February-24	0.38	\$17	\$44.46
March-24	0.38	\$17	\$44.46
April-24	0.38	\$17	\$44.46
Annual Water and Sewer Usage & Cost:	4.60	\$204	\$44.36



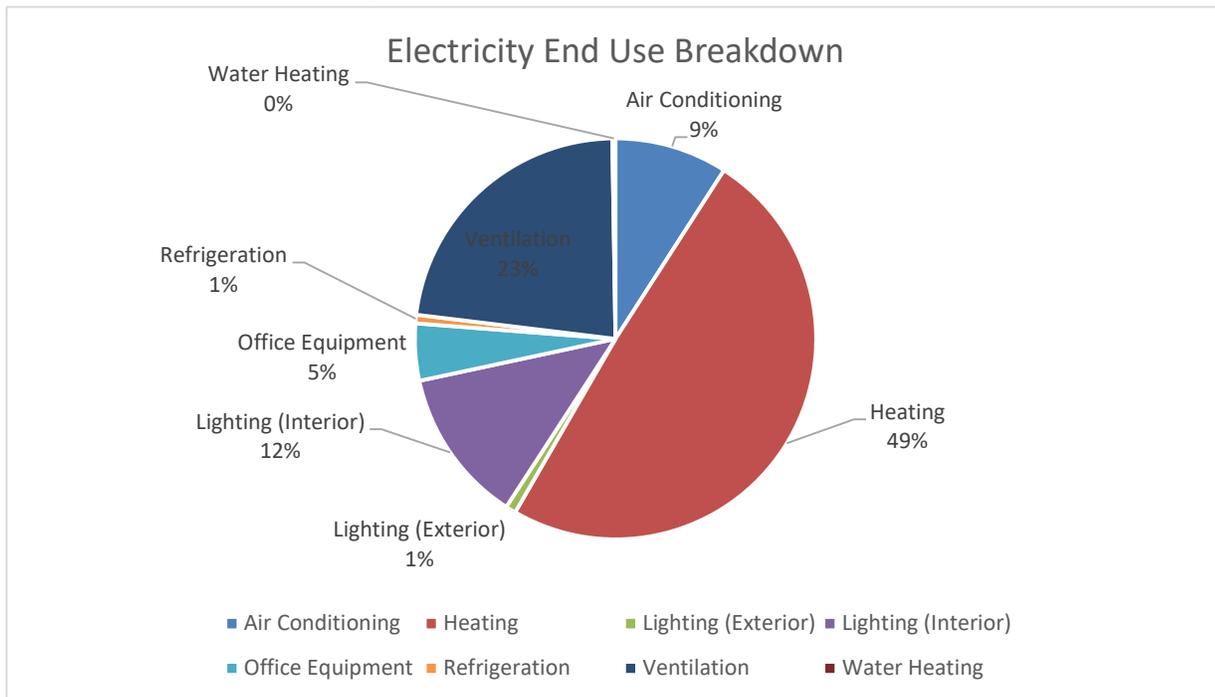
4.2 ENERGY END USE ANALYSIS

The following table shows the estimated end use analysis for all energy utilities on the Property.

End Use	Input Energy Units		Combined Energy Use	
	kWh	Gal Used Oil	kBtu	%
Air Conditioning	4,859	-	16,581	2%
Heating	26,298	5,388	833,289	90%
Lighting (Exterior)	438	-	1,495	0%
Lighting (Interior)	6,661	-	22,730	2%
Office Equipment	2,462	-	8,399	1%
Refrigeration	362	-	1,235	0%
Ventilation	12,194	-	41,609	4%
Water Heating	133	-	454	0%
Total Estimated	53,408	5,388	925,791	100%
Historical Billing	53,408	-	182,236	
Percent of Actual	100.0%	0.0%	508.0%	
Total per ft^2	15.0	1.5	260.1	

0

Electricity End-Use Breakdown



4.3 ENERGY & WATER BENCHMARKING

The buildings associated with this report are not eligible for an Energy Star Score; therefore, these properties have not been benchmarked in Energy Star Portfolio Manager.

5.0 BUILDING SYSTEMS

5.1 ENVELOPE

The following table shows the building envelope components that were observed at the Property.

Building Component	Description	Condition
Foundation	Slab-on-grade	Good
Framing	Steel Framed	Good
Exterior Cladding	Sheet metal	Good
Roof	Pitched metal	Good
Windows	Vinyl-framed with double pane glazing	Good
Exterior Doors	N/A	Good
Attic Insulation	Fiberglass Batts	Good

5.2 LIGHTING

The following tables provide an inventory of observed lighting fixtures, lamp type, and wattage.

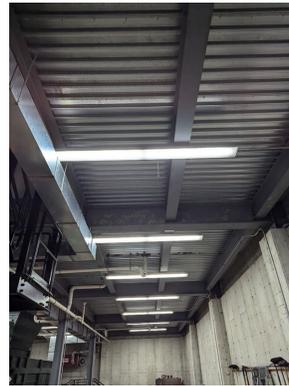
Lighting Audit

Area of Building	Exitsting Fixture	Total # Fixures	Bulbs Per Fixture	Total # of Bulbs	LED Equivalent Wattage	Current kWh Usage	kWh Usage w/ LED	kWh Saved Per Year	Cost Per kWh	Current Annual Op Cost	Annual Cost Using LEDs	Savings	Cost to Install Lighting	Pay back
Interior Ceiling Lights	1B 50W LED	24	1	24	0	2808	0	0	0.15	\$412	\$0	\$0	\$0	-
E Waste Recycling	2B 96W 8' T12 Electronic	3	2	6	0	1348	36	1312	0.15	\$198	\$5	\$193	\$430	2.2
Scale House	1B 32W 4' T8	1	1	1	11	75	26	49	0.15	\$11	\$4	\$7	\$9	1.2
Transfer Station Interior	3B 32W 4' T8	9	3	27	11	2022	695	1327	0.15	\$297	\$102	\$195	\$233	1.2
Transfer Station Interior	1B 25W LED	1	1	1	0	59	0	0	0.15	\$9	\$0	\$0	\$0	-
Exterior Lights	1B 20W LED	2	1	2	0	350	0	0	0.15	\$51	\$0	\$0	\$0	-
						6,661	757	2,688		\$ 978	\$ 111	\$ 395	\$ 672	1.70

Lighting Photographs



Transfer facility exterior



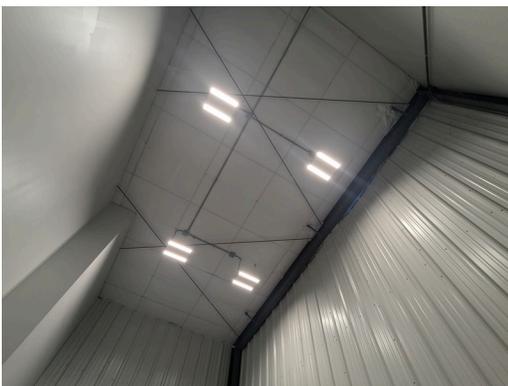
Transfer facility interior lighting



Transfer facility exterior



Transfer facility interior lighting and shell



Transfer facility interior shell and lighting

5.3 BUILDING MECHANICAL SYSTEMS

The primary heating system for this facility is a 200 MBH used-oil furnace.

The heating and cooling system consist of a mini-split heat pump system with a 2-ton exterior unit and two interior units rated at 1.5 and 0.5-tons.

Domestic hot water is produced by one 2.4-kW electric, tank-less point-of-use style water heater located under the bathroom sink.

Building Mechanical System Photographs



Transfer facility used oil furnace



Transfer facility used oil furnace



Transfer facility mini-split exterior condensing unit



Transfer facility mini-split interior fan coil unit



Transfer facility mini-split interior fan coil unit



Transfer facility electric point of use domestic water heater

5.4 APPLIANCES

The only appliances at this facility is a refrigerator. Details can be found in the table below.

Appliance Photographs



Transfer facility refrigerator

5.5 LAUNDRY EQUIPMENT

There are no laundry systems on the Property.

HVAC & Mechanical Equipment

Department	Location or Unit Address	Equipment Description	Manufacturer	Model #	Serial #	YEAR of Manufacture	EUL	RUL	Quantity	Heating Fuel	Heat Output Capacity	Heating Efficiency	Efficiency Units	Cooling Type	Cooling Capacity (Tons)	Efficiency	Efficiency Units	Notes
Public Works	Transfer Station	Used Oil Furnace	Clean Burn	CB-2500		2015	20	10	1	Used Oil	200,000 Btu/hr	80%	TE					
Public Works	Transfer Station	Mini-Split Heat Pump - Exterior Unit	Mitsubishi	MXZ-2C20NAHZZ	64P01648	2015	14	4	2	Electricity	22,000 Btu/hr	3.62	COP	DX	1.67	12.2	EER	
Public Works	Transfer Station	Mini-Split Heat Pump - Interior Unit	Mitsubishi	MSZ-FH06NA	7006157	2015	14	4	1	Electricity	8,700 Btu/hr	4.07	COP	DX	0.5	33.1	SEER	19 EER 13.5 HSPF 4.68 COP @ 47° F & 3.46 COP @ 17° F
Public Works	Transfer Station	Mini-Split Heat Pump - Interior Unit	Mitsubishi	MSZ-FH15NA	6002237 T	2015	14	4	1	Electricity	15,000 Btu/hr	3.625	COP	DX	1.5	22	SEER	12.5 EER 12 HSPF 4.06 COP @ 47° F & 3.19 COP @ 17° F
Public Works	Transfer Station	Electric baseboard		8' Long		2015	25	15	2	Electricity	2.0 kW	1	COP					

Domestic Water Heating

Department	Building or Asset	Type	Manufacturer	Model #	Serial #	YEAR of Manufacture	EUL	RUL	Quantity	Fuel (electric, natural gas, etc.)	Power
Public Works	Transfer Station	Electric Tankless Water Heater	Eemax	SP2412	2619640	2018	15	8	1	Electricity	2.4 kW

Refrigerators

Location	Manufacturer	Model #	Serial #	YEAR of Manufacture	EUL	RUL	Quantity	Capacity	Freezer Location	Ice Maker?	Door Seal Condition	Annual Usage (kWh)	Energy Star?
Transfer Station	Vissani	MDTF18WHR		2021	10	6	1	18	Top	No	Good	362	No

6.0 RECOMMENDED EWEMS

The Recommended EWEMs table found at the beginning of the report identifies the measures that should be considered for further evaluation or implementation. This section describes each Recommended EWEM in further detail.

