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FY2023 ANNUAL REPORT

The Efficiency Maine Trust (Efficiency Maine) is the independent, quasi-state agency established to plan and implement energy efficiency programs in Maine. Through its suite of programs, Efficiency Maine provides consumer information, marketing support, demonstration pilots, discounts, rebates, loans, and other initiatives to promote high-efficiency equipment and operations that help Maine's homes, businesses, and institutions reduce their energy costs and lower their greenhouse gas emissions. The result is job growth, better grid reliability, improved energy independence, a stronger local economy, and critical progress toward meeting the State's climate change goals. Efficiency Maine is governed by a Board of Trustees with oversight from the Maine Public Utilities Commission.

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Abbreviations/Acronyms

ACEEE	American Council for an Energy-Efficient Economy
ACP	Alternative Compliance Payment
AGI	Adjusted Gross Income
AMI	Advanced Metering Infrastructure
AMP	Arrearage Management Program
ARPA	American Rescue Plan Act
BEV	Battery Electric Vehicle
BIL	Bipartisan Infrastructure Law
C&I	Commercial and Industrial
C-PACE	Commercial Property Assessed Clean Energy
CAA	Community Action Agency
Cap Tag	Capacity Tag
CCF	Centum Cubic Feet
CFI	Charging and Fueling Infrastructure
CIP	Commercial and Industrial Prescriptive
CMP	Central Maine Power Company
CMR	Code of Maine Rules
CO_2e	Carbon Dioxide Equivalent
CSO	Capacity Supply Obligation
CSP	Curtailment Service Provider
DAC	Disadvantaged Community
DC	Direct Current
DEP	Maine Department of Environmental Protection
DER	Distributed Energy Resource
DERMS	Distributed Energy Resource Management System
DHHS	Department of Health and Human Services
DIY	Do-It-Yourself
DOE	U.S. Department of Energy
ECM	Electronically Commutated Motor
EERRF	Energy Efficiency and Renewable Resource Fund
EM&V	Evaluation, Measurement, and Verification
EPA	U.S. Environmental Protection Agency
EV	Electric Vehicle
EVSE	Electric Vehicle Supply Equipment
FCA	Forward Capacity Auction
FCM	Forward Capacity Market
FHWA	Federal Highway Administration
FON	Funding Opportunity Notice
FR	Free Ridership

FY	Fiscal Year
GEO	Governor's Energy Office
GGRF	Greenhouse Gas Reduction Fund
GHG	Greenhouse Gas
GOPIF	Governor's Office of Policy Innovation and the Future
GSL	General Service Lamp
HEAP	Home Energy Assistance Program
HESP	Home Energy Savings Program
HVAC	Heating, Ventilation, and Air Conditioning
IRA	Inflation Reduction Act
ISO-NE	Independent System Operator for New England
kW	Kilowatt(s)
kWh	Kilowatt-Hour(s)
LBE	Lead by Example
LD	Legislative Document
LED	Light-Emitting Diode
M&V	Measurement and Verification
MAAF	Maine Association of Agricultural Fairs
MACE	Maximum Achievable Cost-Effective
MaineDOT	Maine Department of Transportation
MaineHousing	Maine State Housing Authority
MJRP	Maine Jobs and Recovery Plan
MMBtu	Million British Thermal Unit(s)
MTI	Maine Technology Institute
MPRP	Maine Power Reliability Program
MRS	Maine Revised Statutes
MUBEC	Maine Uniform Building and Energy Code
MW	Megawatt(s)
MWh	Megawatt-hour(s)
NECEC	New England Clean Energy Connect
NEEP	Northeast Energy Efficiency Partnerships
NEVI	National EV Infrastructure
NTG	Net-to-Gross
NWA	Non-Wires Alternative
NWAC	NWA Coordinator
OPA	Office of the Public Advocate
PACE	Property Assessed Clean Energy
PACT	Program Administrator Cost Test
PCM	Phase-Change Material
PEVID	Plan for EV Infrastructure Deployment
PHEV	Plug-in Hybrid Electric Vehicle
PON	Program Opportunity Notice

PreK	Pre-Kindergarten
PUC	Public Utilities Commission (Maine)
QP	Qualified Partner
RFP	Request for Proposals
RGGI	Regional Greenhouse Gas Initiative
RRV	Residential Registered Vendor
RTU	Rooftop Unit
SBI	Small Business Initiative
SCADA	Supervisory Control and Data Acquisition
SLFRF	State and Local Fiscal Recovery Funds
SNAP	Supplemental Nutrition Assistance Program
SO	Spillover
T&D	Transmission and Distribution
T&ST	Transmission and Sub-Transmission
TA	Technical Assistance
TANF	Temporary Assistance for Needy Families
TESS	Transactive Energy Service System
TREC	Thermal Renewable Energy Credit
TRM	Technical Reference Manual
VRF	Variable Refrigerant Flow
VW	Volkswagen

Message from the Executive Director

The Efficiency Maine Trust ("the Trust" or "Efficiency Maine") made significant strides in Fiscal Year 2023 (FY2023) due in part to a once-in-a-generation investment by the federal government to support energy efficiency initiatives that the Trust was privileged to administer.

The Trust was allocated $77 million in federal funds that enabled it to deliver results across its residential, low-income, commercial, industrial, electric vehicle (EV), and other strategic initiatives. In FY2023, those federally-funded efforts included:

- Investing $6.3 million from the Maine Jobs and Recovery Plan (MJRP), the State's plan for deploying federal funds from the American Rescue Plan Act of 2021 (ARPA), to support weatherization upgrades in 867 low- and moderate-income homes.
- Investing $1.2 million from the MJRP to support 58 commercial and industrial projects for hospitality establishments, schools, small municipalities, and long-term care facilities.
- Investing $92,000, and awarding an additional $3.3 million, from the MJRP to fund high-speed Level 3 EV charging sites in Aroostook County, Penobscot County, and Washington County along the most traveled routes to the Crown of Maine and to the eastern border with New Brunswick, as well as Level 2 chargers throughout Maine's rural communities.
- Awarding nearly $5 million in National Electric Vehicle Infrastructure (NEVI) Program funds authorized by the federal Bipartisan Infrastructure Law (BIL) to support installation of new public, high-speed Level 3 EV chargers at locations such as grocery stores, shopping malls, and gas stations, in Bangor, Augusta, and along the stretch of U.S. Route 1 between Ellsworth and Freeport.

The Trust also set the stage for additional federal funds in the year ahead. The Inflation Reduction Act (IRA), passed in August 2022, allocates significant incentives for home energy efficiency and electrification projects and funding for a Greenhouse Gas Reduction Fund (GGRF) to finance a wide range of energy projects. During the fiscal year, the Trust Staff initiated discussions with federal officials, peer organizations, and other stakeholders to develop plans and partnerships to deploy the funds.

FY2023 was also marked by a significant policy change that directly relates to the Trust's initiatives. In June, 2023, the Maine Legislature passed and the Governor signed Legislative Document (LD) 1724, An Act to Enact the Beneficial Electrification Policy Act of 2023. This law allows the Trust to apply electricity ratepayer funds to fuel-switching measures (e.g., from oil or gas to electricity) in certain limited circumstances: where those measures are cost-effective and would, over the life of the measures, reduce electric utility rates. The law directs the Trust to develop a three-year plan for "beneficial electrification" and to incorporate that plan into its triennial plans and updates. It also requires the Maine Public Utilities Commission (PUC) to incorporate qualifying beneficial electrification measures into the calculation of Maximum Achievable Cost-Effective (MACE) savings. The PUC will then direct the

electric utilities to "procure" these savings by funding the Trust's program activities to promote beneficial electrification. This change will ensure sustained, predictable funding for beneficial electrification incentives in the years ahead, setting Maine on the path toward lower energy costs, energy independence, and meeting its statutory carbon reduction goals.

One especially notable highlight in FY2023 was reaching 101,000 heat pumps rebated through the Trust's programs since July of 2019, putting the state over its goal — two years ahead of time—of installing 100,000 new heat pumps in Maine residences and businesses between 2020 and 2025. This milestone represents significant progress in reducing Maine's reliance on imported heating fuels, lowering heating costs, and curbing harmful greenhouse gas (GHG) emissions and has gained the state national recognition. The Trust is excited to support the Governor's new milestone goal of installing another 175,000 additional heat pumps in Maine by 2027. This will help put Maine on track to meet the Maine Climate Council's goal of having at least 115,000 households in the state wholly heated by heat pumps and an additional 130,000 households in the state partially heated by heat pumps by 2030.

FY2023 was also a big year for the Efficiency Maine Green Bank—the financing arm of the Trust. It launched a Commercial Property Assessed Clean Energy (C-PACE) Program, creating a new way for commercial property owners to finance energy projects over longer terms. The Trust helped municipalities adopt the required ordinances and started registering participating capital providers. The Trust also rolled out a municipal lease offering for municipalities and schools, and piloted an equipment lease program for whole-home heat pump systems in manufactured homes. The Trust continued to research market gaps for financing in Maine and worked to refine and expand its finance initiative plans as it pursues an injection of new capital from the federal Greenhouse Gas Reduction Fund that will be awarded in 2024.

The Trust's hard work in FY2023 has put the organization in an excellent position to face changes that are expected in FY2024. For example, the federal Inflation Reduction Act (IRA) introduced extensive tax incentives that have increased demand for efficiency products and services while causing the Trust to restructure some of its rebates. The IRA also established significant new funds that will be used in the years ahead to provide rebates on certain home energy upgrades, such as heat pumps, and capital for green bank activity. The Trust is excited to tackle the challenges of planning and administering the programs that will help deliver these new funds to Maine's homes, organizations, and businesses. The next several years present a rare opportunity to make major progress advancing Maine's goals for energy efficiency and carbon reductions, and we look forward to putting the pieces in place in FY2024.

With gratitude for all those who have helped to make Maine more energy efficient,

Sincerely,

/s/ Michael D. Stoddard

Introduction

This Annual Report of the Efficiency Maine Trust describes activities during Fiscal Year 2023 (FY2023), which covered the period from July 1, 2022, to June 30, 2023. The report includes the budgets, activities, and results for all programs and related activities administered by the Trust. In total, these programs will save more than 303,600 megawatt-hours (MWh), and more than 13 million British thermal units (MMBtu) in cost-effective lifetime energy savings for Maine energy consumers. The Trust's FY2023 programs helped:

- Avoid more than $527 million in unnecessary lifetime energy costs;
- Prompt more than $193 million of incremental private investment using approximately $85 million of program investment;
- Reach a milestone of rebating nearly 101,000 high-performance heat pumps[1] installed since July 2019, and nearly 150,000 in total over the past 11 years;
- Support weatherization projects in 3,441 homes (of which 867 projects were in homes of low-income and moderate-income homes) through the Home Energy Savings Program (HESP) and Low-Income Initiatives;
- Avoid an estimated 73,027 short tons of annual GHG emissions; and
- Reduce summer peak demand by more than 19 MW.

The Trust was created by state statute in 2009.[2] The purposes of the Trust include:

- Consolidating under one roof the funds for Maine's consumer-focused efficiency and alternative energy programs for all fuel types, including electric, natural gas, and unregulated fuels;
- Procuring distributed energy resources (such as efficiency and alternative energy) that cost less than traditional energy to help individuals and businesses meet their energy needs at the lowest cost; and
- Helping transform the energy market in Maine so that energy-efficient products, alternative energy equipment, and related energy services are more accessible and affordable to residents, businesses, non-profits, and governmental entities.

The Trust is governed by a nine-member Board of Trustees. In FY2023, Suzanne MacDonald (Senior Researcher at the National Renewable Energy Laboratory) and Joan Welsh (former member of the Maine House of Representatives) served as Chair and Vice-Chair, respectively. Glenn Poole (former Energy Manager at Verso Corporation) served as Treasurer, and Kenneth Colburn (Principal at Symbiotic Strategies LLC) served as Secretary. Ex officio positions were filled by Dan Burgess (Director of the Governor's Energy Office [GEO]) and by Dan Brennan (Director of the Maine State Housing Authority).

[1] The Trust bases its count of units on a "heat pump equivalent" to accommodate the diversity of systems installed across the residential and commercial sectors. The Trust counts every 25.1 MMBtu/year of heat provided as one "heat pump equivalent." This metric is based on the modeled performance of a single residential heat pump with an Air-Conditioning, Heating, and Refrigeration Institute-rated Heating Seasonal Performance Factor between 10 and 12.5.

[2] 35-A MRS Chapter 97.

Heather Furth (Owner of Orono Brewing Company), Mark Isaacson (Manager at Competitive Energy Services, retired), and Christopher Rauscher (Senior Director of Market Development and Strategy at Sunrun) also served.

Sectors Served

The Trust's programs and initiatives serve multiple sectors. Table 1 illustrates the sectors served by each Major Program. Table 2 illustrates the sectors served by each of the Trust's Other Initiatives.

Table 1: Sectors Served by Major Programs

Program	Commercial and Industrial	Small Businesses	Multifamily	Residential	Low-Income Households	Moderate-Income Households	Institutions and Governmental Entities
Commercial and Industrial Custom Program	✓						✓
Commercial and Industrial Prescriptive Initiatives	✓	✓	✓				✓
Distributor Initiatives	✓	✓	✓	✓	✓	✓	✓
Retail Initiatives	✓	✓	✓	✓	✓	✓	✓
Home Energy Savings Program			✓	✓	✓	✓	
Low-Income Initiatives			✓		✓	✓	
Electric Vehicle Initiatives[3]	✓	✓	✓	✓	✓	✓	✓
Demand Management Program[4]	✓	✓	✓	✓	✓	✓	✓

[3] The Trust's EV Initiatives comprises two main components. The first component is the EV supply equipment (EVSE) initiative, which provides planning, education and financial incentives to promote the installation of EV chargers. In FY2023, the EVSE initiative limited participation to properties that are publicly accessible, which did not include private homes. The second component is the EV rebates initiative, which provides consumer education and financial incentives for the purchase or lease of qualifying vehicles. Rebates for the purchase or lease of vehicles was open to all types of Maine customers.

[4] The Load Shifting Initiative within the Demand Management Program is open to the following consumer sectors: multifamily, residential, low-income households and moderate-income households. However, in FY2023 the Load Shifting Initiative did not make any incentive payments.

Table 2: Sectors Served by Other Initiatives

Initiative	Commercial and Industrial	Small Businesses	Multifamily	Residential	Low-Income Households	Moderate-Income Households	Institutions and Governmental Entities
Efficiency Maine Green Bank	✓	✓	✓	✓	✓	✓	✓
Non-Wires Alternatives	✓	✓	✓	✓	✓	✓	✓
Renewables[5]				✓			
Lead by Example Initiative							✓
Agricultural Fair Assistance Program	✓	✓					
Thermal Energy Investment Program	✓	✓	✓				✓
High-Performance Affordable Housing Pilot			✓		✓	✓	
School Decarbonization Program							✓

Funding

The Trust received and/or expended funds in FY2023 from a variety of sources, including Maine's electricity and natural gas utility ratepayers, the Regional Greenhouse Gas Initiative (RGGI), the Maine Power Reliability Program (MPRP) Settlement Funds, the Forward Capacity Market (FCM) from the New England grid, the New England Clean Energy Connect (NECEC) Settlement Funds, federal funds, the Energy Efficiency and Renewable Resource Fund (EERRF), Volkswagen (VW) Settlement Funds, the Agricultural Fair Assistance Program Fund, and the Thermal Energy Investment Fund. The Trust is directed by Maine statute to invest these funds to promote more efficient and affordable use of energy and customer-sited alternative energy systems. Table 3 and Table 4 depict the FY2023 funding sources allocated to each of the Trust's major programs or other initiatives.[6] Detailed descriptions of the Trust's funding sources and spending can be found in the Finance and Administration section.

[5] As described in the Renewables section, the Trust allocated the Renewables budget to fund residential rebates in the Innovation Program's Hydronic Heat Pump with Thermal Storage Pilot. The pilot did not make any payments in FY2023 and was restricted to a handful of homes, so did not broadly serve the residential sector.

[6] Table 3 and Table 4 reflect the funding sources allocated to each program or initiative in FY2023. In some cases, those budgeted funds were not actually spent during this fiscal year. By contrast, the "funds invested" indicated at the start of each major program chapter represent the funding sources deployed in FY2023.

Table 3: Major Programs' Funding Sources

Program	Electric Efficiency Procurement	Natural Gas Efficiency Procurement	Regional Greenhouse Gas Initiative	Forward Capacity Market	Federal Funds	Maine Power Reliability Program Settlement Funds	NECEC Settlement Funds	Volkswagen Settlement Funds	State General Fund
Commercial and Industrial Custom Program	✓	✓	✓	✓	✓	✓			✓
Commercial and Industrial Prescriptive Initiatives	✓	✓	✓		✓		✓		
Distributor Initiatives	✓	✓	✓						
Retail Initiatives	✓		✓						
Home Energy Savings Program	✓	✓	✓	✓					
Low-Income Initiatives	✓	✓	✓	✓	✓		✓		
Electric Vehicle Initiatives					✓		✓	✓	✓
Demand Management Program	✓								

Table 4: Other Initiatives' Funding Sources

Initiative	Electric Efficiency Procurement	Regional Greenhouse Gas Initiative	Federal Funds	Volkswagen Settlement Funds	Energy Efficiency and Renewable Resource Fund	Agricultural Fair Assistance Program Fund	Thermal Energy Investment Fund
Efficiency Maine Green Bank		✓	✓				
Non-Wires Alternatives	✓						
Renewables					✓		
Lead by Example Initiative				✓			
Agricultural Fair Assistance Program						✓	
Thermal Energy Investment Program							✓
High-Performance Affordable Housing Pilot		✓					
School Decarbonization Program		✓					

Results

In FY2023, the programs that the Trust administered played a critical role in helping Maine businesses and households take advantage of energy efficiency, educating consumers about products that save energy, and helping them connect with vendors and contractors. The Trust's programs provided financial incentives that spurred consumers to choose energy-efficient options over lower-priced, less-efficient options—a choice that will reduce energy bills over the long term and put the Maine economy on a stronger footing.

Table 5 and Table 6 illustrate the costs and benefits associated with major programs that the Trust administered in FY2023.[7] Efficiency Maine's costs reflect the financial incentives paid by the programs, as well as the costs to manage the programs, provide public information and outreach, hold training sessions, provide technical support, and conduct quality assurance for each program. The tables also show the program participants' (customers') incremental costs invested in the energy upgrades, including those associated with upfront costs and operational costs. The lifetime benefits reflect the financial benefits from the energy savings (lifetime avoided energy supply costs and avoided operations and maintenance costs).[8,9] The benefit-to-cost ratio indicates the ratio of the financial benefits to the sum of Efficiency Maine costs plus participants' incremental costs.

Table 5: Costs and Benefits for Major Electric Programs

Program	Efficiency Maine Costs	Participant Costs	Lifetime Benefits	Benefit-to-Cost Ratio
Commercial and Industrial Custom Program – Electric	$2,428,188	$6,742,446	$21,253,690	2.32
Commercial and Industrial Prescriptive Initiatives – Electric	$10,629,118	$11,080,283	$73,501,028	3.39
Distributor Initiatives – Electric	$8,616,918	$1,150,740	$32,662,878	3.34
Retail Initiatives – Electric	$7,027,385	$3,037,878	$25,807,259	2.56
Home Energy Savings Program – Electric	$15,070,148	$98,334,711	$167,287,066	1.48
Low-Income Initiatives – Electric	$1,579,951	$70,744	$6,625,667	4.01
Demand Management Program	$470,670	-	$1,256,287	2.67
Total	**$45,822,377**	**$120,416,802**	**$328,393,876**	**1.98**

Table 6: Costs and Benefits for Major Thermal Programs

Program	Efficiency Maine Costs	Participant Costs	Lifetime Benefits	Benefit-to-Cost Ratio
Commercial and Industrial Custom Program – Natural Gas	$267,839	$379,960	$1,403,910	2.17
Commercial and Industrial Custom Program – Unregulated Fuels	$1,893,565	$8,179,471	$44,581,190	4.43
Commercial and Industrial Prescriptive Initiatives – Natural Gas	$369,148	$207,140	$8,536,867	14.81
Commercial and Industrial Prescriptive Initiatives – Unregulated Fuels	$3,211,441	$9,731,588	$25,220,275	1.95
Distributor Initiatives – Natural Gas	$26,984	$96,575	$307,167	2.49
Home Energy Savings Program – Natural Gas	$539,492	$780,387	$1,101,897	0.83
Home Energy Savings Program – Unregulated Fuels	$10,946,031	$22,222,193	$49,977,394	1.51
Low-Income Initiatives – Natural Gas	$13,482	$1,470	$16,461	1.10
Low-Income Initiatives – Unregulated Fuels	$12,435,120	$17,062,973	$39,400,530	1.34
Electric Vehicle Initiatives – EV Rebates[10]	$1,688,587	$14,450,545	$28,129,433	1.74
Total	**$31,391,688**	**$73,112,302**	**$198,675,122**	**1.90**

[7] The costs associated with the Trust's other activities (Other Initiatives, Strategic Initiatives, and Administration) can be found in Table 22.

[8] For detail on the energy savings values incorporated into this calculation by program, see Table A-1 and Table A-2. Where Other Initiatives generated any associated savings, those are captured in Table A-3.

[9] The lifetime benefits shown in the summary tables, and in the individual program tables throughout this report, are calculated using methodologies and assumptions approved by the PUC as part of the approval process for the Trust's Triennial Plan V.

[10] As noted above, the Trust's EV Initiatives comprises two main components: EVSE (i.e., chargers) and EV rebates. In this report, the Trust includes EVSE expenditures in the "Other Initiatives" tables (see, e.g., Table 22 and Table C-3). While EV chargers are critical infrastructure for promoting the increased use of EVs, chargers do not, by themselves, save any energy. The Trust attributes all costs and savings associated with EVs in the "Major Programs" tables under EV Initiatives. Because the savings of EVs derive from avoiding the consumption of gasoline or diesel fuel, they are reported as thermal savings rather than electric savings.

Major Programs

Commercial and Industrial Custom Program

The Commercial and Industrial (C&I) Custom Program incentivizes tailored energy efficiency projects that require site-specific engineering analyses and/or projects with energy conservation measures that are not otherwise covered by prescriptive incentives. The C&I Custom Program is primarily designed to overcome the barriers confronting Maine's larger businesses and institutions when making investments in complex energy efficiency and distributed generation projects. These projects represent important facility improvements that reduce the inefficient use of energy and keep operating costs down for Maine's largest energy users.

Commercial and Industrial Custom Program

Sectors Served

- Commercial and Industrial
- Institutions and Governmental Entities

Funds Invested

- Electric Efficiency Procurement
- Natural Gas Efficiency Procurement
- Regional Greenhouse Gas Initiative
- Forward Capacity Market
- Federal Funds
- Maine Power Reliability Program Settlement Funds

FY2023 Activities

Following are some program activity highlights for FY2023:

- Awarded incentives to 14 new customers and 18 past program participants (as compared to 23 new customers and 18 past program participants in FY2022, 28 new customers and 12 past program participants in FY2021, and 3 new customers and 14 past program participants in FY2020).
- Launched a targeted offering for manufacturers to invest federal funds, providing enhanced incentives for projects that reduce fossil fuel use and additional bonus incentives for beneficial electrification and heat recovery projects.[11]
- Supported continued program interest from cannabis cultivation facilities; cannabis horticultural lighting, as well as heating, ventilation, and air conditioning (HVAC) equipment projects constituted 7 of 32 awards made and accounted for 16% of incentive funds awarded. Transitioned additional cannabis lighting projects to the C&I Prescriptive Initiatives except for special circumstances requiring a more detailed baseline or energy savings review.
- Supported an uptick in customer interest in HVAC controls and equipment, which constituted 13 of 32 awards made and accounted for 14% of incentive funds awarded.
- Supported continued interest from ski areas; high-efficiency snow gun projects constituted 3 of 32 awards made and accounted for 25% of incentive funds awarded.
- Supported continued interest in microsteam turbine technology; these projects constituted 3 of 32 awards made and accounted for 19% of incentive funds awarded.

[11] For additional detail on this initiative, see Appendix E: Maine Jobs and Recovery Plan Initiatives.

- Managed the initiative to promote the increased installation and use of clean, cost-effective energy measures at properties owned or leased by the State of Maine – the so-called Lead by Example (LBE) Initiative.[12]

FY2023 Results[13]

Table 7: C&I Custom Program – Electric Results

Metric	Value
Total Participants	23
Total Projects	23
Efficiency Maine Costs	$2,428,188
Participant Costs	$6,742,446
Lifetime Benefits[14]	$21,253,690
Benefit-to-Cost Ratio	2.32

Table 8: C&I Custom Program – Thermal Results

Metric	Value	
	Natural Gas	Unregulated Fuels
Total Participants	3	8
Total Projects	4	8
Efficiency Maine Costs	$267,839	$1,893,565
Participant Costs	$379,960	$8,179,471
Lifetime Benefits[15]	$1,403,910	$44,581,190
Benefit-to-Cost Ratio	2.17	4.43

FY2023 Analysis

The C&I Custom Program continued to employ an incremental approach to developing projects. The program team focused on encouraging customers to complete one or more individual projects that fit with their current priorities and budget, building a positive foundation for additional program participation and energy efficiency investment in the future. This strategy appears to be effective; as noted above, the program continues to see a significant number of repeat participants.

Over the past few years, the C&I Custom Program witnessed a slight downturn in participation from several of the state's largest energy-intensive manufacturers while the statutory set-aside of RGGI funds for a handful of Maine's largest energy consumers – termed "Affected Customers" – was in place. The product of a legislative mandate, this set-aside had resulted in complex program requirements for

[12] Though managed through the C&I Custom Program, the LBE Initiative did not leverage C&I Custom Program funds. The Trust tracks all LBE Initiative activity and results separately under Other Initiatives.
[13] Several custom projects achieved a blend of electric and thermal savings in FY2023. The results associated with each fuel type are reported in the corresponding tables. Participant figures are therefore repeated; overall, the C&I Custom Program closed projects with 28 distinct participants in FY2023.
[14] For detail on the energy savings values incorporated into this calculation, see Table A-1.
[15] For detail on the energy savings values incorporated into this calculation, see Table A-2.

Affected Customers and limited available funding for them, both of which discouraged participation.[16] The statutory set-aside for Affected Customers expired in FY2021, and the program team worked hard to rebuild connections and renew interest from this customer group in FY2022. This effort began to bear fruit in FY2023, bolstered by the launch of the targeted opportunity for manufacturers using federal funds from the MJRP.

Projects at cannabis cultivation facilities continued to represent many C&I Custom Program applications for two reasons. First, though the medical cannabis market has been active in Maine since the late 1990s, the recent legalization of recreational adult use in the state led to considerable sector expansion.[17] Second, in October 2020, the Efficiency Maine Board of Trustees adopted a new policy to allow program eligibility for projects located at cannabis-related businesses.[18] Maine's cannabis growers—some new, some existing, but all newly eligible for incentives—turned to the program for assistance in opting for higher-efficiency lighting and HVAC solutions than they would have otherwise chosen. As noted above, cannabis projects constituted 7 of 32 awards made and accounted for 16% of incentive funds awarded through this program in FY2023, reflecting a slight increase in the average project size. For comparison, in FY2022, cannabis projects constituted 19 of 41 awards made and accounted for 13% of incentive funds awarded.

Initially, the Trust decided that all Trust-funded energy efficiency projects at cannabis facilities would be administered through the C&I Custom Program. Over the course of FY2021, it became apparent that an in-depth custom analysis was not necessary in all cases. Certain types of cannabis horticultural lighting projects yielded consistent, predictable savings across different facilities and involved relatively simple designs and easily accessible equipment. For this reason, the Trust re-directed qualifying projects to the C&I Prescriptive Initiatives in FY2022. In FY2023, the C&I Prescriptive Initiatives was able to further expand the suite of prescriptive measure offerings based on findings from an analysis of past custom projects. However, those projects at cannabis facilities with more complex or atypical scenarios do not qualify for the C&I Prescriptive Initiatives pathway, and thus continue to be processed under the C&I Custom Program in FY2024 as they were in FY2023.

The program also experienced continued interest from Maine's ski areas in FY2023, as well as the continued proliferation of microsteam turbine technology. Several ski areas were motivated to replace inefficient snow-making equipment due to rising energy costs. New, high-efficiency equipment also

[16] See Public Law, Chapter 498, 127th Maine Legislature, Second Regular Session, LD 1398, An Act To Reduce Electric Rates for Maine Businesses.

[17] In November 2016, Maine voters approved the recreational use, retail sale, and taxation of cannabis. During the 128th Legislature, a 17-member legislative committee was convened to overhaul the Marijuana Legalization Act passed by voters. After a lengthy process, An Act To Implement a Regulatory Structure for Adult Use Marijuana became law on May 2, 2018. LD 719, An Act To Amend the Adult Use Marijuana Law, was enacted in June 2019 and authorized the newly formed Office of Marijuana Policy to proceed with final adoption of adult use rules. The first active licenses for adult use establishments—including the first cultivation licenses—were issued on September 8, 2020.

[18] Efficiency Maine Trust, "APPROVE Motion to Make Businesses Lawfully Engaged in Cannabis Industry in Maine Eligible for Efficiency Maine Programs" (Efficiency Maine Trust Board Meeting Minutes, October 7, 2020), item 5(g), https://www.efficiencymaine.com/docs/EMT-Board-Minutes_2020.10.07.pdf.

produces higher-quality snow. The growth in interest in microsteam turbine engine technology was driven largely by a vendor who actively marketed in Maine. This vendor offers a compact and efficient backpressure turbine package that is economically attractive to lumber mills due to availability of cheaper biomass fuel and rising electric rates. FY2022 saw the first of these packages commissioned. In FY2023, two more of these were commissioned, and the program awarded three new projects—two at lumber mills and one at a large manufacturing facility. The program also observed an uptick in awards for HVAC equipment and controls, driven largely by hotels and universities seeking to install more advanced temperature and ventilation controls.

Participants in the C&I Custom Program relied primarily on internal staff and vendors to identify energy efficiency opportunities in FY2023. In some cases, however, more complex projects required site-specific engineering beyond existing staff's capabilities or what vendors were willing to explore on speculation. In other cases, customers were simply unsure of where to start. Accordingly, the program continued to offer support to overcome the lack of site-specific assessment and in-house expertise at customer facilities by providing free scoping audits to identify viable projects. Depending on the context, these scoping audits can range from a comprehensive review of facility opportunities to a consultation and technical guidance on a discrete project. The program also offered technical assistance (TA) grants to support further development of complex projects.