6.1 No/Low-Cost EWEMS

AEI has identified *two* no-cost/low-cost EWEMs for this Property. This includes recommended measures for which the total individual cost is less than or equal to \$1,000.

EWEM #1 - RETROFIT INTERIOR LIGHTING WITH ENERGY STAR CERTIFIED LEDs

Existing Condition: This measure recommends retrofitting 13 existing light fixtures containing 34 linear fluorescent tube lamps with new Energy Star-certified LED fixtures or lamps. The current fluorescent lighting system exhibits inefficient energy consumption and can be significantly improved by transitioning to modern LED technology.

LED lighting offers a significantly higher lumen-per-watt ratio than traditional fluorescent lighting. LED fixtures consume considerably less energy for the same light output, which results in substantial energy savings. Additionally, LED lamps have a significantly longer lifespan, reducing the frequency of replacements and associated maintenance costs.

The retrofit should prioritize Energy Star-certified LED products to ensure optimal energy efficiency and product quality. The selection of LED fixtures or lamps should be based on the existing fixture types and the desired light output, color temperature, and distribution to maintain or improve the existing lighting quality.

Benefits:

- **Significant Energy Savings:** Reduced electricity consumption due to the higher lumen-per-watt efficiency of LEDs.
- **Reduced Operating Costs:** Maintenance costs will be reduced due to the longer LED lifespans, leading to less frequent replacement intervals.
- **Improved Lighting Quality:** Consistent light output, improved color rendering, and reduced flicker.
- **Extended Lifespan:** LEDs offer a significantly longer lifespan than fluorescent lamps, minimizing replacement frequency.
- **Reduced Environmental Impact:** Lower energy consumption translates to reduced greenhouse gas emissions.

Total Estimated Cost (including labor and materials): \$671

Estimated Annual Savings: \$395

Estimated Annual Operational & Maintenance (O&M) Savings: The extended lifespan of LED lamps will significantly reduce replacement and maintenance costs over time.

Operational Changes for Staff: None required.

Implementation Impact to Occupants: The retrofit will occur in common areas and on-site during regular business hours. Minimal disruption to occupants is expected.

Available Rebates or Incentives:

- Efficiency Maine offers the 2025 Discounted Screw-In LEDs Program. This program provides discounted screw-in LEDs at retailers and distributors across the state. While this program focuses on screw-in bulbs, it is worth investigating whether any common area fixtures can utilize these discounted bulbs.
- Efficiency Maine offers the 2025 Commercial and Industrial (C&I) Custom Program - Electric Projects. This program is for electrical energy efficiency projects that result in at least 36,000 kWh of annual reductions in grid-supplied energy. If the total project savings meet the minimum requirements, this project may qualify for custom incentives. Performing a detailed energy savings calculation to determine eligibility is highly recommended.
- This project may also qualify for the 2025 Commercial and Industrial (C&I) Custom Program - Electric Projects because this program funds electrical energy efficiency projects.
- It is advised to review the Program Opportunity Notice (guidelines and project application) found on the Efficiency Maine website.

More information about available incentives and funding opportunities can be found in Section 8.1 State Level Incentives .

EWEM #2 - LOW FLOW TOILETS

Existing Condition: The toilet at this facility has an advertised flush rate of 1.6 GPF. It is recommended to replace existing toilet with new WaterSense labeled 0.8 GPF toilets. With new lower flush toilets, less water will be consumed per flush saving on water usage and associated costs.

Total estimated cost including labor and material: \$281

Estimated O&M savings: None

Operational changes of staff required to support the measure: None

Available rebates or incentives for this measure: More information about available incentives and funding opportunities can be found in Section 8.1 State Level Incentives .

Implementation impact to occupants: Minimal; Installation should take less than 30 minutes per toilet

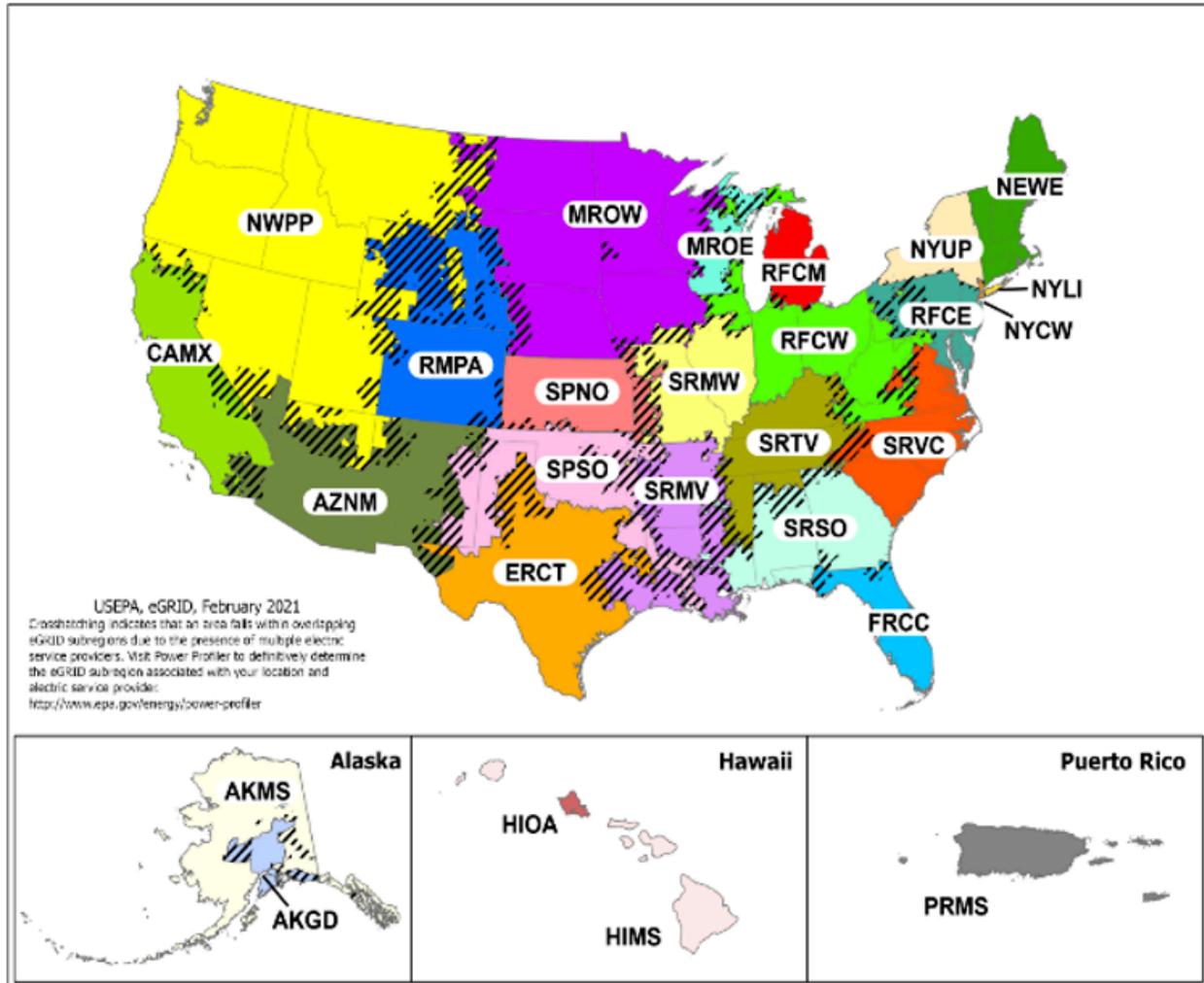
6.2 CAPITAL COST EWEMS

AEI has identified *zero (0)* capital cost EWEMs for this Property. This includes recommended measures for which the total individual cost is greater than \$1,000.

7.0 GHG EMISSIONS ANALYSIS

7.1 EGRID SUBREGIONS

A map of the the eGRID subregions and the equivalent CO₂ emissions factor used in the GHG emissions analysis calculations are shown below.