The program completed three scoping audits in FY2023. Staff spent most of FY2023 working through the relatively large number of scoping audit requests received during the winter and spring of FY2022 and remains engaged to support project development at several of these sites in FY2024. This growth in interest in FY2022 could have been a result of rising energy prices and easing of COVID-19-related restrictions that prohibited outside parties from gaining physical access to many of the facilities over the previous two years. The number of requests then waned substantially in FY2023, coinciding with the rollout of the virtual consultation offering through the C&I Prescriptive Initiatives. This offering provides a simple complement to the C&I Custom Program's on-site scoping audits and can be an efficient way to identify project opportunities in certain, simpler contexts (e.g., retail spaces, offices). Where the virtual consultations identified custom opportunities, customers were referred to the C&I Custom Program. The program did not complete any TA studies in FY2023, continuing the declining trend that began several years ago. (The program completed three TA studies over the past four fiscal years, down from a high of nine completed TA studies in FY2015 alone.) This trend reflects the proliferation of smaller, less complex projects (most of which do not require advanced analysis through a specialized third party) participating in the program over the same period.

Despite relatively slow uptake, scoping audits and TA studies can be a worthwhile investment by the program for those who choose to take advantage of them. Activity from FY2015 through FY2023 suggests that, on average, 38% of scoping audits lead directly to project implementation in subsequent fiscal years. The data also show an average TA-to-project conversion rate of 79% for the same period. The program will continue to invest in these studies where appropriate because, in addition to empowering and encouraging customers to move forward with energy efficiency projects, scoping audits and TA studies represent an opportunity for the program to provide input and direction on facility capital planning. Moreover, the audits and studies allow the program to scrutinize the work of

engineering firms and contractors before the project proposal stage, reducing the risk that customers will pay for inflated costs or unnecessary add-ons.

FY2024 Plans

- Continue to conduct outreach to manufacturers to drive participation in the targeted federal funding opportunity. Where applicable, find additional opportunities to invest the state Industrial Climate Transition Initiative funds to reduce greenhouse gas emissions at industrial facilities in the state.[19]
- Design and launch a program offering to detect and mitigate compressed air leakage, targeting a significant untapped opportunity.
- Launch an online application process to streamline data collection and improve participant experience.
- Monitor opportunities to transition certain cannabis project types to the C&I Prescriptive Initiatives.
- Work to accommodate the potential for a small number of higher-cost custom project proposals. If a project shows potential for significant, cost-effective electricity savings but exceeds the program's $1 million incentive limit, the Trust may work with customers to have the PUC consider a specific funding request through a long-term capacity contract.

[19] For more information on the Industrial Climate Transition Initiative funds, see the Finance and Administration section.

Commercial and Industrial Prescriptive Initiatives

Commercial and Industrial (C&I) Prescriptive Initiatives provide financial incentives, technical assistance, and project management support for the installation of energy-efficient equipment through a suite of broad market-based initiatives and targeted initiatives. The program promotes "off-the-shelf," widely available equipment that has predictable operating characteristics and applications across the C&I sector. Typical solutions promoted through this program include LED lighting; HVAC systems; and sector-specific solutions, such as refrigeration, compressed air equipment, and agricultural equipment. The program's targeted initiatives focus on specific sectors, hard-to-reach markets, or certain technologies, providing enhanced incentives or technical support.

Commercial and Industrial Prescriptive Initiatives

Sectors Served

- Commercial and Industrial
- Small Businesses
- Multifamily (≥3 units)
- Institutions and Governmental Entities

Funds Invested

- Electric Efficiency Procurement
- Natural Gas Efficiency Procurement
- Regional Greenhouse Gas Initiative
- Federal/Other
- NECEC Settlement Funds

FY2023 Activities

Following are some program activity highlights for FY2023:

- Incentivized 2,937 heat pumps, including variable refrigerant flow (VRF) systems and package terminal/vertical packaged terminal heat pump systems.
- Launched two new electrification measures: heat pump rooftop units (RTUs) and commercial heat pump water heaters.
- Introduced weatherization measures in multifamily buildings, offering incentives for attic insulation, basement insulation, and air sealing.
- Discontinued incentives for screw-in LED bulbs in January when federal regulations phased out incandescent and halogen bulbs, making LED bulbs the standard for general service lamps.
- Launched two new campaigns targeting small municipalities and long-term care facilities to invest federal funds. Continued to promote two additional federally funded campaigns targeting the hospitality industry and pre-kindergarten to grade 12 (PreK-12) public schools, which launched at the end of FY2022.[20]
- Adjusted multifamily eligibility for all C&I Prescriptive Initiatives from ≥5 units to ≥3 units.
- Launched a targeted initiative to accelerate whole-building electrification and weatherization in multifamily buildings with 3 to 15 units.
- Integrated the Small Business Initiative (SBI), formerly treated as a stand-alone program, as one of the targeted customer sectors administered through the C&I Prescriptive Initiatives. Transitioned the initiative from a geotargeted program to a statewide offering and expanded

[20] For more detail on federally funded initiatives, see Appendix E: Maine Jobs and Recovery Plan Initiatives.

eligibility by including rate classes with less than 50 kW in electric demand (vs. less than 25 kW), resulting in increased program activity.

- Cultivated growing interest in "virtual" consultations offering (launched May 2022) for businesses looking to learn more about how to get started on an energy efficiency project. Conducted 306 consultations, 111 of which led to project implementation (54 participants completed projects and 57 had projects pending).
- Engaged the Qualified Partner (QP) network and participating distributors with monthly newsletters and webinars, frequent website updates, participation in sector conferences, and ongoing distributor events. The network reached a record high number of engaged contractors (931) representing 792 companies.

FY2023 Results

Table 9: C&I Prescriptive Initiatives – Electric Results

Metric	Value
Total Participants	5,425
Total Projects	54,396[21]
Efficiency Maine Costs	$10,629,118
Participant Costs	$11,080,283
Lifetime Benefits[22]	$73,501,028
Benefit-to-Cost Ratio	3.39

Table 10: C&I Prescriptive Initiatives – Thermal Results

Metric	Value	
	Natural Gas	Unregulated Fuels
Total Participants	12	348
Total Projects	15	378
Efficiency Maine Costs	$369,148	$3,211,441
Participant Costs	$207,140	$9,731,588
Lifetime Benefits[23]	$8,536,867	$25,220,275
Benefit-to-Cost Ratio	14.81[24]	1.95

FY2023 Analysis

The C&I Prescriptive Initiatives launched two new measures in FY2023 that signaled growing momentum for building electrification. By adding heat-pump-based RTUs and commercial heat pump water heaters, the program moved closer to providing electrification incentives for the full suite of end uses in most commercial buildings. While RTUs have historically been used primarily for building ventilation, the incorporation of heat pump technology means that they can now serve all of a building's HVAC and

[21] 53,106 of the 54,396 reported "projects" were bulbs sold through distributors.
[22] For detail on the energy savings values incorporated into this calculation, see Table A-1.
[23] For detail on the energy savings values incorporated into this calculation, see Table A-2.
[24] This high benefit-to-cost ratio is driven by a small number of extremely cost-effective natural gas controls projects.

dehumidification needs. Commercial heat pump water heaters have also experienced recent technological advancements, now providing a highly efficient and more cost-effective way to heat domestic hot water with electricity in commercial settings. The program limited this offering to certain facility types and sizes with relatively high domestic hot water usage (e.g., lodging, restaurants, long-term care, and multifamily buildings) where installations are more likely to be cost-effective.

As efficient LED lamps showed increasing signs of having transformed the market for lighting, the program continued to shift its focus away from lighting measures in FY2024. As with the Trust's other programs, C&I Prescriptive Initiatives discontinued discounts for screw-in LED replacement lamps in January when federal regulations phased out incandescent and halogen bulbs, making LED bulbs the standard.[25] The program continued to offer incentives for tubular LED lamps and mogul base lamps. However, apart from a limited-time promotion for interior high/low bay and exterior mogul-base replacement lamps to accelerate the transition of these relatively high-cost measures, the program lowered its lighting incentives in response to the market baseline evolution.

Through its targeted initiatives, the program focused on specific sectors with distinct efficiency opportunities or in harder-to-reach sectors. In addition to integrating the expanded version of SBI described above, the program continued its targeted initiatives to support the investment of federal funds in PreK-12 schools and the hospitality industry. It also launched two new campaigns targeting small municipalities and long-term care facilities, and a targeted initiative for multifamily buildings with 3 to 15 units. Overall, the program has found that the combination of enhanced incentives, direct outreach, custom information, and project management support through these targeted efforts elicits more customer engagement than through standard C&I Prescriptive Initiatives offerings alone. These targeted initiatives also encourage QPs to review opportunities with their customer networks.

In FY2023, the program continued to grow its direct, customer-focused marketing efforts rather than primarily relying on the customer outreach efforts of the QP network. This included participating in industry conferences, attending and leading workshops, and marketing the various initiatives across the state. The program saw increasing interest in its new virtual consultation service, indicating that a certain population of Maine businesses and commercial property managers would like to install efficient equipment but do not feel ready to call a contractor. As noted above, the consultations are proving effective in spurring project development; of the 306 consultations conducted in FY2023, 111 led to project implementation (54 participants completed projects and 57 had projects pending).

As in previous years, supporting the program's QP network was an important focus of program efforts. The Trust communicates directly with participating contractors through webinars, newsletters, a website, and workshops. By the end of the year, the network reached a record high number of engaged contractors: 931 individuals representing 792 companies. The most significant growth was among HVAC contractors, reflecting a similar trend in program activity. Indeed, through collaboration with QPs and

[25] New standards set by the federal Energy Independence Act of 2007 resulted in LED General Service Lamps (GSLs) becoming the baseline technology for residential and commercial screw-in replacement lamps. With this change in baseline, LED GSLs ceased to be a cost-effective opportunity for program intervention (there being no intervention needed by the Trust's programs) in most applications, and thus became ineligible for incentives.

direct outreach to likely customers, the program saw a continued increase in adoption of larger, more complex HVAC solutions such as VRF systems. The program will continue to prioritize these measures in FY2024.

FY2024 Plans

- Shift incentives to a whole-building (or whole-zone for larger buildings) approach for heat pumps and VRF systems to ensure the heat pumps are appropriately sized and serve as the principal heating system.[26]
- Continue and expand targeted incentives for key C&I customer sectors, including small businesses, small municipalities, public schools, long-term care, hospitality, and multifamily buildings (three or more units).
- Plan for the incorporation of new federal funds allocated for energy efficiency in multifamily buildings.
- Plan for the incorporation of new federal funds allocated for grants and loans for energy audits and project implementation in congregate housing facilities.
- Continue to offer the virtual consultation service and evaluate its effectiveness.
- Continue to expand marketing and outreach efforts directly to all Maine businesses in addition to those eligible for enhanced incentives through targeted initiatives.
- Continue to attend conferences, workshops, meetings, and other events to share information with potential customers and participating QPs.
- Collaborate with participating distributors and QPs to market available incentives and discounts and targeted initiatives.

[26] This program design change is informed by the results of the C&I Heat Pump Impact Evaluation. For further detail, see the Evaluation, Measurement and Verification section.

Distributor Initiatives

Distributor Initiatives

Sectors Served

- All

Funds Invested

- Electric Efficiency Procurement
- Natural Gas Efficiency Procurement
- Regional Greenhouse Gas Initiative

Distributor Initiatives offer incentives for energy-efficient products acquired through distributors. Distributors are supply houses where contractors and larger customers go to purchase plumbing, heating, refrigeration, and electrical supplies. This midstream program leverages relationships with distributors of energy-efficient products to provide instant product discounts and to distribute technology information at the point of purchase. In FY2023, the discounted measures included heat pump water heaters, electronically commutated motor (ECM) circulator pumps for boiler systems, natural gas water heaters, and natural gas combination (combi) boilers.

FY2023 Activities

Following are some program activity highlights for FY2023:

- Recruited all distributors of plumbing supplies in the state to offer heat pump water heater discounts.
- Processed 6,217 instant discounts for heat pump water heaters, similar to the previous year's pace.
- Launched a campaign encouraging customers to "Buy a heat pump water heater and give your boiler the summer off," targeting systems that pull domestic hot water off the boiler (i.e., tankless coil water heating).
- Provided discounts for 14,777 ECM circulator pumps, a significant jump from 11,204 in FY2022.
- Targeted plumbing companies to educate staff and market ECM circulator pumps and heat pump water heaters.
- Launched a limited-time promotion on these efficient pumps for the last quarter of the fiscal year; the campaign brought the ECM share of the circulator pump market from 55% in the first three quarters to 80% in the last.
- Provided discounts on 74 combi boilers and 2 tankless water heaters that use natural gas and are ENERGY STAR certified.
- Continued to connect weekly with all participating distributors and to track market share of heat pump water heaters and ECM circulator pumps by branch for each distributor. Used this data to target product training where market share was lowest.
- Transitioned the LED replacement lamp offering to C&I Prescriptive Initiatives.

FY2023 Results

Table 11: Distributor Initiatives – Electric Results

Metric	Value
Total Equipment	20,994
Efficiency Maine Costs	$8,616,918
Participant Costs	$1,150,740
Lifetime Benefits[27]	$32,662,878
Benefit-to-Cost Ratio	3.34

Table 12: Distributor Initiatives – Thermal Results

Metric	Value
	Natural Gas
Total Participants	76
Total Projects	76
Efficiency Maine Costs	$26,984
Participant Costs	$96,575
Lifetime Benefits[28]	$307,167
Benefit-to-Cost Ratio	2.49

FY2023 Analysis

In FY2022, the program offered distributors an incentive if they would sell heat pump water heaters for no more than $499. The incentive helped keep the price of heat pump water heaters competitive with standard electric water heaters, driving considerable demand and program success. The program continued this approach in FY2023, which resulted in increased market share of heat pump water heater sales at distributors. Additionally, the program succeeded in recruiting all plumbing distributors in Maine to participate in the program.

The program continued to focus on marketing primarily to plumbers, the primary customers of distributors, although one distributor continues to have success selling heat pump water heaters directly to consumers. Staff collaborated with plumbing companies to answer installer questions about heat pump water heaters and ECM circulator pumps; staff also worked to adjust the installer locators on the Efficiency Maine website to reflect those plumbers installing heat pump water heaters most frequently. The Distributor Initiatives also benefited from advertising campaigns promoting heat pump water heaters as part of the Retail Initiatives. With these efforts and the discounts offered, sales of heat pump water heaters continue to grow in market share.

FY2023 also saw increased success in ECM circulator pump sales as the program marketed available discounts heavily to plumbers and participating distributors. In the last quarter of FY2023, the program launched a limited-time promotion on these efficient pumps, and the response was favorable. Temporarily increasing the discount from $75 to $100 motivated distributors to promote them more aggressively, and sales increased. ECM's share of the circulator pump market was 55% in the first three quarters of the year and moved to 80% by the end of the promotion.

[27] For detail on the energy savings values incorporated into this calculation, see Table A-1.
[28] For detail on the energy savings values incorporated into this calculation, see Table A-2.

Results for the program's natural gas measures were less favorable. At the end of the previous fiscal year, Maine's largest distributor declined to participate in the program. The reason given was concern about administrative complexity caused by the program requirement to segregate and separately track each customer (and associated program incentive) according to which of the state's four gas utilities they are served by. This distributor accounted for more than half of the program participation in the previous year, and without their 11 branches as program outlets, program numbers declined.