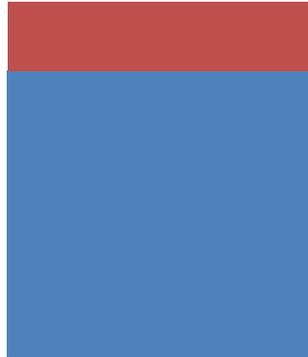
eGRID Subregion Name	eGRID Acronym	CO ₂ e Emissions Factor (lb/MWh)
NPCC New England	NEWE	541.1
National Average	N/A	775.2

7.2 BASELINE SCOPE 1 AND SCOPE 2 GHG EMISSIONS

The following charts show the existing Scope 1 and Scope 2 emissions calculated for the Property using the above equivalent CO₂ emissions factor for the applicable region.

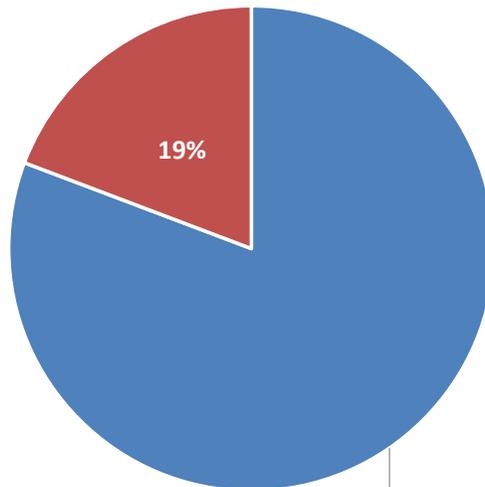
Baseline Scope 1 and Scope 2 Emissions (MTCO₂e/yr)

100



■ Scope 1 Emissions (MTCO₂e)

Baseline Scope 1 and Scope 2 Emissions (%)

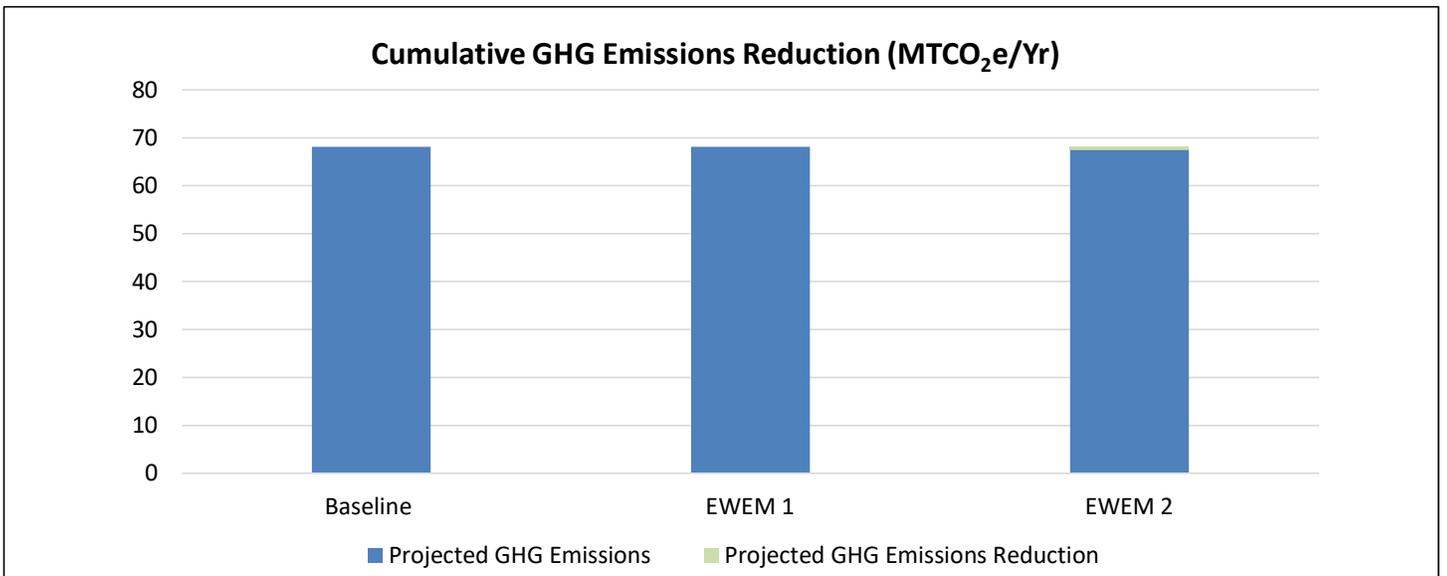
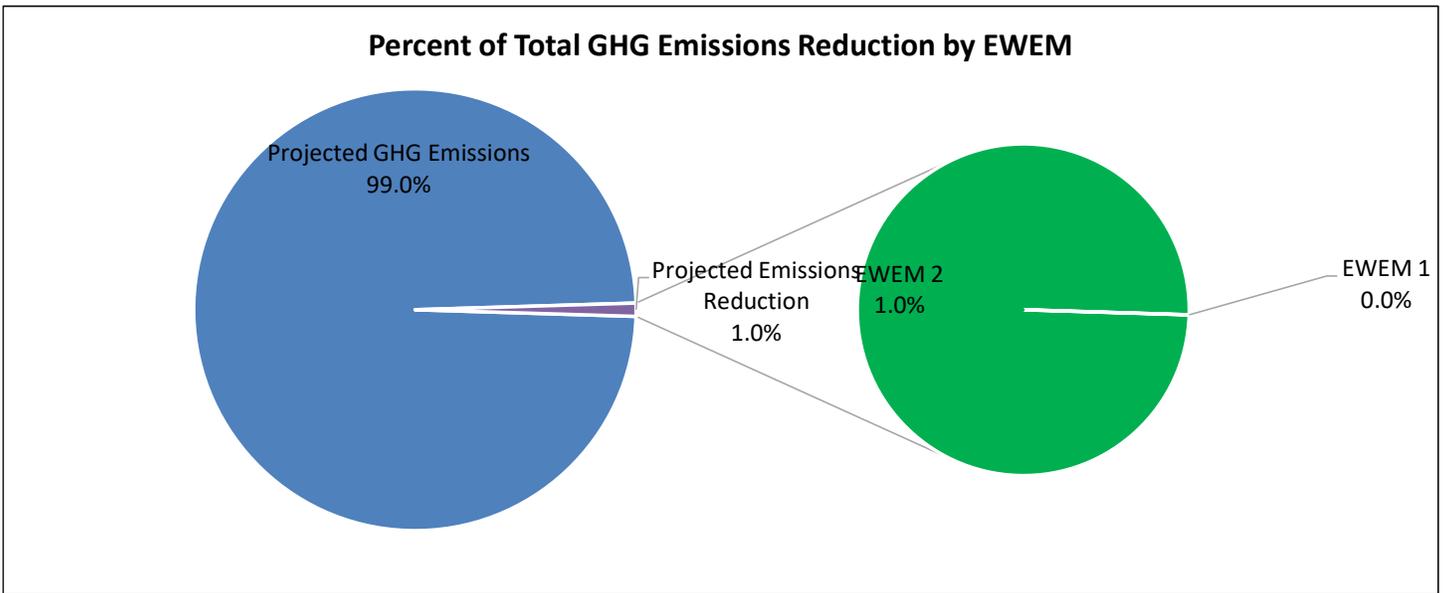


■ Scope 1 Emissions (MTCO₂e) ■ Scope 2 Emissions (MTCO₂e)

7.3 GHG EMISSIONS REDUCTION PER EWEM

The following table and chart show the equivalent CO₂ emissions reduction per EWEM and the cumulative reduction of the combined EWEMs. The cumulative reduction chart assumes each EWEM will be implemented.

EWEM #	Energy And Water Efficiency Measures (EWEM) Summary Description	Projected GHG Emissions (MTCO ₂ e)	Emissions Reduction (MTCO ₂ e)	Emissions Reduction (%)
Baseline	Current GHG emissions	68.13		
EWEM 1	0.00	67.47	0.00	0.0%
EWEM 2	Retrofit 13 Interior Linear Fluorescent T12 and T8 Lighting Fixtures with 34 DLC Certified Linear LED Lamps.		0.66	1.0%
Total	Projected GHG emissions and reduction from baseline	67.47	0.66	1.0%



8.0 STATE LEVEL INCENTIVES

The following section will identify available incentives across the country and how they may or may not apply to the property and the recommendations made in this report. AEI will provide a summary of available energy efficiency incentives. The best resource to stay current on active energy efficiency incentives is at: dsireusa.org.

8.1 FEDERAL INCENTIVES

2025 Technical Assistance

(Existing Buildings)

Administrator: Efficiency Maine

Apply Services

IncentiFind can connect you to our expert who can explain why this incentive may be right for your project.

Description

Efficiency Maine offers incentives for Technical Assistance Studies to those customers that have already identified a project but need additional outside assistance to move it forward. Customers are guided through the process of developing the energy savings analyses and project cost estimates necessary for our Custom Program application. Efficiency Maine may provide up to 50% of the cost of an approved Technical Assistance Study up to \$20,000.