However, the program and the metrics team continued to work with this distributor to evaluate sales of these measures without incentives. The study, conducted in the spring of 2023, found that the majority of natural gas on-demand water heaters and combi boilers sold in Maine are ENERGY STAR models even when there is no incentive.[29] The study concluded that ENERGY STAR models have become the baseline in Maine for these types of systems. Having determined that the incentivized measures are now the baseline, staff concluded that providing incentives for these measures is no longer cost-effective. This study confirmed an earlier assessment by the Trust, undertaken in support of Triennial Plan IV, the results of which were objected to by the utilities and deemed inconclusive at the time of the proceeding.[30] Given the results of this second study, staff suspended incentives for these natural gas measures pending further study and discussions with the Public Utilities Commission.

FY2024 Plans

- Continue to collaborate with distributors to keep heat pump water heaters cost-competitive with electric resistance water heaters.
- Continue to visit distributors frequently to provide in-store support for product training, best practice sharing, in-store signage, and marketing materials.
- Continue to direct customers interested in heat pump water heaters to plumbers frequently installing them.
- Attempt to capture more market share and increase uptake of ECM circulator pumps, including by working directly with plumbers and launching additional limited-time promotions.
- Continue to collaborate with Retail Initiatives on marketing and promotions for heat pump water heaters.

[29] Efficiency Maine Trust, "UPDATE on Survey of Natural Gas Equipment Distributors," (Efficiency Maine Trust Board Meeting Minutes, June 28, 2023), item 5(g), https://www.efficiencymaine.com/docs/EMT-Board-Minutes_2023-06-28_FINAL.pdf.

[30] Michaels Energy, "Midstream HVAC Potential Study," Appendix H in *Triennial Plan for Fiscal Years 2020-2022* (Efficiency Maine Trust, 2018), H-13 https://www.efficiencymaine.com/docs/Appendix_H_Midstream_HVAC_Potential_Study.pdf.

Retail Initiatives

Retail Initiatives focus on energy-saving measures that sell in relatively high volumes through retail stores and that, on average and through typical usage, achieve predictable energy savings.

The program leverages relationships with retailers to promote Efficiency Maine's mail-in rebates or instant discounts on energy-efficient products. Of all the Trust's programs, Retail Initiatives reach the largest number of Maine customers; this program also serves all sectors of the economy.

Retail Initiatives

Sectors Served

- Commercial and Industrial
- Small Businesses
- Multifamily
- Residential
- Low-Income Households
- Moderate-Income Households
- Institutions and Governmental Entities

Funds Invested

- Electric Efficiency Procurement
- Regional Greenhouse Gas Initiative

FY2023 Activities

Following are some program activity highlights for FY2023:

- Collaborated directly with retailers to make heat pump water heaters cost-competitive with electric resistance water heaters after instant discount.
- Provided an instant discount for heat pump water heaters as an alternative to the existing mail-in rebate.
- Processed 2,413 incentives for heat pump water heaters, up from 1,724 in the previous year.
- Marketed to customers replacing water heaters at or near the end of their useful life and customers heating domestic hot water with their central heating systems. Marketing activities included targeted online advertising for emergency replacement search terms (e.g., "broken water heater"), a campaign encouraging customers to "Buy a heat pump water heater and give your boiler the summer off," education of installers and retail store personnel about high-efficiency options and rebates, and installation of in-store signage.
- Worked with retail partners to place energy-efficient consumer products in prominent store locations and maintain adequate inventory.
- Collaborated with plumbers that advocate heat pump water heaters to better connect interested customers with plumbers actively installing heat pump water heaters.
- Rebated 4,905 ENERGY STAR®-certified clothes washers, 182 room air purifiers, and 71 low-flow showerheads with thermostatic valves.
- Ended LED discounts in December 2022 as federal standards, aimed at phasing out incandescent and halogen bulbs, took effect.

FY2023 Results

Table 13: Retail Initiatives – Electric Results

Metric	Value
Total Bulbs	850,398
Total Equipment	7,571
Efficiency Maine Costs	$7,027,385
Participant Costs	$3,037,878
Lifetime Benefits[31]	$25,807,259
Benefit-to-Cost Ratio	2.56

FY2023 Analysis

The program piloted in-store instant discounts with Lowe's and Home Depot in FY2022. The pilots were successful and expanded in FY2023 to become the primary rebate type for heat pump water heaters. But for the first quarter of FY2023, retail prices for heat pump water heaters were high compared to electric resistance water heaters and compared to the heat pump water heater price at distributors.

As a result, the program focused efforts on convincing the major retailers to reduce their pricing to make heat pump water heaters more competitive with electric resistance water heaters. Lowe's dropped their list price by $551, making heat pump water heaters price available for $449 after Efficiency Maine's $950 instant discount. This matched Lowe's electric resistance water heater price. Home Depot dropped their list price by $300, making heat pump water heaters available for $549 after Efficiency Maine's $850 instant discount. This brought the price of heat pump water heaters to within $110 of an electric resistance water heater. These list prices are likely the lowest in the country.

The program supported the retailers' shift in pricing with a significant marketing campaign. The field team also closely monitored inventory and collaborated directly with store personnel and corporate offices to ensure inventory of heat pump water heaters in the retail locations. Despite close monitoring by the field team and collaboration with store managers, there were moments of discontinuity of the offerings—pricing inadvertently reset to national levels when product numbers changed or inventory lagged behind demand. Yet even with these challenges, Maine sold 15 times the number of heat pump water heaters per capita than the United States as a whole.[32]

Prompted by reports of some plumbers discouraging installation of heat pump water heaters, the team updated the online vendor locator to better sort plumbers by the number of heat pump water heater projects submitted for rebates. These changes resulted in interested customers having an easier time connecting with plumbers who are comfortable installing the technology.

The program ended LED discounts in December 2022 as federal regulations phased out incandescent and halogen bulbs. The program continued to offer rebates and discounts for other energy-efficient technologies including clothes washers, room air purifiers, and low-flow showerheads with thermostatic

[31] For detail on the energy savings values incorporated into this calculation, see Table A-1.
[32] According to the 2022 ENERGY STAR Unit Shipment and Market Penetration Report, there were 141,000 heat pump water heaters sold in the U.S. With a population of 330 million, that equates to 0.4 units/1,000 people/year. The Trust's programs rebate 6 units/1,000 people/year.

valves. However, the rebates on room air purifiers will be suspended in FY2024 in order for the program to focus primarily on heat pump water heaters.

FY2024 Plans

- Continue to collaborate with retailers to provide instant discounts for heat pump water heaters with pricing that keeps heat pump water heaters cost-competitive with electric resistance water heaters.
- Collaborate with retailers to ensure availability and prominent in-store location of heat pump water heaters.
- Promote heat pump water heaters to customers interested in switching away from heating domestic hot water from the central boilers, as well as customers with water heaters at or near the end of their useful life.
- Suspend rebates for room air purifiers to focus program efforts on, and available funding for, heat pump water heaters.

Home Energy Savings Program

The Home Energy Savings Program drives installation of home weatherization and efficient heating systems by offering rebates and loans, providing customer and vendor education, and developing and maintaining a vendor network. HESP encourages energy upgrades in single-family homes and multifamily homes with up to four units.

Home Energy Savings Program

Sectors Served

- Residential
- Multifamily (2-4 units)
- Low-Income Households
- Moderate-Income Households

Funds Invested

- Electric Efficiency Procurement
- Natural Gas Efficiency Procurement
- Regional Greenhouse Gas Initiative
- Forward Capacity Market

FY2023 Activities

Following are some program activity highlights for FY2023:

- Incentivized a record 28,053 heat pumps, contributing to meeting the goal of 100,000 heat pumps in Maine since 2020, well ahead of the 2025 goal.
- Incentivized 4,748 building-envelope measures; compared to 3,446 measures in FY2022, roughly a 38% increase.
- Offered loans to help interested residential customers supplement rebates.[33]
- Presented at more than 100 events and training workshops throughout FY2023, increasing program awareness among customers and contractors.
- Continued to implement a comprehensive marketing plan promoting weatherization and heat pumps in collaboration with Low-Income Initiatives.
- Grew the Residential Registered Vendor (RRV) Network from 902 active vendors at the beginning of the fiscal year to 1,041.
- Collaborated with the Low-Income Initiatives team to launch a moderate-income rebate tier for weatherization rebates.

FY2023 Results

Table 14: Home Energy Savings Program – Electric Results

Metric	Value
Total Participants	16,315
Total Projects	16,484
Efficiency Maine Costs	$15,070,148
Participant Costs	$98,334,711
Lifetime Benefits[34]	$167,287,066
Benefit-to-Cost Ratio	1.48

[33] For more details, see the Efficiency Maine Green Bank section.
[34] For detail on the energy savings values incorporated into this calculation, see Table A-1.

Table 15: Home Energy Savings Program – Thermal Results

Metric	Value	
	Natural Gas	Unregulated Fuels
Total Participants	151	2,698
Total Projects	156	2,758
Efficiency Maine Costs	$539,492	$10,946,031
Participant Costs	$780,387	$22,222,193
Lifetime Benefits[35]	$1,101,897	$49,977,394
Benefit-to-Cost Ratio	0.83	1.51

FY2023 Analysis

FY2023 was a record year for heat pump installations. The heat pumps rebated through this program were a significant part of surpassing the goal of 100,000 high-performance heat pumps installed between 2020 and 2025, and making the HESP program one of the most successful heat pump programs in the country. As in previous years, the increased interest was due to a number of factors—higher oil prices, a growing network of installers, and word of mouth as more and more Mainers installed heat pumps. Staff spent considerable time supporting the heat pump installers navigating this record customer interest and the subsequent project backlogs. Staff also worked closely with heat pump manufacturers and installers to ensure continuity in offerings and rebates as the industry shifted from measuring efficiency with the Heating Seasonal Performance Factor metric to the Heating Seasonal Performance Factor 2 metric.[36]

In FY2023 program staff also researched and discussed program changes that would better support whole-home heat pump installations. Staff discussions with the contractor community also focused on ways the program might educate homeowners and contractors about available federal incentives through the Inflation Reduction Act, and adjust program offerings to complement federal tax credits.

Weatherization activity started off high, and the program team spent significant time speaking with contractors and tracking their backlogs. After January 2023, much of that activity moved under the Low-Income Initiatives after the successful launch of a new rebate tier for moderate-income individuals within that program. It has been popular, but the shift in activity reduced participation in the traditional HESP rebates as both eligible customers and contractors moved to the new offerings. The HESP team closely collaborated with the Low-Income Initiatives team and weatherization contractors to launch this new eligibility and rebate tier, as well as the weatherization project checklist and other program innovations. As noted in Table 15, weatherization projects in homes heated with natural gas were not

[35] For detail on the energy savings values incorporated into this calculation, see Table A-2.

[36] Title 10 of the Code of Federal Regulations ("CFR") part 430 subpart B appendix M ("Appendix M") was replaced effective 1/1/2023 by a new test procedure at 10 CFR part 430 subpart B appendix M1 ("Appendix M1"). Appendix M provides for the measurement of the cooling and heating performance of central air conditioners and heat pumps using the seasonal energy efficiency ratio ("SEER") metric and heating seasonal performance factor ("HSPF") metric, respectively. Appendix M1 specifies a revised SEER metric ("SEER2") and a revised HSPF metric ("HSPF2").

cost-effective. Therefore, the Trust will no longer use natural gas procurement to support weatherization incentives. Homes served by natural gas can still participate in RGGI-funded weatherization initiatives. The program overall will have a benefit-to-cost ratio greater than 1.0.

Because of the general shift toward low- and moderate-income weatherization rebates, marketing efforts were primarily led by the Low-Income Initiatives team and are reported in that later section. The team also collaborated with the Retail Initiatives and Public Information and Outreach teams on a do-it-yourself (DIY) winterization campaign to raise awareness about available weatherization projects while also providing rebates on winterization materials that homeowners or renters could install themselves. Additional details on that initiative are reported later in the Public Information and Outreach section.

Staff participated in more than 100 workshops, events, and conferences for both homeowners and contractors. Through HESP and the Low-Income Initiatives, the Trust also increased its support for participating RRVs by providing training scholarships, matching marketing investments, and offering a program liaison service that provides regular outreach to contractors with the highest levels of program participation.

FY2024 Plans

- Adjust multifamily eligibility from 2-4 units to 2 units only and add condominiums. (Eligibility for ≥3 units covered under the C&I Prescriptive Initiatives.)
- Modify heat pump offerings to better support whole-home heat pump solutions.
- Continue to support weatherization projects with vendor and customer outreach and incentives.
- Consider program changes to complement federal tax credits and other federal incentives; continue to leverage federal tax credits to drive program success.
- Consider re-launching financing for heat pump and weatherization projects through the Efficiency Maine Green Bank, depending on available capital.

Low-Income Initiatives

The Trust delivered energy efficiency benefits to low- and moderate-income customers through a portfolio of initiatives in FY2023. These initiatives targeted energy conservation funding to eligible households through several channels and other activities:

- *Direct installation* of conservation measures, where the Trust covers up to 100% of the cost of equipment and installation, and oversees contractor support;
- *Market-based initiatives*, where low- and moderate-income customers participate in the programs that the Trust offers to all residential customers, and where low- and moderate-income customers may be eligible for enhanced rebates; and
- *Direct-mail campaigns*, where eligible customers receive an offer for free, DIY energy-saving devices, along with a postage-paid order form.

Low-Income Initiatives

Sectors Served

- Low-Income Households
- Moderate-Income Households
- Multifamily

Funds Invested

- Electric Efficiency Procurement
- Natural Gas Efficiency Procurement
- Regional Greenhouse Gas Initiative
- Forward Capacity Market
- NECEC Settlement Funds
- Federal/Other

The resulting blend of approaches is designed to overcome obstacles to accessing cost-effective energy savings for low- and moderate-income Mainers.

FY2023 Activities

Following are some program activity highlights for FY2023:

Direct Installation

- Provided incentives to support the installation of 874 heat pump water heaters in low-income homes. Of these units, 342 replaced existing electric resistance water heaters, and 532 of these units replaced systems that pull domestic hot water off the boiler (i.e., tankless coil water heating). Under this direct installation initiative, the program covered 100% of the project costs.

Market-Based Initiatives

- Continued to drive demand for heat pumps for low- and moderate-income households; incentivized 1,346 heat pump units in FY2023. Coordinated with the Maine State Housing Authority (MaineHousing), which administers a program that offers eligible households a no-cost heat pump installation through Community Action Agencies (CAAs).
- Continued the expanded market-based weatherization initiatives for low- and moderate-income households initiated in FY2022. Launched a separate moderate-income pathway and simultaneously decreased incentives for low-income households. Program activity grew

substantially, supporting upgrades in 867 homes (up from 140 homes in FY2021 and 385 homes in FY2022).

- Collaborated with the Home Energy Savings Program on an extensive marketing and outreach campaign focused on heat pumps and weatherization.

Direct-Mail Campaigns

- Instituted an automated process to offer DIY energy-saving kits to individuals verified as low-income through the Trust's online eligibility verification form. Discontinued broader mailings of business reply cards mid-year.
- As with the Trust's other programs, phased out LED bulb offerings in the DIY energy-saving kits, leaving only low-flow showerheads with thermostatic valves and faucet aerators.
- Observed a considerable slowdown in the number of DIY energy-saving kit request fulfillments (5,341 in FY2023 vs. 20,052 in FY2022), due to multiple years of direct mailings to a limited pool of households in income-based programs and the shift to customer-initiated requests for eligibility verification.