Eligible Scope

Efficiency Maine's Commercial and Industrial (C&I) Custom Program provides funding for Technical Assistance (TA) Studies to help program participants lay the necessary groundwork for project investment. The Program incentive is 50% of the approved TA Study cost up to \$25,000. Eligible TA Studies include investment-grade analysis of large and more complex projects, as well as development of systems designs and preparation of construction bid documents for targeted measures. Additionally, Efficiency Maine will support interconnection applications and studies required for battery projects that are applying for an incentive through the Energy Storage System (ESS) Program Opportunity Notice

Funded TA Studies must focus on complex projects that require engineering to proceed, and that are found likely to be eligible for Custom Program or ESS Program funding. All award decisions will be made by Efficiency Maine based on a review of potential project eligibility, alignment with Program goals, and a preliminary cost effectiveness screening. Examples of potentially eligible studies include: custom process improvement upgrades, large or complex beneficial electrification or HVAC projects, and battery system designs.

[C&I Custom Program Technical Assistance guidelines](#)

Estimated Funds

Min Funds

Varies by Project.

Max Funds

- Efficiency Maine may provide 50% of the cost of an approved Technical Assistance Study up to \$25,000.
- \$200,000 is being initially allocated to this program for the remainder of the 2024 fiscal year (July 1, 2023 through June 30, 2024).

Next Steps

1. The customer and/or TA Provider provide Efficiency Maine preliminary estimates of measure costs and energy impacts in order to determine cost effectiveness. These preliminary estimates could also come from an Efficiency Maine scoping audit.
2. If cost effectiveness found positive, customer and TA Provider submit a TA Study application.
3. Coordinate a TA Study kick off meeting between the customer, TA Provider, and Efficiency Maine in order to clearly define the study scope, and agreed upon deliverables.
4. The Efficiency Maine representative reviews the TA Study application package and, if applicable, recommends award of the TA incentive to the Efficiency Maine Program Manager. The Efficiency Maine representative communicates the final decision to the customer and the TA Provider.
5. The customer authorizes the TA Provider to proceed with the study. The Efficiency Maine representative remains engaged with the process to address questions and provide input, guidance, and assistance as necessary. The TA provider must inform Efficiency Maine of any changes in the TA Study scope of work as soon as they are known.
6. Once the TA Study is complete, it is submitted to Efficiency Maine for review.
7. Efficiency Maine reviews the study to confirm the agreed-upon deliverables are completed.
8. Efficiency Maine requests clarification or elaboration, if appropriate.
9. Efficiency Maine issues TA incentive award.

2025 Commercial and Industrial (C&I) Custom Program - Thermal Projects

(Existing Buildings)

Administrator: Efficiency Maine

Apply Services

IncentiFind can help you APPLY to this incentive. Our fee is 30% of the total rebate value.

Description

Maine businesses, nonprofits, institutions, and governments are eligible for funding for a variety of thermal energy efficiency projects through Efficiency Maine's Commercial and Industrial (C&I) Custom Program. Funding is available for thermal projects that involve a measure (or set of measures) that reduces the consumption of natural gas, oil, biomass, and other fuels.

Awarded projects have included heat recovery measures, boiler upgrades and controls, and HVAC controls. For a list of previously awarded custom projects, [click here](#).

Eligible Scope

Eligible Projects

- A measure (or set of such measures) at a single facility or campus that reduces inefficient energy use (or increases efficient energy use), leading to fuel savings related to producing thermal energy for end uses such as heating, steam production and hot water.
- Projects must save a minimum of 400 MMBtu annually (4,000 therms of piped natural gas).

Ineligible Projects

- Measures that are eligible for [Efficiency Maine's C&I Prescriptive Incentive Program](#).
- Projects that have a benefit-to-cost ratio less than 1, as per Efficiency Maine's Total benefit-cost test.
- Projects that have a simple payback of under one year (after factoring in the Efficiency Maine incentive).
- Projects that involve measures required by state or federal law or local building or energy codes, or projects that are deemed by Efficiency Maine to represent standard industry practice measures.
- Projects for which the customer (or its affiliate) has made binding commitments to proceed prior to the official award of funding under the Custom Program.
- Measures that rely solely on human behavior changes or facility maintenance.
- Feasibility studies.
- Fundraising seed money for projects to be completed and funded subsequently.

Estimated Funds

Min Funds

Varies by project.

Max Funds

- Funding levels will range from a minimum of \$5,000 to a maximum of \$1,000,000 per facility up to 50% of the total project costs.
- Incentive awards are capped based on the magnitude of the validated annual reduction in grid-supplied energy (kWh/year) and/or fuel savings (MMBtu/year). Incentives will not exceed \$0.30 per kWh of validated annual reduction in grid supplied electricity plus \$25 per MMBtu of annual fuel savings.

Next Steps

1. To get started, review the [Thermal Project Application Cover Sheet](#), and [Program Opportunity Notice](#) (guidelines and project application).

2025 Lighting Solutions

Lighting can be a significant operating expense in existing buildings. Maine businesses can reduce lighting expenses by upgrading to high-efficiency fixtures and installing lighting controls. Lighting control technologies allow building managers to carefully tailor lighting conditions to the requirements of specific spaces. These upgrades can also enhance productivity and improve aesthetics. Efficiency Maine also incentivizes high-efficiency screw-in LEDs at participating distributors across Maine. [Click here](#) to learn more about the Discounted Screw-in LED Program.

Eligible Scope

Solutions

Interior LED Lighting

- LED Retrofit Kits
- New LED Fixtures
- Refrigerated Case Fixtures and Controls
- Lighting Controls

Exterior LED Lighting

- LED Retrofit Kits
- New LED Fixture

Distributor Pathway Interior Lighting

- High/Low Bay Lamps (Mogul Screw Base)
- Tubular Lamps: T-8 • T8 U-Bend • T-5 • T-5HO replacement

Distributor Pathway Exterior Lighting

- Outdoor LED Mogul Screw-Base Replacement Lamp

Estimated Funds

Min Funds

Varies by Project

Max Funds

Incentives

Interior LED Lighting

- \$0.28 per kWh of first year savings up to 65% of measure cost

Exterior LED Lighting

- \$0.28 per kWh of first year savings up to 65% of measure cost

Small Business LED Lighting

- 75% of total measure cost for qualifying interior and exterior lighting
- Small business customers must have an electric account labeled “Small General Service” (SGS), “General Service” (GS), or “Medium General Service” (MGS) with an average monthly electrical demand under 50kW
- [Click here](#) for more information on small businesses

Distributor Pathway Interior Lighting

- Incentive depends on the specific distributor
- [Click here](#) to find a participating distributor

Distributor Pathway Exterior Lighting

- Incentive depends on the specific distributor
- [Click here](#) to find a participating distributor

Next Steps

1. Work with an Efficiency Maine Qualified Partner to install high-efficiency lighting. [Click here](#) to find a Qualified Partner working near you. or If you work with a contractor that is not yet a Qualified Partner, urge your contractor to find out more information [here](#).
2. Efficiency Maine reserves the right to require pre-approval for any Program application proposing an incentive of **\$5,000 or more**.

3. As part of the project approval process, you will accept the C&I Prescriptive Program's Terms and Conditions.

2025 Water Heating Solutions

Maine businesses can reduce water heating costs by upgrading to high-efficiency water heating systems. Efficiency Maine offers incentives for heat pump water heaters and ECM circulator pumps. These upgrades can reduce water heating costs and provide hot water when you need it.

Eligible Scope

Eligible Equipment

Light Duty Commercial Heat Pump Water Heaters

- Light duty heat pumps can be used for small commercial or residential facilities that have some hot water demand. These typically have a tank with up to 50 gallon storage capacity.
- Tens of thousands of Mainers own these heat pump water heaters. They're popular because they produce lots of hot water, can save more than \$5,000 over their 10-year life, and help to dehumidify.

Heavy Duty Commercial Heat Pump Water Heaters

- Heavy duty commercial heat pump water heaters can offer hot water needs for commercial settings, including hospitals, hotels, motels, multifamily buildings, long-term care facilities, and offices.

ECM Circulator Pumps

- Businesses can reduce electric costs with the installation of ECM circulator pumps. Forced hot water ("hydronic") heating systems use circulator pumps to move heated water from boilers to radiators and back. These pumps run whenever a thermostat calls for heat. Traditional circulator pumps run at one fixed speed and use some electricity to magnetize their rotor. Electronically commutated motor (ECM) circulator pumps can modulate their speed and use permanent magnet motors that don't require any electricity to have magnetic properties. ECM circulator pumps cost less to buy and less to operate than traditional circulator pumps.
- [Click here](#) to learn more about this technology and [click here](#) to find a participating distributor.

Estimated Funds

Min Funds

Varies by equipment type.

Max Funds

Incentives

Light Duty Commercial Heat Pump Water Heaters

- [Click here](#) for information on incentives for light duty heat pump water heaters.

Heavy Duty Commercial Heat Pump Water Heaters

- See the table below for information on incentives for both retrofit and new construction projects.
- Incentives are limited to hospitals, hotels, motels, multifamily buildings, long-term care facilities, and offices.

Heat Pump Water Heater Integrated Storage || Minimum Qualifying Efficiency Criteria || Incentive Amount

- 80 gallons || ENERGY STAR® || \$1,800 per unit
- 120 gallons || ENERGY STAR® || \$3,000 per unit
- Split-system with minimum of 80 gallons || ENERGY STAR® || \$3,000 per unit

ECM Circulator Pumps

- [Click here](#) for information on incentives for ECM circulator pumps.

Next Steps

1. [Click here](#) to find a Qualified Partner working near you. If you work with a contractor that is not yet a Qualified Partner, urge your contractor to find out more information [here](#).

2025 Commercial Heating, Ventilation, and Air Conditioning (HVAC) Solutions

Businesses can save money, increase equipment reliability, and create more comfortable and productive workplaces by making energy-efficient choices when installing, renovating, or replacing HVAC equipment. By upgrading to an efficient electric HVAC system, a business can move towards beneficial electrification, or the transition of electric systems in a way that reduces overall emissions and energy costs.

Incentives for these HVAC systems are designed to encourage the installation of primary whole building heating and cooling systems. Installing electric heat pump equipment can help a business's operating systems become fossil fuel free.

[Click here](#) for more information on incentives for HVAC solutions.

Eligible Scope

Eligible Equipment

Heat Pump Solutions

- Mini-Split Heat Pumps (Air-to-Air) Heat Pump Rooftop Units (RTUs)
- Packaged Terminal Heat Pumps
- Vertical Packaged Terminal Heat Pumps
- Variable Refrigerant Flow (VRF) Systems
- Water Source Heat Pumps

Other Electric HVAC Solutions

- Demand Control Ventilation
- Electronically Commutated Motor (ECM) Circulator Pumps
- Energy Recovery Ventilator (ERV) Systems
- Variable-Frequency Drive (VFD) Systems

Propane and Natural Gas Solutions

- Biomass Boilers and Furnaces
- Commercial Boilers and Furnaces
- Commercial Boiler Controls and Ancillary Equipment (retrofit only)**

Estimated Funds

Min Funds

Varies by equipment type.

Max Funds

Heat Pump Incentives

Mini-Split Heat Pumps

- Single-zone - \$1,000
- Single-zone air source heat pumps

Small Business Mini-Split Heat Pump Retrofits

- Single-zone - \$1,400
- Single-zone air source heat pumps
- [Click here](#) for more information on eligibility.

Multifamily Mini-Split Heat Pumps

- 1 to 3 Zones: \$6.00/sq. ft.

Variable Refrigerant Flow (VRF) Systems

- \$8.00/sq. ft. single-phase without heat recovery
- \$10.00/sq. ft. without heat recovery
- \$12.00/sq. ft. with heat recovery

Heat Pump Rooftop Units (RTUs)

- 60 to <= 120 MBH: \$168 per MBH
- 121 to <= 450 MBH: \$125 per MBH

Packaged Terminal Heat Pumps

- < 7,000 Btu/h: \$430 per unit
- >= 7,000 Btu/h and =15,000: \$450 per unit
- > 15,000 Btu/h: \$480 per unit

Vertical Packaged Terminal Heat Pumps

- < 7,000 Btu/h: \$700 per unit
- >= 7,000 Btu/h and =15,000: \$850 per unit
- > 15,000 Btu/h: \$1,000 per unit

Other Electric HVAC Incentives

ECM Circulator Pumps

- ECM Circulator Pump Instant Discount: \$100
- [Click here](#) for more information.

Energy Recovery Ventilator (ERV) Systems

- Sensible heat recovery = 55% to< 65% - \$1.50/CFM
- Sensible heat recovery = 65% to< 75% - \$1.75/CFM
- Sensible heat recovery = 75% to< 85% - \$2.00/CFM
- Sensible heat recovery = 85% - \$2.25/CFM

Variable-Frequency Drive (VFD) Systems

- \$400 - \$2,300 per unit (incentive varies by system horsepower)

Biomass Boilers and Furnaces

- [Click here](#) for information on incentives for these systems.

Next Steps

1. Work with an Efficiency Maine Qualified Partner to install high-efficiency cooling solutions. [Click here](#) to find a Qualified Partner working near you. Or If you work with a contractor that is not yet a Qualified Partner, urge your contractor to find out more information [here](#).
2. Efficiency Maine reserves the right to require pre-approval for any Program application proposing an incentive of **\$5,000 or more**.
3. As part of the project approval process, you will accept the C&I Prescriptive Program's [Terms and Conditions](#).

2025 Discounted Screw-In LEDs Program

(Existing Buildings)

Administrator: Efficiency Maine

Description

Efficiency Maine discounts screw-in LEDs at retailers and distributors across the state. There's no paperwork for customers to file and no waiting for rebate checks.

Eligible Scope

Eligibility

- All customers are eligible as long as the bulbs are installed in Maine.
- Customers buying more than 20 bulbs at a retail location need to ask for a bulk-purchase waiver.
- Customers buying from a distributor must provide a Maine installation address as well as other information.
- Bulbs purchased from a distributor may be subject to inspection.
- It is not necessary to work with a registered contractor.
- Discounts are available on LEDs of various bulb shapes, bases, and wattages.
- Eligible products include A-line bulbs, spotlights, floodlights, and candelabra bulbs.

Resources

- [Find a participating retailer](#)
- [Find participating distributors](#)
- [Learn about business incentives for other types of lighting](#)
- [Learn more about screw-in bulbs](#)
- [Read Retail LED Upgrade Case Studies](#)

Estimated Funds

Min Funds

Incentive depends on the specific distributor.

Max Funds

Incentive depends on the specific distributor.

Next Steps

1. Discounts are available on LEDs of various bulb shapes, bases, and wattages.
 - > To find a participating retailer, [click here](#).
 - > To find a participating distributor, [click here](#).
 - > To find the best prices on retail bulbs, [click here](#).

2025 Commercial and Industrial (C&I) Custom Program - Electric Projects

(Existing Buildings)

Administrator: Efficiency Maine

Apply Services

IncentiFind can help you APPLY to this incentive. Our fee is 30% of the total rebate value.

Description

Maine businesses, nonprofits, institutions and governments are eligible for funding for electrical energy efficiency projects through Efficiency Maine's Commercial and Industrial (C&I) Custom Program.

Eligible Scope

Maine businesses, nonprofits, institutions and governments are eligible for funding for electrical energy efficiency projects through Efficiency Maine's Commercial and Industrial (C&I) Custom Program.

Awarded projects include process improvements, HVAC controls, installation of VFDs on motors, chiller and refrigeration enhancements, and pump upgrades. For a list of previously awarded custom projects, [click here](#).

Eligible Projects

- A measure (or set of measures) at a single facility or campus that increases the end-use electrical efficiency, resulting in at least 36,000 kWh of annual reductions in grid-supplied energy when compared to a baseline.

Ineligible Projects

- Measures that are eligible for Efficiency Maine's C&I Prescriptive Incentive Program. This includes the majority of lighting measures, with a few specific exceptions.
- Projects that have a benefit-to-cost ratio less than 1, as per Efficiency Maine's benefit-cost test.
- Projects that have a simple payback under one year (after factoring in the Efficiency Maine incentive).
- Projects that involve measures required by state or federal law or local building or energy codes, or are deemed by Efficiency Maine to be standard industry practice measures.
- Projects for which the customer (or its affiliate) has made binding commitments to proceed prior to the official award of funding under this Custom Program.
- Measures that rely solely on human behavior changes or facility maintenance.
- Projects for customers that do not have an account with a Maine electric utility.
- Feasibility studies.
- Power quality, power factor, and power conditioning projects.
- Projects that do not result in an overall kWh use reduction. An exception is made for measures that are intended to expand facility use or production and will result in an overall kWh use reduction when compared to an alternative code-compliant, baseline alternative.
- Fundraising seed money for projects to be completed and funded subsequently.

Custom Program's Terms and Conditions

Program Opportunity Notice (guidelines and project application).

Estimated Funds

Min Funds

Varies by project.

Max Funds

Funding Overview

- Funding levels will range from a minimum of \$10,000 to a maximum of \$1,000,000 per facility up to 50% of the total project costs.

- Projects with an estimated incentive over \$200,000 will require a formal contract with the Efficiency Maine Trust.
- Projects with an estimated incentive below \$200,000 require that participants agree to the Custom Program's Terms and Conditions.
- For retrofits of existing equipment, applicants must provide a minimum 50% cost share for the project.
- Incentive awards are capped based on the magnitude of the validated annual reduction in grid-supplied energy (kWh/year). Incentives will not exceed \$0.28 per kWh of validated annual reduction in grid supplied energy.
- Efficiency Maine will consider new applications until the available program funding is exhausted.

Next Steps

1. To get started, review the Electric Project Application Cover Sheet and review the Program Opportunity Notice (guidelines and project application).

2025 Commercial and Industrial (C&I) Custom Program - Energy Storage System Projects

(Existing Buildings)

Administrator: Efficiency Maine

Apply Services

IncentiFind can connect you to our expert who can explain why this incentive may be right for your project.

Description

Efficiency Maine's Energy Storage System (ESS) Program Opportunity Notice (PON) offers performance based incentives for the deployment of energy storage systems during summer peak demand conditions.

All demand metered customers (commercial, nonprofits, institutions and government) are eligible to participate.

Eligible Scope

Efficiency Maine's Energy Storage System (ESS) Program Opportunity Notice (PON) offers performance based incentives for the deployment of energy storage systems during summer peak demand conditions.

All demand metered customers (commercial, nonprofits, institutions and government) are eligible to participate.