Other Activities

- Continued to refine the Trust's online form for verifying income-based eligibility (launched late FY2022) to help individuals "opt in" to enhanced incentives. Added a pathway for moderate-income households to confirm eligibility for certain offerings based on an adjusted gross income (AGI) threshold.
- Monitored progress on two affordable housing projects awarded funding in FY2022 to build to higher energy efficiency standards as part of a High-Performance Affordable Housing Pilot.[37]
- Continued to support the electric utilities' Arrearage Management Program (AMP) by providing participants with electricity use reports and information on energy-saving products and available incentives.[38]
- Supported the Innovation Program's Whole-Home Heat Pump Solutions Pilot.[39]
- Convened quarterly meetings of the Low-Income Advisory Group (a gathering of stakeholders, including the Office of the Public Advocate, the Public Utilities Commission, low-income advocates, state and local housing authorities, tribal group representatives, utilities, and CAAs) to collaborate on the Trust's offerings. The Advisory Group coordinated with other low-income programs and resources across the state, provided status reports on implementation, and gained valuable insights on program design and implementation.
- Raised awareness about the Trust's low-income offerings at various events, including the Common Ground Country Fair, Maine Health Care Conference & Expo, Green Ellsworth Energy

[37] Though managed through the Low-Income Initiatives, the Trust tracks all High-Performance Affordable Housing Pilot activity and results separately under Other Initiatives.

[38] A Maine law enacted in April 2014 requires each electric utility to offer AMP initiatives. The AMP legislation was intended to help reduce the number of low-income customers in arrears on their electric bills and, therefore, lower the "bad debt" burden to ratepayers that is associated with customers who fail to pay their utility bills.

[39] For further detail, see the Innovation section. Though the pilot was managed and funded through the Innovation Program, the associated costs and savings are included in the Low-Income Initiatives results.

Efficiency & Electrification Day, Orono Energy Efficiency Fair, Bangor Citizens' Climate Lobby Earth Day Event, A Climate To Thrive Building Solutions Fair, Greenwood Town Office Earth Day Energy Fair, a MaineHousing staff training, municipal energy/sustainability committee meetings (Rockland, Topsham, Hallowell), and library information sessions (Belfast, Cumberland, South Portland, Wells, Readfield), as well as presentations to various Rotary and Lions clubs.

FY2023 Results

Table 16: Low-Income Initiatives – Electric Results

Metric	Value
Total Participants	6,115
Total Projects	6,116
Efficiency Maine Costs	$1,579,951
Participant Costs	$70,744
Lifetime Benefits[40]	$6,625,667
Benefit-to-Cost Ratio	4.01

Table 17: Low-Income Initiatives – Thermal Results

Metric	Value	
	Natural Gas	Unregulated Fuels
Total Participants	5	2,713
Total Projects	5	2,763
Efficiency Maine Costs	$13,482	$12,435,120
Participant Costs	$1,470	$17,062,973
Lifetime Benefits[41]	$16,461	$39,400,530
Benefit-to-Cost Ratio	1.10	1.34

FY2023 Analysis

Direct Installation

The number of projects to install heat pump water heaters remained relatively steady in FY2023, continuing the high pace set in FY2022. The market saw notable increases in equipment costs, prompting the program to raise its reimbursement for installers. This increase had the effect of attracting more installers to the initiative. The program maintained a higher reimbursement value for replacements of tankless coil systems given that those projects required an electrician on site. While roughly 50% of the incentives in FY2022 were for projects that replaced electric resistance water heaters and 50% replaced tankless coil systems for water heating, the balance shifted to 35% and 65% in FY2023, respectively. Using RGGI and NECEC funds, the program is the only initiative in the country targeting the replacement of tankless coil systems with heat pump water heaters using a direct-installation approach.

[40] For detail on the energy savings values incorporated into this calculation, see Table A-1.
[41] For detail on the energy savings values incorporated into this calculation, see Table A-2.

Market-Based Initiatives

Interest in the market-based weatherization initiative continued to grow in FY2023. The Trust was able to leverage an influx of federal ARPA funds through the MJRP to extend enhanced incentives to a broader range of customers, launching a moderate-income pathway mid-year.[42] Starting January 1, 2023, for households with an AGI of $70,000 or less for single filers, and $100,000 or less for joint filers, the program offered 60% of the weatherization project cost up to $6,000. The program simultaneously decreased weatherization rebates for low-income households (from 90% of the project cost up to $9,000 down to 80% of project cost up to $8,000). Though participation from low-income households slowed with this change, the growth in participation from moderate-income households resulted in a considerable overall increase in program activity, more than doubling FY2022's already record high. The program paired these rebate changes with increased marketing and other outreach, further driving program interest. The Trust observed a corresponding growth in vendor capacity to meet this demand.

The market-based initiative for heat pumps did not implement any changes in FY2023. The program maintained FY2022's pace with 1,346 heat pumps installed.

Direct-Mail Campaigns

As noted above, the program observed a considerable slowdown in the number of DIY energy-saving kit request fulfillments in FY2023. In FY2022, the program sent repeated mailings of business reply cards to the full list of participants in the Home Energy Assistance Program (HEAP) and programs managed by the U.S. Department of Health and Human Services (DHHS). Given that, it is likely that the program satisfied most of the demand from the eligible pool. Furthermore, by shifting DIY kit offers away from broad mailings of business reply cards to an automated approach through the online eligibility verification process, the Trust focused its efforts on the smaller universe of households expressing interest in its programs.

Other Activities

In FY2022, the Trust added an online form that individuals can use to request Efficiency Maine verification of their income eligibility to receive higher incentives offered through the program. The form initially included two pathways for income-based eligibility: participation in the HEAP and demonstration of tax-assessed property values below county-based thresholds set by Efficiency Maine. The Trust verified eligibility, providing individuals with a formal confirmation letter. This simplified the process for the individual and provided a way to participate even if they had not received, or had lost, a direct-mail offer. The approach also helped Efficiency Maine pursue a broad marketing and outreach campaign, which generated significant interest.

Late in FY2022, and in collaboration with DHHS, the Trust expanded the number of pathways to also include participation in the Supplemental Nutrition Assistance Program (SNAP) for food assistance, Temporary Assistance for Needy Families (TANF) for cash assistance, or MaineCare for medical

[42] For additional detail, see Appendix F: Maine Jobs and Recovery Plan Initiatives.

insurance coverage.[43] Using the form, individuals provide sufficient information for DHHS to verify participation; upon receiving verification from DHHS, the Trust then sends the customer confirmation that they can participate in the program.

In FY2023, the Trust added yet another pathway for moderate-income households to confirm eligibility for certain offerings based on an AGI threshold, as demonstrated through a tax transcript from the Internal Revenue Service. Overall, the Trust processed 5,701 verification requests through the online form in FY2023; 36% through the HEAP pathway, 29% through the DHHS program pathway, 25% through the AGI pathway, and 11% through the property value pathway. The online form proved to be a key asset to the program; it created a streamlined customer experience, eliminated the Trust's dependence on direct mailings using the DHHS mail house, and helped RRVs support their customers and receive rebates more quickly.

Enrollments in AMP remained relatively steady in FY2023. The program continued to provide electricity usage assessments, energy-saving tips, and offers for energy-saving devices to 100% of new AMP enrollees. As noted above, the Trust phased out LED bulb offerings in the DIY energy-saving kits, leaving low-flow showerheads with thermostatic valves and faucet aerators only. The program continued to assess which AMP customers may benefit from installation of a heat pump water heater, replacing 63 electric resistance water heaters for AMP enrollees in FY2023.

FY2024 Plans

- Continue to advance the market-based weatherization initiative to support Maine's goal to weatherize at least 10,000 low-income households through the combined efforts of the Trust and MaineHousing between 2020 and 2030.[44]
- Drive demand for heat pump water heaters in low-income homes.
- Drive demand for high-performance heat pumps in low-income homes to help meet Maine's statutory goal of having at least 115,000 households in the state wholly heated by heat pumps and an additional 130,000 households in the state partially heated by heat pumps by 2030.[45]
- Shift the program focus to a whole-home approach for heat pumps to ensure the heat pumps serve as the principal heating system. Add emphasis on appropriate sizing of the heat pump systems.
- Design, plan, and launch initiatives to incorporate new federal Inflation Reduction Act funds where applicable.
- Incorporate a targeted whole-home heat pump offering for manufactured homes, transitioning from the Innovation Program's Whole-Home Heat Pump Solutions Pilot.[46]

[43] The Trust began collaborating with DHHS to reach low-income households receiving assistance through these other means-tested programs in FY2019. Prior to launching this streamlined online process, the Trust provided physical outreach materials to DHHS to send to its mailing list.
[44] 35-A MRS §10104(4)(F)(2). This goal was established by the Maine Climate Council in 2020 and codified in statute by the 130th Legislature in 2021.
[45] 35-A MRS §10104(4)(F)(7). This goal was established by the Maine Climate Council in 2020 and codified in statute by the 130th Legislature in 2021.
[46] For further detail, see the Innovation section.

- Per a legislative mandate, work with MaineHousing to provide an education and outreach program to residents of manufactured homes to increase awareness of the Trust and MaineHousing's offerings.[47]

[47] Public Law, Chapter 194, 131st Maine State Legislature, LD 815, An Act to Provide Energy Efficiency Program Outreach and Assistance to Manufactured Housing Residents.

Electric Vehicle Initiatives

The Trust administers programs to expand availability of electric vehicle (EV) charging infrastructure (also referred to as EV supply equipment) and the adoption of EVs in Maine. Its programs provide instant rebates for eligible vehicles at participating car dealers in Maine and grants to fund the installation of EV charging infrastructure in Maine.

Electric Vehicle Initiatives

Sectors Served

- Commercial and Industrial
- Small Businesses
- Multifamily
- Residential
- Low-Income Households
- Moderate-Income Households
- Institutions and Governmental Entities

Funds Invested

- Volkswagen Settlement Funds
- NECEC Settlement Funds
- Federal Funds
- State General Funds

FY2023 Activities

Following are some activity highlights for FY2023:

Charging

- Collaborated with the Maine Department of Transportation (MaineDOT), the Governor's Energy Office, the Governor's Office of Policy Innovation and the Future (GOPIF), and the Maine Department of Environmental Protection (DEP) to brand the State's efforts to establish a public network of EV chargers as "Recharge Maine."
- Collaborated on development of Maine's EV Charging Infrastructure Plan, which was submitted to the Federal Highway Administration (FHWA) as a prerequisite for Maine to receive its share ($19 million) of the National EV Infrastructure funds, and launched a competitive solicitation to invest the first round of NEVI funds in DC fast-charging projects.
- Supported MaineDOT's application for $15 million in Charging and Fueling Infrastructure Discretionary Grant Program funds.
- Reviewed, awarded, and contracted for $2.1 million through Recharge Maine to four DC fast-charging projects on priority corridors in Aroostook and Washington Counties, comprising 15 plugs.
- Awarded 84 Level 2 community charging projects, comprising 217 plugs.

Vehicles

- Provided a total of 1,029 EV rebates in FY2023. Of those, 505 were for battery electric vehicles (BEVs) and 524 were for plug-in hybrid electric vehicles (PHEVs). 17 rebates went to governmental entities, 33 were enhanced rebates for qualified low-income customers, 67 were enhanced rebates for qualified moderate-income customers, and 10 were enhanced rebates for business customers as part of the limited business fleet promotion.

- Introduced a moderate-income rebate tier and raised BEV rebates in the low-income tier.[48]
- Added new BEVs and PHEVs to the list of vehicles eligible for rebates as they became available, including the Fisker Ocean, Chevrolet Bolt EUV, and Hyundai Ioniq 6.
- Distributed a bi-monthly newsletter to participating EV dealers, containing program statistics and updates.
- Conducted regular visits to dealerships to replenish EV brochures and other materials, build relationships with participating dealership staff, and gather feedback from dealers.

Education, Marketing, and Stakeholder Engagement

- Developed and disseminated two "how-to" guides on EV Charging at Home and Away and Installing Public EV Chargers.
- Hosted or participated in more than 20 EV workshops, conferences, and ride-and-drive events, including the Throttle Car Club EV Show, Wells EV Show, Common Ground Country Fair, National Drive Electric Week: Electrify Portland, Orono Energy Efficiency Fair, Moving Maine: Low-Income Offerings for Electric Vehicles, and ClimateWork Maine Summit.
- Convened the EV Advisory Group and presented EV program updates at stakeholder meetings such as Drive Electric Maine, the Transportation Strategic Advisory Group, and local climate action groups.

[48] New moderate-income rebates were $3,500 and $2,000 for BEVs and PHEVs, respectively. Low-Income rebates for BEVs increased from $5,500 to $7,500 and low-income rebates for PHEVs decreased from $4,000 to $3,000. Any-income rebates decreased from $2,000 and $1,000 to $1,000 and $500 for BEVs and PHEVs, respectively.

FY2023 Results

Table 18: EV Initiatives – EVSE Results[49]

Metric	Value
Total Level 2 Plugs Awarded	215
Total Level 3 Plugs Awarded	15
Efficiency Maine Costs[50]	$782,166

Table 19: EV Initiatives – Rebate Results

Metric	Value
Total EV Rebates	1,029
Efficiency Maine Costs	$1,688,587
Participant Costs[51]	$14,450,545
Lifetime Benefit[52]	$28,129,433
Benefit-to-Cost Ratio	1.74

FY2023 Analysis

In FY2023, the Trust continued its role of marketing and administering programs to award incentives for the installation of EV chargers across Maine that it began in 2017. This year, the Trust's program activity included working with MaineDOT to update the statewide plan for expanding public EV infrastructure, delivering presentations about the plan, and managing complex solicitations to invest funds for this purpose. The Trust also collaborated with MaineDOT, GEO, GOPIF, and DEP to brand and launch "Recharge Maine," the State's initiative to expand availability of public charging infrastructure. As part of this work, the Trust played a role in developing the annual update of Maine's EV Charging Infrastructure Plan, which was submitted to the FHWA in order to receive Maine's $19 million allotment of funds through the NEVI Formula Program. In FY2023, the Trust issued a competitive solicitation for public DC fast chargers along Alternative Fuel Corridors to invest the first installment of NEVI funds in Maine. The program will continue to invest NEVI funds through competitive solicitation rounds for the next several years.

The program awarded funds for 15 DC fast-charging plugs on state priority corridors in Aroostook and Washington Counties. The program also awarded funding to 215 Level 2 community charging plugs

[49] Elsewhere in this report, the Trust includes EV Initiatives' EVSE metrics with Other Initiatives and EV Initiatives' rebate metrics with Major Programs (see, e.g., Table 22 and Table B-3). The reason is that, while EV chargers are critical infrastructure for promoting the increased use of EVs, unlike all other Major Programs, chargers do not, by themselves, save energy. Nevertheless, because EVSE is such an integral element of the Trust's EV Initiatives, descriptions of the associated FY2023 activity are included in the EV Initiatives chapter in the Major Programs section.

[50] The costs reported here reflect amounts paid out during FY2023. They do not reflect amounts that were awarded in FY2023 but will not be paid out until the next fiscal year.

[51] Participant Costs reflect the customers' share of the incremental costs to purchase the vehicle, new electricity costs associated with charging those EVs, and avoided maintenance costs.

[52] For detail on the energy savings values incorporated into this calculation, see Table A-2.

across the state. These projects invested federal funds from the American Rescue Plan Act through the Maine Jobs and Recovery Program.

The second focus of the Trust's EV Initiatives is to increase the adoption of EVs in Maine. The Trust offers instant rebates through participating EV car dealers in Maine and for vehicles purchased directly from the manufacturer. The program offers enhanced incentives for qualified low- and moderate-income Maine residents, Maine governmental entities, tribal governments, and select non-profits. In FY2023, the program added a new pathway for moderate-income customers to establish their eligibility, which increased the participation of moderate-income customers in the program. It also increased the BEV rebate for eligible low-income customers, helping to grow program activity from 4 rebates in FY2022 to 33 in FY2023. The program also added new BEVs and PHEVs to the list of vehicles eligible for rebates. Despite the growing and diversifying list of eligible vehicles, supply chain disruptions continued to constrain vehicle inventory in FY2023. The disruption is expected to continue through FY2024.