Eligible Projects

Eligible projects must be interconnected behind the facility utility meter and must be located in Maine with a Maine electric utility account. Awarded incentives will be based on the amount of facility electric load (kW) that the proposed system can reduce during summer peak demand hours. Additionally, awarded systems must:

- Be approved by the Trust prior to installation.
- Be at least 20 kW.
- Maintain a minimum 80% round-trip efficiency.
- Be able to collect and transmit 15-minute interval data.
- Carry a 10-year manufacturer warranty.
- Be UL-listed or certified by another nationally recognized testing lab.

Ineligible Projects

- Systems configured for grid export.
- Participants without the required interval metering and data transmission capability.
- Facilities not located in Maine or served by a Maine electric utility.
- Residential and small business customers.

Estimated Funds

Min Funds

Varies by project.

Max Funds

Funding Overview

Incentives awarded through this PON will be paid each fall for 5 years following an annual evaluation of the project's performance. Additionally, incentives will be subject to the following limitations:

- \$200 per kW of validated reduction in grid supplied power.
- Incentives will be on average load reduction achieved for fifteen (15) dispatches during summer peak demand conditions.
- Incentive awards will be at least \$4,000 and not more than \$600,000 per year, per project, for 5 years.
- All projects awarded will require a formal contract with Efficiency Maine.

Next Steps

1. Check your eligibility.
2. To get started, please review the [Program Opportunity Notice](#) (application guidelines, award criteria, and limitations).

2025 Commercial and Industrial (C&I) Custom Program - Custom Distributed Generation Projects

(Existing Buildings)

Administrator: Efficiency Maine

Apply Services

IncentiFind can help you APPLY to this incentive. Our fee is 30% of the total rebate value.

Description

Maine businesses, nonprofits, institutions and governments are eligible for funding for distributed generation projects through Efficiency Maine's Commercial and Industrial (C&I) Custom Program. Distributed generation projects are behind-the-meter generation projects that reduce the consumption of grid-supplied electricity and meet Efficiency Maine's cost-benefit analysis.

Combined heat & power (CHP) projects are the most common type of distributed generation project completed through the C&I Custom Program.

Eligible Scope

Maine businesses, nonprofits, institutions and governments are eligible for funding for distributed generation projects through Efficiency Maine's Commercial and Industrial (C&I) Custom Program. Distributed generation projects are behind-the-meter generation projects that reduce the consumption of grid-supplied electricity and meet Efficiency Maine's cost-benefit analysis.

Combined heat & power (CHP) projects are the most common type of distributed generation project completed through the C&I Custom Program.

Eligible Projects

- A distributed generation project that reduces on-site electricity consumption from the grid.
- A distributed generation project must have an operating efficiency of 60% or greater.
- The project must result in kWh reductions of at least 36,000 kWh annually
- The project also must include a meter dedicated to providing 15-minute interval energy data to Efficiency Maine.

Ineligible Projects

- Projects that have a benefit-to-cost ratio less than 1, as per Efficiency Maine's benefit-cost test.

- Projects that have a simple payback under one year (after factoring in the Efficiency Maine incentive).
- Projects that export electricity to the grid (net metering) or to other customers.
- Projects for which the customer (or its affiliate) has made binding commitments to proceed prior to the official award of funding under this Custom Program.
- Projects for customers that do not have an account with a Maine electric utility.
- Feasibility studies.
- Power quality, power factor, and power conditioning projects.
- Fundraising seed money for projects to be completed and funded subsequently.

Estimated Funds

Min Funds

Varies by project.

Max Funds

Funding Overview

- Funding levels will range from a minimum of \$10,000 to a maximum of \$1,000,000 per facility up to 50% of the total project costs.
- Projects of all sizes will require a formal contract with the Efficiency Maine Trust.
- Applicants must provide a minimum 50% cost share for the project.
- Incentive awards are capped based on the magnitude of the validated annual reduction in grid-supplied energy (kWh/year). Incentives will not exceed \$0.28 per kWh of validated annual reduction in grid-supplied energy.
- Efficiency Maine will consider new applications until the available program funding is exhausted.

Next Steps

1. Check your eligibility.
2. To get started, please review the following:
 - [Distributed Generation Project Application Cover Sheet](#)
 - [Program Opportunity Notice](#) (project application and guidelines)
 - [Distributed Generation Technical Analysis Checklist](#) for those projects involving a Technical Assistance (TA) study
 - [Distributed Generation Project Application Checklist](#)

8.2 FEDERAL INCENTIVES

179D - Energy Efficient Commercial Buildings Deduction

Section 179D of the U.S. Internal Revenue Code provides a tax deduction for investments in energy-efficient improvements made to commercial buildings. The provision is designed to incentivize property owners and tenants to enhance the energy performance of their properties, thereby promoting energy conservation and reducing utility costs. The deduction can be claimed by the owner of the commercial building or, if they are not the taxpayer, the tenant who makes the qualifying improvements. The deduction applies to improvements made to buildings used for commercial purposes, including retail spaces, office buildings, and industrial facilities. The deduction is allowed under Internal Revenue Code (IRC) Section 179D. It was expanded under the Inflation Reduction Act of 2022.

1. Types of Improvements:

- The interior lighting systems, the heating, cooling, ventilation, and hot water systems, or the building envelope
- It must be certified as being installed as part of a plan to reduce the total annual energy and power costs for the above systems by 25% or more in comparison to a reference building meeting the minimum requirements of ASHRAE Reference Standard 90.1.

2. Amount of Deduction

- The cost of the installed property, or;
- The savings per square foot calculated as:
 - \$0.50 per square foot for a building with 25% energy savings
 - **Plus \$0.02 per square foot for each percentage point of energy savings above 25%**
 - **Up to a maximum of \$1.00 per square foot for a building with 50% energy savings**
- Expenses deducted in the prior 3 years (4 years for an allocated deduction) reduce the maximum deduction before computing the current-year deduction.
- Prevailing wage and apprenticeship bonus: Beginning in 2023, if local prevailing wages are paid and apprenticeship requirements are met, an increased maximum deduction applies. The maximum amount increases to **5 times** the savings per square foot amount.

3. Certification Process:

- **Qualified Professional:** A certification must be provided by a qualified professional confirming that the improvements meet the required energy savings.

- **Documentation:** Detailed documentation and calculations are required to substantiate the claim, including energy modeling and performance testing.

4. Benefits:

- **Tax Savings:** The deduction can significantly reduce a business's tax liability, offering a financial incentive to invest in energy-efficient upgrades.
- **Operational Savings:** Beyond tax benefits, energy-efficient improvements often lead to reduced utility bills and lower operational costs.

5. Legislative Context:

- **Expiration and Extensions:** Now that the IRC 179D provision is permanent, there is an inflation adjustment for the deduction for property placed in service after December 31, 2020.

6. What can the property do?

- AEI can connect the property with partners qualified to complete 179D certification if requested.

2025 National Electric Vehicle Infrastructure (NEVI) Formula Program

(Existing Buildings)

Administrator: U.S. Department of Energy

Apply Services

IncentiFind can connect you to our expert who can explain why this incentive may be right for your project.

Description

The U.S. Department of Transportation's (DOT) Federal Highway Administration (FHWA) NEVI Formula Program will provide funding to states to strategically deploy electric vehicle (EV) charging stations and to establish an interconnected network to facilitate data collection, access, and reliability.

Eligible Scope

The NEVI Formula Program will provide funding to states to strategically deploy electric vehicle (EV) charging stations and to establish an interconnected network to facilitate data collection, access, and reliability.

Eligibility:

- EV charging stations must be non-proprietary, allow for open-access payment methods, be publicly available or available to authorized commercial motor vehicle operators from more than one company, and be located along designated FHWA Alternative Fuel Corridors (AFCs).
- If a state and DOT determine that all AFCs in the state have been fully developed, then the state can propose alternative public locations and roads for EV charging station installation.

FHWA must distribute the NEVI Program Formula Program funds made available each fiscal year (FY) through FY 2026, so that each state receives an amount equal to the state FHWA funding formula determined by 23 U.S. Code 104

Project Eligibility:

- NEVI Formula Program funds are restricted to projects that are directly related to EV charging infrastructure that is open to the public or to authorized commercial motor vehicle (see 23 CFR 658.5) operators from more than one company.
- Publicly accessible means the equipment is available to the public without restriction. A station that is not maintained or restricts access only to customers, tenants, employees, or other consumers is not publicly accessible.
- Please note that while hydrogen, propane, and natural gas fueling infrastructure are not eligible under the NEVI Formula Program, these additional fuels are eligible under the Corridor Charging Grants and the Community Charging Grants (23 U.S.C. § 151).
- Paragraph (2) under the Highway Infrastructure Program heading in title VIII of division J of BIL.

NEVI Formula Program Q&A

The National Electric Vehicle Infrastructure (NEVI) Formula Program Guidance

For additional information, see the FHWA NEVI website and the Joint Office website.

Estimated Funds

Min Funds

Varies by project

Max Funds

Funding is available for up to 80% of eligible project costs, including:

- The acquisition, installation, and network connection of EV charging stations to facilitate data collection, access, and reliability;
- Proper operation and maintenance of EV charging stations; and,
- Long-term EV charging station data sharing.

Next Steps

1. To receive funding, states must submit plans FHWA and the [Joint Office of Energy and Transportation](#) for review and public posting annually, describing how the state intends to distribute NEVI funds.

2025 Electric Vehicle (EV) Charging Reliability Grants

(New Construction)

Administrator: [U.S. Department of Energy](#)

Apply Services

IncentiFind can help you APPLY to this Incentive. Our fee is 30% of the incentive value.

Description

The U.S. Department of Transportation's (DOT) Federal Highway Administration (FHWA) EV Charger Reliability and Accessibility Accelerator offers funding for the repair and replacement of existing, non-operational publicly accessible Level 2 and direct current fast charging (DCFC) stations.

Eligible Scope

Eligible applicants include State departments of transportation and local governments.

For more information, see the DOT FHWA EV Charger [Reliability and Accessibility Accelerator](#) website.

Reference [Public Law 117-58](#)

Estimated Funds

Min Funds

Varies by Project

Max Funds

Funding is available for up to 80% of eligible project costs.

Next Steps

1. For more information, see the DOT FHWA EV Charger [Reliability and Accessibility Accelerator](#) website.

2025 Community Alternative Fuel Infrastructure Grants

(Existing Buildings)

Administrator: U.S. Department of Transportation

Apply Services

IncentiFind can help you APPLY to this incentive. Our fee is 30% of the total incentive received.

Description

The U.S. Department of Transportation (DOT) shall establish a competitive grant program to fill gaps in publicly accessible electric vehicle charging and hydrogen, propane, and natural gas fueling infrastructure in community locations, such as a parking facilities, public schools, public parks, or along public roads.

Eligible Scope

Eligibility

The U.S. Department of Transportation (DOT) shall establish a competitive grant program to fill gaps in publicly accessible electric vehicle charging and hydrogen, propane, and natural gas fueling infrastructure in community locations, such as a parking facilities, public schools, public parks, or along public roads.

Funding of up to 80% of project costs will be available for both development-phase planning activities and the acquisition and installation of charging or alternative fueling infrastructure. Five percent of the grant fund awarded may be used for educational and community engagement activities to develop and implement education programs through partnerships with schools, community organizations, and vehicle dealerships to support the use of zero-emission vehicles and associated infrastructure.

DOT must prioritize projects that expand access to charging and alternative fueling infrastructure within rural areas, low- and moderate-income neighborhoods, and communities with limited parking space or a high ratio of multi-unit dwellings to single-family homes. Eligible entities include states, metropolitan planning organizations, local governments, political subdivisions, and tribal governments. Additional funding eligibility and considerations will apply.

Estimated Funds

Min Funds

Varies by Project.

Max Funds

Funding of up to 80% of project costs will be available for both development-phase planning activities and the acquisition and installation of charging or alternative fueling infrastructure.

Next Steps

1. For more information, please contact 866.835.5322.

2025 Clean Renewable Energy Bonds (CREBs)

(Existing Buildings)

Administrator: U.S. Internal Revenue Service (IRS)

Apply Services

IncentiFind can connect you to our expert who can explain why this incentive may be right for your project.

Description

The Clean Renewable Energy Bonds (CREBs) Federal Loan Program is a Tribal Government, Municipal Utility, Rural Electric Cooperative, Local Government, and State Government program for those who have energy efficient improvements made with the following: Landfill Gas, Wind, Biomass, Hydroelectric, Geothermal Electric, Municipal Solid Waste, Hydrokinetic Power, Anaerobic Digestion, Tidal Energy, Wave Energy, Ocean Thermal, Solar Thermal Electric, and Photovoltaic.

Eligible Scope

The Clean Renewable Energy Bonds (CREBs) Federal Loan Program is for:

- Tribal Government,
- Municipal Utility,
- Rural Electric Cooperative,
- Local Government, and
- State Governments

The program is eligible for the above entities if they have or plan have energy efficient improvements made with the following:

- Landfill Gas,
- Wind,
- Biomass,
- Hydroelectric,
- Geothermal Electric,
- Municipal Solid Waste,
- Hydrokinetic Power,
- Anaerobic Digestion,
- Tidal Energy,
- Wave Energy,
- Ocean Thermal, -Solar Thermal Electric, and

- Photovoltaic (PV).

For more details use the following links and contact below:

- http://www.irs.gov/irb/2007-14_IRB/ar17.html
- <https://www.treasurydirect.gov/GA-SL/SLGS/selectCREBDate.htm>
- <https://www.treasurydirect.gov/GA-SL/SLGS/selectQTCDDate.htm>
- <http://www.ustreas.gov/press/releases/tg333.htm>

Estimated Funds

Min Funds

Varies by project

Max Funds

Varies by project

Next Steps

1. **Contact for more information:**
Public Information - IRS
U.S. Internal Revenue Service
1111 Constitution Avenue, N.W.
Washington, DC 20224
Phone: (800) 829-1040
Web Site: <http://www.irs.gov>

8.3 LOAN PROGRAMS

C-PACE (Commercial Property Assessed Clean Energy)

C-PACE (Commercial Property Assessed Clean Energy) is a financing program that helps commercial property owners fund energy-efficient and renewable energy improvements to their buildings. Through C-PACE, property owners can access long-term financing for upgrades like solar panels, energy-efficient HVAC systems, lighting, and water conservation measures.

The unique feature of C-PACE is that the financing is repaid through a property tax assessment, which is tied to the property rather than the owner. This allows for longer repayment terms and can often result in positive cash flow for property owners, as the energy savings from the upgrades can exceed the cost of the financing.

C-PACE programs are available in many states in the U.S., and they aim to promote environmental sustainability while helping businesses lower energy costs.

C-PACE is not available everywhere and is administered by independent programs in each state.

The State of Maine offers a C-PACE program. <https://copace.com/>

This program can be used to finance recommendations made in this report and can also include energy/water audit costs.

Energy Savings Performance Contracting (ESPC)

ESPC is a financing mechanism that enables organizations to implement energy efficiency improvements without upfront capital costs. The ESPC process includes the following:

1. **Partnership with an Energy Service Company (ESCO):** The organization partners with an ESCO, which conducts an energy audit to identify potential energy-saving projects, such as lighting upgrades, HVAC improvements, or renewable energy installations.
2. **Project Financing:** The ESCO typically arranges financing for the project, so the organization doesn't need to invest its own funds. The project is paid for over time through the energy savings it generates.
3. **Guaranteed Savings:** The ESCO guarantees that the energy savings will be sufficient to cover the project costs. If the savings fall short, the ESCO is responsible for making up the difference.
4. **Implementation and Monitoring:** The ESCO manages the project from start to finish, including design, installation, and maintenance. The ESCO also monitors the energy performance to ensure that savings are realized as expected.
5. **Contract Duration:** ESPC contracts typically last several years, during which the energy savings are used to pay off the project costs. After the contract period, the organization benefits from reduced energy costs without additional payments.

Overall, ESPC allows organizations to improve energy efficiency, reduce utility costs, and minimize environmental impact without needing upfront capital, while transferring the performance risk to the ESCO.

AEI is not an ESCO and does not offer this program as a service.

9.0 SIGNATURES OF PARTICIPATING PROFESSIONALS

AEI Consultants performed this ASHRAE Level II Energy Audit for the Property located at 8 White Spruce Road, Bar Harbor, Hancock County, Maine, in conformance with the scope and limitations of ASHRAE *Procedures for Commercial Building Energy Audits, Second Edition*, ANSI/ASHRAE/ACCA Standard 211-2018, *Standard for Commercial Building Energy Audits*.

Prepared By:



Joshua Martin
Report Author

Reviewed By:



Craig Burcham, CEM
Senior Author



Joshua Martin
Site Assessor

APPENDIX A

PROPERTY PHOTOGRAPHS



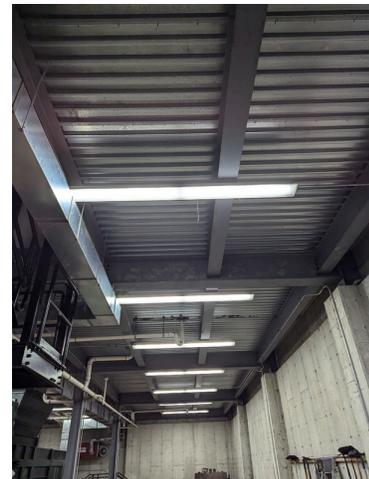
1. e-Waste collection facility



2. e-Waste collection facility



3. Transfer facility exterior



4. Transfer facility interior lighting



5. Transfer facility used oil furnace



6. Transfer facility used oil furnace



7. Transfer facility mini-split exterior condensing unit



8. Transfer facility exterior



9. Transfer facility mini-split interior fan coil unit



10. Transfer facility interior lighting and shell



11. Transfer facility refrigerator



12. Transfer facility mini-split interior fan coil unit



13. Transfer facility 0.5 GPM bathroom sink



14. Transfer facility 1.6 GPF toilet



15. Transfer facility electric point of use domestic water heater



16. Transfer facility interior shell and lighting



17. Transfer facility exterior

APPENDIX B

SUPPORTING DOCUMENTATION

ABBREVIATIONS AND ACRONYMS

AC	Air Conditioning	kBTU	Kilo-British Thermal Unit
AEI	AEI Consultants	kGal	Kilogallons
ALTA	American Land Title Association	kW	Kilowatt
APN	Assessor's Parcel Number	kWh	Kilowatt hour
ASHRAE	American Society of Heating, Refrigerating and Air-Conditioning Engineers	LED	Light Emitting Diode
BTU	British Thermal Unit	M	Model
CH	Clubhouse	MBH	1,000 BTUs/hour
DHW	Domestic Hot Water	O	Occupied
ECM	Energy Conservation Measure	OFC	Office
EEM	Energy Efficiency Measures	OSHA	Occupational Safety and Health Administration
EUI	Energy Use Intensity	PCA	Property Condition Assessment
EUL	Estimated Useful Life	PCR	Property Condition Report
EWEM	Energy and Water Efficiency Measures	ROI	Return On Investment
F	Fahrenheit	RP	Responsible Party
FCU	Fan Coil Unit	SEDI	Statement of Energy Design Intent
Gal	Gallon	SF	Square Footage/Square Feet
GFA	Gross Floor Area	SIR	Savings to Investment Ratio
GPF	Gallons Per Flush	SP	Subject Property
GPM	Gallons Per Minute	SEP	Statement of Energy Performance
HUD	Department of Housing and Urban Development	V	Vacant
HVAC	Heating, Ventilation and Air Conditioning	ZAR	Zoning Analysis Report

ASHRAE Equipment Life Expectancy chart

ASHRAE is the industry organization that sets the standards and guidelines for most all HVAC-R equipment.
For additional info about ASHRAE the website is www.ashrae.org .