To support these efforts, staff participated in dozens of dealer visits and "ride and drive" and other outreach events across the state. The program also published two more how-to guides, supporting interested EV owners and specifying EV charger locations. The staff also fielded hundreds of calls to the Trust's toll-free call center seeking information about EVs and the Trust's EV financial incentives.

FY2024 Plans

- Continue to support EV charging infrastructure planning through the Recharge Maine Initiative.
- Invest federal funds in competitive solicitations for fast chargers and consider other EV charging investment, as funding allows.
- Support the statewide installation and commissioning of fast charger and Level 2 sites funded in FY2023.
- Develop and launch program changes to increase EV rebate uptake among business fleet customers.
- Continue to educate participating dealers by conducting regular dealership visits and improving training resources available on the Trust's website.
- Research and analyze options for a pilot project promoting the use of electric bicycles through organizations that serve low- and moderate-income customers. Launch the pilot project if and when appropriate.
- Develop and launch a medium- and heavy-duty EV demonstration project.

Demand Management Program

The Demand Management Program seeks to increase the efficiency of energy use in Maine by deploying measures and strategies that mitigate the impacts of peak demand on electricity utility transmission and distribution (T&D) systems and balance the increased penetration of intermittent renewables on the grid. In FY2023, the program consisted of two discrete initiatives:

Demand Management Program

Sectors Served

- Commercial and Industrial
- Small Businesses
- Institutions and Governmental Entities

Funds Invested

- Electric Efficiency Procurement

- *Demand Response Initiative* – A traditional demand response program where participants are compensated for reducing their electricity usage when called upon to do so. This typically occurs during periods of peak demand that drive system costs. Third-party Curtailment Service Providers (CSPs) recruit end-user participants and manage all aspects of participation in demand response events and reporting to the Trust.
- *Load Shifting Initiative* – An initiative focused on using both passive and active load-shifting strategies across fleets of devices. These load-shifting measures are a form of "distributed energy resource" or "DER" that are programmable and, in some cases, networked, operating in response to internal or remote signals.

FY2023 Activities

Following are some program activity highlights for FY2023:

Demand Response Initiative

- Completed the first year of the initiative's active phase, with the two prequalified CSPs enrolling a total of 23 participants (having 11.2 MW of enrolled curtailable load).
- Called six discrete curtailment events during the 2022 summer capacity period (June 1–September 30).
- Validated results at the end of the 2022 summer capacity period showed that CSPs achieved 7.5 MW of curtailed load, representing 67% of the potential from the enrolled load.
- Increased the program budget for FY2024, enabling CSPs to enroll a total of approximately 15.3 MW of curtailable load for the 2023 summer capacity period.
- CSPs enrolled several new participants for the 2023 summer capacity period, many with smaller individual loads. Of the 174 participants, 76 have loads of 5 kW or less.

Load Shifting Initiative

- Completed a competitive solicitation process and selected Virtual Peaker as the Trust's Distributed Energy Resource Management System (DERMS) provider to run a platform that manages the demand of, and receives performance data from, DERs across the state.
- Finalized program design and conducted marketing and outreach in preparation for the launch of two new measures in FY2024: residential and commercial small batteries and residential managed EV charging.

FY2023 Results[53]

Table 20: Demand Management Program – Electric Results

Metric	Value
Total Participants[54]	23
Efficiency Maine Costs	$470,670
Participant Costs	-
Lifetime Benefits[55]	$1,256,287
Benefit-to-Cost Ratio	2.67

FY2023 Analysis

Demand Response Initiative

In January of FY2022, the Trust launched the Demand Response Initiative through a Program Opportunity Notice for CSPs. By starting early in the calendar year, the program was able to operate during the 2022 summer capacity season and realize savings immediately at the start of the Triennial Plan period (FY2023). As noted above, of the 11.2 MW of curtailable load that theoretically could have been turned off during a given event, the CSPs were able to capture 7.5 MW on average (67%).[56] This is consistent with first-year performance from similar programs in other states. These program achievement rates tend to improve over time as participants become more familiar with the process and CSPs adjust their portfolios to better match actual participant performance. The Trust will continue to monitor these metrics in the year ahead as the program matures.

The Trust originally developed budgets for the Demand Response Initiative based on data from the early phase of National Grid's ConnectedSolutions pilot program. As is to be expected of a pilot, the program experienced a gradual ramp-up of activity as the vendors and participants got accustomed to the program rules and incentives and incorporated these into their sales strategies and operating decisions. The Trust forecasted program participation levels that would reflect an immature Maine marketplace, similar to the results reported from the pilot stage of the program in Massachusetts. However, the Trust learned upon launching the initiative in Maine that CSPs are significantly more knowledgeable and engaged after having worked with other northeast programs in recent years. Participation in the Trust's

[53] The Load Shifting Initiative did not complete any projects in FY2023. Results reflect activity in the Demand Response Initiative only.
[54] Participants = customers enrolled by CSPs.
[55] For detail on the energy savings values incorporated into this calculation, see Table A-1.
[56] The program compensates CSPs for actual, validated savings only.

program was so strong that it encumbered the full FY2024 budget well in advance of the 2023 summer capacity season. The Trust's Board approved a budget increase in late FY2023, enabling CSPs to enroll additional participants for the 2023 summer capacity season.

During the Triennial Plan V planning process, stakeholders asked whether the Trust's new Demand Response Initiative would be targeting the peak demand period on the Independent System Operator for New England (ISO-NE) system that energy managers are already trying to reduce through regional programs (e.g., the so-called "Cap Tag" programs) and, if so, to what extent might the Trust be incenting behavior that was going to occur regardless of the Trust's program. To address these questions, the Trust analyzed the "worst-case scenario," studying the first six enrolled participants (those most likely to represent the highest opportunity for compensation given a known history of Cap Tag management performance) and found that approximately 29% of the load reduction may have happened without the Trust's program. Even after incorporating this finding into the benefit-cost test as part of a sensitivity analysis, the program remains highly cost-effective.

Load Shifting Initiative

The Trust spent the majority of FY2023 finalizing program design and administration details for the Load Shifting Initiative. Staff issued a competitive solicitation for a DERMS provider to support this and any of the Trust's other initiatives involving demand-side management elements (e.g., Demand Response Initiative, Non-Wires Alternatives projects, Innovation pilots) as needed. After the Trust awarded the contract in February, the selected provider set about developing its DERMS platform and associated program presence. The platform was integrated into the Efficiency Maine website.

The program laid the groundwork for the FY2024 launch of incentives on two new DER measures. The first is electric batteries. Eligibility for the measure will be limited to batteries that have an inverter size of no greater than 20 kW and are sited at customers (both residential and commercial) that have volumetric meters. These batteries will be controlled, or dispatched, approximately 15 times per summer, when demand on the electric grid is very high. Each individual dispatch, or event, will last no longer than three hours. The program will not call events on holidays, weekends, or within two days before major storms. The Trust anticipates that participants will be paid $100 per enrolled kilowatt of continuous discharge capacity, paid annually. Without this initiative, these customers have no incentive to dispatch their batteries on the grid during peak events.

The second measure is residential EV charging equipment. This measure will be limited to equipment that consumes between 2.8 kW and 19.2 kW of power. For EV chargers, the two participation pathways include charging management via hardware-based controls on a home charger, or charging management via integrated controls within an EV (known as "telematics"). Electric vehicles will be charged year-round on an overnight schedule, when demand on the electric grid is low. The Trust anticipates that participants will receive an initial $50 upon enrollment in the program, and an additional $50 per year for each year that they continue participating.

The program leveraged existing relationships with the vendor network, as well as existing program materials, to begin advertising its incentives and building momentum for launch. Staff coordinated with

various vendors throughout the state to market this program more directly to those customers that have already installed battery arrays and EV chargers. Participants interested in the battery incentives were able to pre-enroll on the Efficiency Maine website in May. Those seeking EV charging incentives were able to enroll at the start of FY2024 (July 2023).

FY2024 Plans

Demand Response Initiative

- Oversee an expanded portfolio for the 2023 summer capacity season, with 15.3 MW of curtailable load (vs. 11.2 MW in FY2023)
- Monitor the realization rate for the second summer capacity season, identifying areas for improvement as necessary.
- Collect CSP feedback mid-year with the goal of improving program design for the 2024 summer capacity season.

Load Shifting Initiative

- Launch the initiative and enroll participants for the managed EV charging measure.
- Boost outreach to battery manufacturers to ensure diversity of vendors and model options before launching incentives for small batteries.
- Transition the large battery measure from pilot status in the Innovation Program to program measure status in the Load Shifting Initiative.[57]

[57] For further detail, see the Innovation section.

Other Initiatives

In FY2023, the Trust spearheaded the implementation of several miscellaneous initiatives, some of which leverage or supplement the Trust's existing programs, and others that stand on their own with unique characteristics. A brief description of these initiatives follows.

Efficiency Maine Green Bank

The Trust enables a suite of financing offerings for energy projects under one umbrella—the Efficiency Maine Green Bank. Efficiency Maine Green Bank initiatives are designed to drive private capital into energy efficiency and clean energy equipment and services. Financing can serve as an important complement to the Trust's other incentives in helping Maine energy consumers overcome barriers to energy efficiency and clean energy.

During FY2023, in addition to continuing to manage its existing loan programs, the Trust launched several new finance initiatives via the Efficiency Maine Green Bank and worked on plans to expand its offerings when new federal funding becomes available in FY2024.The full suite of Efficiency Maine Green Bank offerings and related activity is described in the subsections below.

Home Energy Loans

The Trust leverages its Residential Revolving Loan Fund[58] to offer home energy loans that help homeowners pay for energy upgrades, all without borrower fees and with relatively low interest rates. The loan types include Property Assessed Clean Energy (PACE) loans, which are secured by a lien on a property, and unsecured Home Energy Loans. In early FY2023, as market interest rates rose, demand for these relatively low-interest loans began exceeding historical patterns and depleting the pool of available capital. In response, the Trust limited availability of residential loans to income-eligible applicants only at the half-way point of FY2023 and began developing plans to use third-party capital to expand any-income loan offerings.

Over the course of FY2023, the Trust loaned $8,985,510 million to residential customers who took advantage of rebates through HESP and Low-Income Initiatives. These loans facilitated 1,264 projects, most of which involved the installation of heat pumps. Six of these projects were PACE loans, and 1,258 were unsecured Home Energy Loans.

Small Business Energy Loans

In FY2023, the Trust used its Small Business Loan Fund to offer loans to businesses participating in the Small Business Initiative—a targeted initiative of the C&I Prescriptive Initiatives. Consistent with SBI requirements, any business having a peak electrical demand of 50 kW or less can access this financing to

[58] The Residential Revolving Loan Fund was originally capitalized with federal funds from the American Recovery and Reinvestment Act in 2010. It has since been supplemented with RGGI funds.

help in upgrading to high-performance heat pumps and VRF systems. In FY2023, the Trust loaned $14,404 for three projects to small business customers.

Commercial Property Assessed Clean Energy

C-PACE is a financing model that enables a commercial property owner to place a special assessment on their property to finance energy efficiency upgrades and renewable energy installations. This assessment is collected through the municipal property tax bill. In 2021, the Legislature enacted LD 340, An Act To Allow for the Establishment of Commercial Property Assessed Clean Energy Programs, enabling municipalities in Maine to establish this type of offering in their jurisdictions through passage of a local ordinance.[59] The legislation authorizes the Trust to administer a C-PACE program. It allows a C-PACE loan to cover up to 100% of the cost of a qualifying energy-saving improvement, including audits, project development, and application fees.

In FY2022, the Trust researched program design options, reviewed materials from other jurisdictions, met with national experts, interviewed Maine-based stakeholders, and held a stakeholder workshop to gather feedback on program design options. In FY2023, the Trust undertook a formal rulemaking process, adopting a new administrative rule governing the implementation of its C-PACE Program. The rule enumerates underwriting standards; quality assurance provisions; and how the program will be administered, whether by the Trust (or its agent) or by a municipality. The Trust also developed a set of program guidelines to spell out the operational details of its C-PACE Program and provide additional information. In March 2023, the Trust published all program materials and worked with interested municipalities and capital providers to recruit their participation in the program. The first municipalities to opt in to the program passed their ordinances in July 2023 (after the end of the Trust's fiscal year), and the Trust is looking forward to reporting on the first completed C-PACE loans in FY2024.

Municipal Lease

A municipal lease, sometimes referred to as a tax-exempt lease purchase, is a contract that allows an entity to obtain the use of equipment without incurring debt. A municipal lease is an effective alternative to traditional debt financing (e.g., bonds, loans) because it allows a public organization to pay for energy upgrades by using funds already set aside in its annual operating budget. This arrangement enables the government entity to use utility bill savings to help pay for the financing costs on the lease. This mechanism lowers the upfront cost of a project (typically to $0), spreads the costs of the project over several years, and leverages tax-exempt interest rates.

The Trust launched a municipal lease offering near the end of FY2023 and did not facilitate any leases before the end of the fiscal year. Through this finance initiative, the Trust pairs eligible Efficiency Maine program participants with private, Maine-based lenders that provide this type of financing. Eligible participants include Maine municipalities or public PreK-12 schools (or school districts) under the Maine Department of Education.

[59] Public Law, Chapter 142, 130th Maine State Legislature, First Special Session, LD 340, An Act To Allow the Establishment of Commercial Property Assessed Clean Energy Programs.

Manufactured Home Heat Pump Lease

The Trust's Innovation Program has been piloting the use of whole-home heat pump systems as a replacement for fossil fuel-fired furnaces in manufactured homes through its Whole-Home Heat Pump Solutions Pilot.[60] In FY2023, the Trust began testing the use of a lease mechanism for participants to cover their 20% share of upfront project costs. Participants lease the equipment either with a single up-front payment of $2,000 or 50 monthly payments of $50. After the payment obligations have been completed, the participant has the option to purchase the equipment for $1. Additionally, the Trust fully warranties the working operation of the heat pump during this lease period. Over the course of the year, 18 participants enrolled in the pilot; six selected the up-front payment option and 12 selected the monthly payment option.

Maine Clean Energy and Sustainability Accelerator

The Maine Clean Energy and Sustainability Accelerator is a dedicated, specialized finance program established by the Maine Legislature. The Legislature directed the Trust to serve as the administrator for the program for the purpose driving private capital into market gaps for goods and services producing low or zero GHG emissions.[61] The statute directs the Trust to use the Accelerator to "combat the causes and effects of climate change through the rapid deployment of mature technologies and the commercialization and scaling of new technologies by maximizing the reduction of greenhouse gas emissions in this State for every dollar deployed by the accelerator…"[62] The legislation authorized the Accelerator to finance and invest in projects such as renewable energy generation, grid investments (including storage), energy efficiency, industrial decarbonization, and clean transportation (including vehicles and fueling/charging infrastructure). The legislation authorized a range of financing activities that may be used to advance this mandate, including originating, underwriting, and closing financing and investment transactions; partnering with private capital providers and capital markets; managing a portfolio of assets; and providing capital in the form of debt financing, credit enhancements, aggregation and warehousing, equity capital, and other forms of financing approved by the Trust's Board.

Part of the intent from the Legislature, and the advocates who supported the establishment of the Accelerator, was to create a vehicle in Maine for the deployment of federal funds (including specifically any such funds "from a national clean energy and sustainability accelerator") that might become available in the future to help finance clean energy and greenhouse gas reduction projects.[63] Late in 2022, Congress passed the Inflation Reduction Act. An important provision of the IRA authorizes the U.S. Environmental Protection Agency (EPA) to implement the Greenhouse Gas Reduction Fund, a historic $27 billion investment that will be used to capitalize green banks to facilitate development of energy efficiency and clean energy projects. EPA will implement the GGRF via three grant competitions to be awarded in 2024: the $14 billion National Clean Investment Fund, the $6 billion Clean Communities

[60] For more information, see the Innovation section.
[61] Public Law, Chapter 358, 130th Maine State Legislature, First Special Session, LD 1659, An Act To Create the Maine Clean Energy and Sustainability Accelerator.
[62] 35-A MRS §10129(3).
[63] 35-A MRS §10129(7)(A).

Investment Accelerator, and the $7 billion Solar for All competition. In FY2023, the Trust participated in several national discussion forums (primarily through the American Green Bank Consortium) exploring opportunities for funding through this channel. This work has included developing a common vision for the state green banks for the use of GGRF funds, developing a strategy to maximize the funding to be allocated to the state green banks, and interviewing potential national bidders to forge strategic partnerships. The Trust plans to develop applications or align with applicants as appropriate in FY2024 and prepare for the deployment of funds in FY2025.

Non-Wires Alternatives

In 2019, the Legislature enacted LD 1181, An Act to Reduce Electricity Costs through Nonwires Alternatives, amending the process for planning and approving investments in the electric utilities' T&D systems. The law established a formal, independent process for the consideration of non-wires alternatives (NWAs) by the Maine Public Utilities Commission, and an NWA coordinator (NWAC) position within the Office of the Public Advocate (OPA) to review annual plans and individual project proposals.[64] As part of the process, the Trust was assigned to develop and deliver all customer-sited NWA resources (such as energy efficiency or energy storage) that are determined to be more cost-effective than the proposed T&D system investments.

FY2023 was an active year for the Trust and the NWAC; the team worked jointly to implement and refine procedures to efficiently review the utilities' investment plans for their T&D systems. NWA-related cases that were active in FY2023 included:

- Docket No. 2019-00309 – Request for Approval of Section 31 Rebuild Pertaining to Central Maine Power Company;
- Docket No. 2020-00125 – Commission Initiated Inquiry of the Nonwires Alternatives Investigation Process; and
- Docket No. 2023-00114 – Request for Investigation and Nonwires Alternative Review Pertaining to the Office of the Public Advocate.

The Trust and NWAC prioritized work on the alternative solutions to the Central Maine Power Company's (CMP's) proposed wires rebuild of Section 31 in the Brunswick area. Following the PUC's approval of the Section 31 NWA at the close of FY2022, the Trust worked with CMP to prepare for the delivery of the behind-the-meter elements of the NWA through the Trust's programs. This work included the development of a Memorandum of Understanding to specify the terms of a procurement contract for the availability and dispatch of a behind-the-meter energy storage system. The Trust has placed efforts to deliver customer-sited NWA resources on hold while the NWAC conducts a restudy of the project to account for new information on planning standards and load growth applicable to Section 31.

[64] 35-A MRS §3131-3134.

Other activities included:

- Continuing to improve data-sharing protocols among the utilities, the Trust, Office of the Public Advocate, and the NWAC; and
- Working with the NWAC to review the utilities' annual plans for proposed wires upgrades filed under Docket 2020-00125.

Also notable in FY2023 was the fact that the Legislature enacted LD 1887, An Act to Clarify the Review and Procurement Process for Nonwires Alternatives. Previously, any plans to build, expand, or upgrade standalone substations, if not connected to other plans to upgrade or expand wiring or other parts of the grid, were exempt from the NWA provisions of the law. Ironically, displacing or deferring the need for a substation is one of the simplest and most economical opportunities for NWAs. LD 1887 clarified that substations are subject to the same NWA processes as investments in any other part of the T&D system.

Renewables

For the past decade, the Trust administered the Renewable Energy Demonstration Grants program to support the promotion, research, design, and demonstration of emerging clean energy technologies. The initiative was funded by EERRF, a revenue stream composed of voluntary contributions from electric ratepayers, as well as funds from electricity suppliers that elect to meet their renewable portfolio standard obligations through alternative compliance payments (ACPs).[65] Projects were selected through a competitive bidding process; grant awards were provided for applications of renewable energy technologies that demonstrate uses for renewable technologies and that support community facilities. Past projects included solar photovoltaic installations, solar hot-air systems, biomass boilers, and district heating. The last request for proposals (RFP) was issued in FY2018; the Trust finalized one remaining project awarded under that RFP in FY2022.

In FY2023, the Legislature enacted LD 187, An Act to Eliminate the Energy Efficiency and Renewable Resource Fund and to Provide Needs-based Low-income Assistance.[66] This bill emerged from a legislative recommendation in the Trust's FY2022 Annual Report. There, the Trust noted that revenue from the fund had been so low and sporadic that for several years in a row it had insufficient funds to make a competitive solicitation worthwhile. The Trust also pointed out that Maine's policies to promote renewable energy have evolved to dwarf what the fund could offer. Arguably, the costs of the Trust to administer these funds, and of the utilities to collect and remit them, outweigh the benefits of the program. The Legislature agreed with this assessment; LD 187 discontinued the EERRF, eliminated the

[65] See 35-A MRS §10121.

[66] Public Law, Chapter 306, 131st Maine State Legislature, LD 187, An Act to Eliminate the Energy Efficiency and Renewable Resource Fund and to Provide Needs-based Low-income Assistance.

voluntary ratepayer contributions, and redirected future ACP revenues to the T&D utilities to provide financial assistance to low-income households.

With the passage of this bill, the Trust sought to invest the remaining EERRF fund balance for a constructive purpose consistent with the statutory provisions and the rules of the EERRF. To that end, the Trust decided to use EERRF funds to rebate the equipment costs associated with additional retrofits of heat pump/storage tank systems through the Innovation Program's Hydronic Heat Pump with Thermal Storage Pilot.[67]

Lead by Example Initiative

In FY2022, the Trust coordinated with the Bureau of General Services, GEO, and GOPIF to launch an initiative to promote the increased installation and use of clean, cost-effective energy measures at state properties. The Trust refers to this as the "Lead by Example" Initiative.[68] Per a Memorandum of Understanding between the Trust and the Office of the Attorney General for the State of Maine and the Commissioner of the Department of Administrative and Financial Services, the Trust was authorized to use approximately $3.7 million in Volkswagen Settlement Funds to support this initiative. The Trust's role under the initiative is to provide initial project screening, technical assistance and enhanced financial incentives for energy upgrades at state properties. The Trust has focused its efforts on cost-saving,[69] and carbon-saving, projects to convert Maine state buildings currently heated with oil or propane to heat pump-based systems.

In FY2023, the Trust engaged with 13 different state agencies representing inquiries across more than 36 buildings. Based on preliminary savings-to-investment ratio screenings, eight of these agencies were invited to apply for the LBE Initiative. The Trust incentivized equipment upgrades at three facilities and approved technical assistance funding for projects at six others. MaineDOT was awarded a total of $54,732 to retrofit the Vinalhaven and Lincolnville ferry terminals as well as the I-95 Southbound visitor center in Hampden from oil-based heating systems to heat pump systems. The ferry terminals projects are notable for the fact that the old, existing boiler systems were completely decommissioned, and these facilities no longer burn fuel for space or water heating. With respect to TA incentives, the Trust awarded four agencies a total of $53,748 to develop designs and bid solicitation documents for heat pump systems. Barring unexpected challenges, the TA awards should lead to project awards in FY2024.

In order to support state energy goals and better identify candidates for the LBE Initiative, the Trust contracted with an energy consultant in FY2023. The consultant gathered all master energy contract data, including oil, natural gas, and electricity use for all state buildings, to build a database of state buildings' energy use and deliver this database, and any associated analysis, to the State's Bureau of General Services. Additional tasks that the Trust may assign to the consultant in FY2024 include

[67] For more information on this pilot, see the Innovation section.
[68] The Trust's effort focusing on energy in State buildings is one element of a broader initiative, of the same name, overseen by GOPIF and working to reduce carbon emissions across a wide range of activities in State government. See Organizational Initiatives and Collaborations – Lead by Example for more information.
[69] Per the LBE Memorandum of Understanding, these projects must have a savings-to-investment ratio above 1.

providing input on capital decisions for energy-related equipment and performing scoping audits at facilities with high energy use intensity.

Agricultural Fair Assistance Program

In 2019, the Legislature enacted LD 1186, An Act to Address Electricity Costs of Agricultural Fairs, requiring the Trust to administer a new program to help agricultural fairs reduce their electricity costs through the most cost-effective opportunities available. The legislation also established the Agricultural Fair Assistance Program Fund to support this program.

In collaboration with the Maine Association of Agricultural Fairs (MAAF), the Trust launched a Funding Opportunity Notice (FON) for agricultural fairs in early FY2023. This FON offered elevated incentives for the measures found to offer the greatest opportunity for efficiency upgrades on the fairgrounds: LED lighting and HVAC retrofits. The program directed marketing and outreach about the FON directly to the fairs and the electrical contractor community. The MAAF also actively promoted the opportunity and helped review applications. The Trust made the funding award announcement for all qualifying applications at the MAAF annual conference in January. The 14 projects were underway by May, on track to be completed and realizing energy savings by the season's opening day.

In FY2024, the Trust will review the actual hours of use and the fairs' utility bills to determine the impact of the measures and estimate their cost-effectiveness. The Trust will share those aggregated results with MAAF. The law requires that the Trust submit a report on the initiative to the Energy, Utilities and Technology Committee before January 15, 2024. The law sunsets at the end of June 2024.

Thermal Energy Investment Program

In 2021, the Legislature enacted LD 597, An Act to Establish the Thermal Energy Investment Program, requiring the Trust to establish a new program to provide incentives and loans to businesses, municipalities, educational institutions, and non-profit entities for the installation of new thermal energy-derived projects. The goal of the legislation is to strengthen the state's forest products industry and lower energy costs by increasing the efficient use of thermal energy production.[70] Thermal energy-derived projects are defined in the statute as projects that produce thermal energy and thermal renewable energy credits (TRECs) under Maine's renewable portfolio standard, such as wood-fueled combined heat and power or the conversion of fossil fuel-fired boilers to wood-fueled boilers or boilers using biofuels derived from wood. The statute does not stipulate any cost-effectiveness requirements for these projects. The new law provided that the Thermal Energy Investment Fund will be funded through ACPs from electricity suppliers who fail to secure their required quota of TRECs.[71]

The Trust launched the Thermal Energy Investment Program in December of FY2023. The program provides an incentive of 35% of project costs, with an additional 10% incentive for projects that include

[70] 35-A MRS §10128.
[71] 35-A MRS §3210(9)(C).

the installation of advanced emission controls or energy meters. By the end of the year, the program had completed one project and had one project in the pipeline for FY2024.

High-Performance Affordable Housing Pilot

In FY2022, the Trust launched a pilot to incentivize developers of new construction affordable housing to modify their baseline and build to Passive House standards.[72] In FY2023, the Trust continued to monitor progress on the pilot's two projects: (1) a 60 unit building being developed by Avesta on Valley Street in Portland ("Porter Station"), and (2) a 60 unit building being developed by South Portland Housing Development Corporation in Scarborough ("Oak Hill Senior Housing"). Even before the projects' completion, the Trust has benefitted from gaining more detailed information about the differences between the previous baseline and the Passive House standards and anticipates learning more about the best way to approach high-performance new construction after the buildings are complete. Notably, however, the Legislature enacted LD 1656, An Act to Promote Energy-Efficient Affordable Housing, in May 2022, requiring that all future new construction projects funded by MaineHousing meet efficiency qualifications based on industry-recognized certification programs such as Passive House.

School Decarbonization Program

Prior to 2021, the statute required the Trust to administer the School Energy Savings Program, providing incentives and technical support for energy audits, as well as incentives for energy-saving measures at PreK-12 schools in Maine. In 2021, the Legislature enacted LD 815, An Act to Support School Decarbonization, expanding the scope of this program to provide a more comprehensive technical and financial support to help kindergarten to grade 12 schools become carbon neutral.[73] The bill renamed the initiative the School Decarbonization Program and allowed the Trust to facilitate access to, and cost-share, a variety of "professional services" beyond energy audits, including technical support, financing, and legal services. Late in FY2022, the Trust launched a School Decarbonization Technical Assistance Program that provides a cost share for engineering studies and professional services to negotiate power purchase agreements on projects to electrify a school's heating system. The Trust also assigned a staff member to serve as the primary point of contact for schools; this person assesses each school's inquiry on a case-by-case basis, directing them to the Trust's existing program offerings where appropriate and facilitating access to professional services as requested. In FY2023, the point of contact connected a number of school representatives with the targeted opportunity for PreK-12 schools offered under the C&I Prescriptive Initiatives. The Trust did not receive any requests for funding under the School Decarbonization Technical Assistance Program.

[72] More information about Passive House standards may be found on the Passive House Institute U.S. website at https://www.phius.org/.

[73] Public Law, Chapter 152, 130th Maine State Legislature, First Special Session, LD 815, An Act To Support School Decarbonization.

Strategic Initiatives

Evaluation, Measurement, and Verification

The Trust's evaluation, measurement, and verification (EM&V) activities provide research and data-driven analysis to inform program design and delivery strategies, verify program results, and facilitate continuous program and organizational improvement. The Trust carries out these activities using a combination of in-house initiatives and subcontracted, independent third-party reviews performed by firms that specialize in the evaluation of energy efficiency programs.

FY2023 Activities

Following are some activity highlights for FY2023:

- *Triennial Plan Proceedings* – Staff prepared materials for the Trust's filings at the PUC related to the current Triennial Plan, including the FY2023 Annual Update.
- *Technical Reference Manual (TRM) Updates* – The Trust's TRMs memorialize the methods and assumptions used to calculate energy and demand savings. The Trust made updates to the TRM assumptions as new information became available in order to improve the accuracy of claimed savings.
- *Forward Capacity Market Measurement and Verification (M&V) Compliance Review* – The Trust completed its annual FCM M&V Compliance Review. The review found that the Trust's methods and assumptions for calculating peak summer demand savings at the portfolio level were estimated at ±6.25% relative precision with 80% confidence, exceeding the requirement of the ISO-NE. Winter demand savings were calculated at ±6.42% relative precision. The ISO-NE standard is that the relative precision of the portfolio not exceed ±10% with 80% confidence. The review team also found that the metering equipment used by the Trust to measure distributed generation assets was FCM compliant.
- *Customer Surveys* – The Trust conducted an online demographic survey of low-and moderate-income customers who received weatherization rebates. The Trust also conducted an online survey of customers who had purchased EVs to learn about customer experience and satisfaction.
- *Program Evaluations* –
    - The Residential Heat Pump Impact Evaluation team monitored meters on 170 heat pump units in 126 homes to assess achieved savings for installations under the Home Energy Savings Program and Low-Income Initiatives. The evaluation will be completed in FY2024.
    - The Trust finalized the C&I Heat Pump Impact Evaluation. The study assessed the baseline as a blend of retrofit and lost opportunity,[74] leading to higher savings, but it also found lower usage than assumed, which reduced savings. In aggregate, the evaluators assessed that actual savings from the heat pumps were higher than initially reported by the program. Higher costs associated with retrofit projects resulted in

[74] Lost opportunities cover measures such as those undertaken during new construction projects and planned equipment purchases (e.g., "replacement on burnout" scenarios).

mixed cost-effectiveness across a range of measure permutations. Overall, the evaluators found that heat pumps rebated between FY2017 and FY2019 are cost-effective under Triennial Plan V methodologies and assumptions. The evaluation also found that customer satisfaction with heat pumps is high and there remains unused potential for installed heat pumps to provide more heating in most facilities. The evaluators estimated a net-to-gross ratio of 65%, which indicates that program influence is nearly tripling commercial heat pump installations in Maine.