Equipment Item	Median Years	Equipment Item	Median Years	Equipment Item	Median Years
Air conditioners		Air terminals		Air-cooled condensers	20
Window unit	10	Diffusers, grilles, and registers	27	Evaporative condensers	20
Residential single or Split Package	15	Induction and fan coil units	20	Insulation	
Commercial through-the wall	15	VAV and double-duct boxes	20	Molded Blanket	20 24
Water-cooled package	15	Air washers	17	Pumps	
Heat Pumps		Ductwork	30	Base-mounted	20
Residential air-to-air	15	Dampers	20	Pipe-mounted	10
Commercial air-to-air	15	Fans		Sump and well	10
Commercial water-to-air	19	Centrifugal	25	Condensate	15
Roof-top air conditioners		Axial	20	Reciprocating engines	20
Single-zone	15	Propeller	15	Steam turbines	30
Multi-zone	15	Ventilating roof-mounted	20	Electric motors	18
Boilers, hot water (steam)		Coils		Motor starters	17
Steel water-tube	24 (30)	DX, water, or steam	20	Electric transformers	30
Steel fire-tube	25 (25)	Electric	15	Controls	
Cast iron	35 (30)	Heat Exchangers		Pneumatic	20
Electric	15	Shell-and-tube	24	Electric	16
Burners	21	Reciprocating compressors	20	Electronic	15
Furnaces		Packaged chillers		Valve actuators	
Gas- or oil-fired	18	Reciprocating	20	Hydraulic	15
Unit heaters		Centrifugal	23	Pneumatic	20
Gas or electric	13	Absorption	23	Self-contained	10
Hot water or steam	20	Cooling towers			
Radiant Heaters		Galvanized metal	20		
Electric	10	Wood	20		
Hot water or steam	25	Ceramic	34		

APPENDIX C

EWEM CALCULATION WORKSHEETS

Lighting Audit

Area of Building	Exitsting Fixture	Total # Fixures	Bulbs Per Fixture	Total # of Bulbs	LED Equivalent Wattage	Current kWh Usage	kWh Usage w/ LED	kWh Saved Per Year	Cost Per kWh	Current Annual Op Cost	Annual Cost Using LEDs	Savings	Cost to Install Lighting	Pay back
Interior Ceiling Lights	1B 50W LED	24	1	24	0	2808	0	0	0.15	\$412	\$0	\$0	\$0	-
E Waste Recycling	2B 96W 8' T12 Electronic	3	2	6	0	1348	36	1312	0.15	\$198	\$5	\$193	\$430	2.2
Scale House	1B 32W 4' T8	1	1	1	11	75	26	49	0.15	\$11	\$4	\$7	\$9	1.2
Transfer Station Interior	3B 32W 4' T8	9	3	27	11	2022	695	1327	0.15	\$297	\$102	\$195	\$233	1.2
Transfer Station Interior	1B 25W LED	1	1	1	0	59	0	0	0.15	\$9	\$0	\$0	\$0	-
Exterior Lights	1B 20W LED	2	1	2	0	350	0	0	0.15	\$51	\$0	\$0	\$0	-
						6,661	757	2,688		\$ 978	\$ 111	\$ 395	\$ 672	1.70

Integrate a Heat Pump Boiler into the existing propane boiler system and use propane boiler for backup heat when the outside air temperature is below 25 °.

Quantity of Existing Furnaces	1	Each
Heating Hours	2,985	Hours
Existing Furnace Fuel	Used Oil	Gal
Total Energy Consumption of Existing Furnace	5,388	Gal
Total Energy Consumption of Existing Furnace	743,557	kBTU
Existing Furnace Cost	\$0.00	
Existing Furnace Capacity	250,000	BTUH
Current Furnace Efficiency	80.0%	
Actual Heat Produced	4,310	Gal
New Mini-Split Heat Pump Efficiency	340.0%	
Energy Required to Produce Equivalent Heat with HP	174,955	kBTU
Energy Required to Produce Equivalent Heat with HP	51,274	kWh
# Hours backup heat is required	486	Hours
Proposed Backup Used Oil Consumption	881	Gal
Proposed Heat Pump Consumption	36,144	kWh
Energy Savings with High Eff Mini-Split Heat Pump	498,677	kBTU
Cost Per Gallon	\$0.00	\$\$\$ / Gal
Cost Per kWh	\$0.15	\$\$\$ / kWh
Annual Cost Savings	-\$5,307.49	Dollars
Number of Mini-Split Heat Pumps(s) to Replace with High Efficiency:	4	Each
Capacity of Replacement High Efficiency Mini-Split Heat Pumps	57	BTUH
Total Cost to Replace w/ 3.4 COP Efficient Mini-Split Heat Pump	\$63,019.56	Dollars
Payback to Replace if Mini-Split Heat Pumps are Relatively New	-11.87	Years

APPENDIX D

PROJECT TEAM



Joshua D. Martin

Senior Energy Engineer

EDUCATION

- Bachelor of Science in Mechanical Engineering with a Minor in Mathematical Sciences - Clemson University, 2009

CERTIFICATIONS

- Certified Energy Manager - Association of Energy Engineers, 2023
- Engineer In Training - South Carolina Board of Professional Engineers, 2009

SUMMARY OF PROFESSIONAL EXPERIENCE

Mr. Joshua D. Martin is a Senior Energy Engineer in the energy services division, distinguished as a Certified Energy Manager (C.E.M.) and Engineer in Training (E.I.T.). His robust background includes over 12 years of experience in energy efficiency engineering, project management, building commissioning, and sustainability consulting. Throughout his career, he has specialized in commercial building energy consulting, executing energy audits, conducting site visits, and identifying energy conservation measures (ECMs) across various sectors, including residential, commercial, multi-family, industrial, MUSH (Municipal, University, School, and Hospital), and agricultural.

Mr. Martin is passionate about helping clients accomplish their sustainability goals, qualify for green loan programs, and satisfy local building code requirements. More recently, Mr. Martin has worked with clients to help them achieve their greenhouse gas reduction goals through decarbonization and electrification studies.

PROJECT EXPERIENCE

Project experience for Mr. Martin includes:

- Project Management
- 50+ Multifamily Building Energy Efficiency Audits
- Fannie Mae and Freddy Mac Green Up program compliance
- Indoor Air Quality Measurement and Compliance for ASHRAE 62.1
- ASHRAE Level I & II Energy Audits for Commercial, Agricultural, and Industrial Facilities
- Building Commissioning and Retro-commissioning for Commercial and Industrial Facilities
- Energy Star Certifications for Residential and Commercial Facilities
- Measurement and Verification of Energy Efficiency Projects
- Energy Efficiency and Sustainability Consulting
- Greenhouse Gas Reduction Studies
- Energy Modeling
- Data Analysis

Mr. Martin has worked in the energy efficiency and sustainability services field since 2011. He is committed to advancing products, services, and ideas that reduce environmental impact and promote sustainability. He believes in contributing to a greener future without compromising resources for future generations.



Craig Burcham

Senior Engineer, Energy Services

EDUCATION

- Master of Business Administration, East Carolina University
- Bachelor of Science - Mechanical Engineering, Louisiana Tech University

CERTIFICATIONS

- Certified Energy Manager - Association of Energy Engineers - 20086
- Arkansas Licensed Professional Engineer - 22152
- South Carolina Licensed Professional Engineer - 39645

SUMMARY OF PROFESSIONAL EXPERIENCE

Mr. Burcham provides expertise in energy efficiency evaluations in several markets including industrial, commercial, and residential properties. He has more than ten years of experience developing guaranteed energy saving performance contracting projects for clients throughout the Southeast and Midwest United States. He also has three years of experience with large utility energy efficiency program execution as well as four years of experience performing single family residential pre-sale home inspections and energy assessments.

PROJECT EXPERIENCE

Project experience for Mr. Burcham includes:

- Lead developer on 18 performance contracting projects, \$90M in total project value
- 100+ ASHRAE Level 1, 2, 3 Energy Audits
- 1000+ single family residential home inspections and energy assessments