- *Studies* – The Trust completed an Advanced Metering Infrastructure (AMI) analysis of residential heat pump performance. The study found that a significant number of homes are using their heat pumps less than assumed in the TRM, while others are using it more than assumed. The Trust also launched the Multifamily AMI Analysis and Tool Development project. This tool will assess heat pump usage in near real time, helping the Trust assess the impact of program design changes in the C&I Prescriptive Initiatives in FY2024.
- *effRT 2.0* – The Trust continued to invest in improvements to effRT 2.0, the multiprogram database that supports the Trust's reporting and project activity tracking, to improve data accuracy and application processing.

FY2024 Plans

Following are some EM&V activities planned by the Trust for FY2024:

- Launch the C&I Custom Program Evaluation.
- Publish the evaluation report for the Residential Heat Pump Impact Evaluation.
- Publish periodic updates to the TRMs as new information becomes available.
- Roll out real-time, ongoing customer surveys on other programs.
- Seek opportunities to expand the use of utility interval data and modern analytics in the performance of the Trust's EM&V activities.
- Initiate studies in support of Triennial Plan VI.

Innovation

The Trust's Innovation Program provides funding to conduct pilot projects that demonstrate new types of energy efficiency, conservation, or alternative energy measures, and new strategies for promoting such measures. The program focuses on measures that show significant potential to be cost-effective and to provide energy savings or GHG savings but are not yet well understood or established in the Maine marketplace. The measures piloted may or may not prove to be cost-effective or popular. Part of the purpose of the Innovation Program is to use smaller projects to generate findings about cost-effectiveness and market demand before making larger commitments of resources that a full-scale program entails.

FY2023 Activities

Following are some Innovation Program activity highlights for FY2023:

- Launched the Innovation Advisory Group (comprising several Trustees), creating a forum for staff to leverage outside expertise and insight on pilot design and implementation.
- Monitored and concluded the Heat Pump Optimization with Integrated Controls Pilot.
- Monitored and concluded the Isle au Haut Thermal Energy Storage Load Management Pilot.
- Monitored and concluded the Level 2 EV Smart Charging Pilot and the companion study exploring onboard managed EV charging.
- Monitored the ongoing Commercial Split-System Heat Pump Water Heater Demonstration Pilot.
- Expanded the ongoing Whole-Home Heat Pump Solutions Pilot to include additional manufactured home sites and test a lease mechanism for a customer co-pay.
- Expanded eligibility for the pilot exploring large battery storage systems, changing it from the Critical Care Facility Energy Storage System Pilot to the more generic Energy Storage System Program.
- Launched and monitored the first phase of the Hydronic Heat Pump with Thermal Storage Pilot.
- Launched the Connected Communities Transactive Energy Pilot.

FY2023 Results

In FY2023, the Trust completed the Heat Pump Optimization with Integrated Controls Pilot. The goal of the pilot was to test whether heat pump usage can be increased, and overall heating costs decreased, by controlling both a heat pump and a central, fossil fuel-fired, heating system with one affordable, integrated control. Results varied considerably depending on the type of site. Ideal sites were those homes with a single zone system where the heat pump zone overlaps significantly with the central heating system zone controlled by the smart thermostat. Homes with heat pumps in separate areas not covered by the central heating system or with areas or rooms not served by the heat pump did not perform as well. The findings indicated that it would be expensive and very difficult to scale a program capturing the ideal use cases. The Trust does not anticipate moving forward with additional pilots or programs based on this pilot.

Also in FY2023, the Trust concluded the Isle au Haut Thermal Energy Storage Load Management Pilot. This pilot was designed to leverage the thermal storage capacity of various air-to-thermal storage heat pumps (one air-to-water, four air-to-phase-change material [PCM]) as a way to store the energy from daytime solar production and deploy it in evening and nighttime hours. The Trust was not able to explore the storage as a grid asset, as the utility was unable to proceed with the load management elements of the pilot. Findings indicated that the systems are effective but there are site-specific issues with air-to-water thermal storage systems. These issues could likely be overcome in other installations with more system engineering. The Trust considers this a promising technology and is continuing to explore applications through the Hydronic Heat Pump with Thermal Storage Pilot.

The final set of pilots completed in FY2023 related to EV charging. The Level 2 EV Smart Charging Pilot sought to test the effectiveness of "smart" networked EV chargers with scheduled off-peak charging and simulated time-of-use rates. Results showed that the managed charging interventions successfully shifted EV charging demand, but that widespread adoption of smart charging is hampered by technical constraints around the chargers themselves. While they are universally compatible with all EVs, installing the hardware and maintaining an internet connection present significant barriers to customer adoption of the technology. The charger must be installed and commissioned, which can be costly and time consuming, and it must remain connected to the internet. In many instances, the margin of possible savings is lost if the initial programming or internet connection are lost.

To further explore how to minimize the technical limitations of the networked chargers, the Trust launched a second pilot to evaluate onboard charging management. Onboard charging uses the programming within the EV (known as "telematics") to schedule charging, eliminating the cost of installing smart chargers and reliance on a continuous internet connection. Results showed that the telematics solutions successfully shifted EV charging demand. Customer experience and energy savings were nearly identical to the first, hardware-based, managed charging pilot. It should be noted that, in the context of these pilots, program administration costs were notably lower for onboard charging management, with fewer incentive dollars needed to encourage customer adoption, lower subscription costs, and easy scalability. The tradeoff of this lower cost is that onboard control can only serve a small portion of the total EVs in the state given that several vehicle manufacturers are reluctant to agree to the required third-party integrations. Nevertheless, the number of supported vehicles is growing as vehicle manufacturers work to integrate their systems with platforms like Virtual Peaker.

In FY2024, the Trust will launch incentives for both Level 2 smart charging and onboard charging management through the Demand Management Program's Load Shifting Initiative. Based on the pilots, the Trust determined that it would capture the largest market opportunity by offering both measures. Leveraging the Trust's new DERMS platform through the Load Shifting Initiative will simplify the deployment and control of both technologies. Beyond measure control, the DERMS platform will allow the Trust to closely monitor enrolled measures for key telematics such as state of charge (SOC), uptime, latency, and performance. These insights allow staff to continuously optimize the program to overcome the non-trivial barriers of uptime and measure-level performance.

FY2023 Analysis

The Trust continued to monitor progress in its Commercial Split-System Heat Pump Water Heater Demonstration Pilot. To explore which kinds of buildings or applications might benefit most from split-system heat pump water heaters with waste heat recovery, the pilot recruited participants to represent four different building types in FY2022—a brewery, a data center, a food processing facility, and a college dormitory. In FY2023, the equipment and metering were installed and commissioned at all four sites, and the test period began. Each participating pilot installation required a significant amount of site-specific engineering to fully capitalize on waste heat recovery, suggesting that these systems are unlikely to be suitable for prescriptive measures but might be appropriately incorporated into the Trust's programs as custom measures. The Trust anticipates conducting a second commercial split-system pilot that focuses only on water heating (without heat recovery). This second pilot will focus on split-systems in multifamily buildings because of their significant and more predictable water heating demand.

The Trust continued the Whole-Home Heat Pump Solutions Pilot in FY2023. This pilot aims to identify and test whole-home heat pump solutions that can directly replace an existing home heating system. In the initial phase, the Trust subsidized 100% of the cost of retrofitting 10 single-wide manufactured homes and 9 stick-built homes; all participants agreed to have their fossil-fuel heating systems disabled or removed, and switched to heating with air-source heat pumps.[75] Results demonstrated that the heat pumps in ducted manufactured home installations worked at all temperatures observed (including temperatures lower than -5°F). This was the first known instance of retrofitting an existing manufactured home's heating to heating exclusively with heat pumps. Results from the stick-built homes also indicated that the heat pumps were able to maintain interior temperatures in all temperatures observed. Where some stick-built installations included participants in colder climates, the pilot monitored in temperatures as low as -20°F. Pilot participants indicated a high level of satisfaction and comfort with the heat pump systems.

In FY2023, the Trust launched a second phase of the pilot to expand the sample size to an additional 20 single-wide manufactured homes and to test other equipment models and colder Maine climates. This second phase is also exploring the use of a lease mechanism for a 20% customer co-pay.[76] Preliminary results are similar to or better than those of the first phase; indeed, the Trust saw heat pumps in ducted manufactured home installations work at all temperatures observed, including temperatures lower than -15°F. The Trust therefore plans to transition to a broader program offering under Low-Income Initiatives in FY2024. That program will target an additional 100 participants, limiting eligibility to single-wide manufactured homes in Maine's lower three climate zones where the pilot proved successful. The option to lease the equipment will remain available. At the same time, the Trust will continue to expand

[75] Electric resistance back-up heat was also installed in some participating homes where the capacity of the heat pump and the estimated heat load of the home indicated that the heat pump alone might not be sufficient to maintain the indoor set point temperature during extreme cold events.
[76] For additional information on the lease element of this pilot, see the Efficiency Maine Green Bank section.

the Innovation pilot, exploring systems in up to 20 additional sites with a slightly different baseline—double-wide manufactured homes and homes located north of Bangor.

The Trust launched a Critical Care Facility Energy Storage System Pilot in FY2022 per legislative mandate.[77] The pilot sought to have eligible participants (e.g., hospitals, health care facilities, fire departments, emergency medical service departments, police departments, public safety buildings, and emergency shelters) install and dispatch energy storage during the ISO-NE's peak summer load conditions. The launch of this pilot coincided with CMP's establishment of a coincident peak rate for critical care facilities that made the targeted dispatch of batteries financially attractive.

In early FY2023, the Trust expanded eligibility for the pilot to all customers having a demand meter, renaming it the Energy Storage System Program. This adjustment was made based on the expansion of the coincident peak rate to *all* CMP and Versant customers having demand meters. The Trust felt that obtaining a broader and more representative perspective on the market response to this pilot would help it more accurately gauge the overall market potential of a large battery measure. As the year progressed, the pilot received significant interest from customers and developers but did not receive any completed applications. The Trust learned that, due to a lengthy grid interconnection process and battery supply chain delays, a project might take three years to complete construction after the Trust awards a contract. In the spring, the Trust decided to issue a formal request to the PUC to incorporate large battery storage as a cost-effective electrical measure, making modifications to the maximum achievable cost-effective ("MACE") opportunity and corresponding electric procurement budget as appropriate. That request was approved by the PUC in FY2024. The Trust will therefore sunset the pilot and transition large battery storage measures to the Demand Management Program.

Also in FY2023, the Trust launched a Hydronic Heat Pump with Thermal Storage Pilot to identify and test retrofitting one or more types of hydronic heat pumps with thermal storage to fully heat homes that use existing hydronic distribution systems. The heat pump systems must supply 100% of the heat load of an existing structure currently heated by a boiler combusting a delivered fuel, such as heating oil, and distributing the heat through the existing hydronic system. The heating systems deployed through the pilot include an air-to-water heat pump, a storage tank, and an electric boost tank. The components are connected to a supervisory control and data acquisition (SCADA) system that maintains resident comfort and would be capable of responding to hypothetical grid conditions. The pilot enrolled one test home in FY2023. In FY2024, the pilot will enroll up to five additional average homes around Millinocket. This focus will allow for proof of concept in an area where significant wind power drives negative electricity prices in the winter months.

Also in FY2023, the Trust partnered with the Post Road Foundation as part of its U.S. Department of Energy-sponsored project—Evaluating Transactive Energy for Rural America (known as the "Connected Communities Transactive Energy Pilot"). The goal of the pilot is to create an enhanced "prices-from-devices" transactive energy software platform for two "Connected Communities" in Maine, called the

[77] Public Law, Chapter 298, 130th Maine State Legislature, First Regular Session, LD 528, An Act To Advance Energy Storage in Maine.

Transactive Energy Service System (TESS). The software platform will coordinate the operation of DERs among the buildings in each community. The project will then assess TESS's ability to achieve load flexibility and occupant comfort in a cost-effective and equitable manner. TESS will be deployed in each community, and performance will be observed over multiple years and seasons. Special-purpose experiments will be undertaken to simulate operational conditions that may not frequently arise (e.g., wholesale power price peaks, system load peaks, and uncommon market conditions). These observations and experiments will measure performance metrics by comparing each community's performance with TESS operational and with TESS disabled. Although "prices-from-devices" transactive energy has been tried before with either a single type of DER or a small number of homes, this will be the first effort to test transactive energy at the hundred-building scale with a mixed set of DERs and in a rural context. In Maine, each community will have about 100 single-family homes, 50 small commercial buildings, and five industrial buildings. Each building will host a heat pump-based HVAC or hot water heater, and some buildings (10 to 20) will host 10 kW lithium ion batteries and other DERs. In FY2023, the Trust and other pilot collaborators selected Brunswick and Mount Desert Island as the two Connected Communities for the pilot.

FY2024 Plans

- Analyze and report on the results of Commercial Split-System Heat Pump Water Heater Demonstration Pilot with heat recovery, in addition to launching the Multifamily Split-System Heat Pump Water Heater Pilot.
- Continue to expand the Whole-Home Heat Pump Solutions Pilot to more fully develop elements of a sustainable program, exploring applications in double-wide manufactured homes located farther north. Analyze and report on results across all phases of the pilot.
- Sunset the Energy Storage System Program pilot and incorporate large battery storage as a cost-effective electrical measure under the Demand Management Program.
- Expand the Hydronic Heat Pump with Thermal Storage Pilot by adding up to five additional test sites.
- Monitor the ongoing Connected Communities Transactive Energy Pilot.
- Per legislative mandate, conduct a feasibility assessment for a Vehicle-to-Grid pilot and make recommendations to the Legislature.[78]
- Identify ideas for new innovation pilots and issue solicitations, as appropriate.

[78] Public Law, Chapter 32, 131st Maine State Legislature, LD 519, Resolve, to Evaluate a Vehicle-to-grid Pilot Project Using Electric School Buses.

Public Information and Outreach

The Trust engages in a range of marketing and outreach activities across all of its programs to reach a wide variety of customers across the State of Maine. Through efforts such as the Trust's website, media relations, social media, events, targeted mailings, and more, the Trust provides Maine residents and businesses with information about its rebates and programs, as well as general energy information and education. These marketing efforts help to increase awareness among Maine residents and businesses of the benefits of cost-effective efficient technologies, energy resources, and operating practices. The Trust provides guidance on how to access its rebates and programs, as well as promotes workforce development and professional training relevant to energy conservation. Additionally, as Maine's energy efficiency program administrator, the Trust is frequently called on to participate in energy-related events and to provide input on energy policy issues.

FY2023 Activities

Following are some program activity highlights for FY2023, in addition to those described earlier within the individual program sections:

- *100,000 Heat Pump Goal* – In celebration of reaching Maine's goal of installing 100,000 heat pumps between 2020 and 2025 at the close of the fiscal year, staff helped organize the Governor's press conference announcing the milestone. Representatives from the White House, the Trust, MaineHousing, the Maine Community College System, and a half-dozen of the top-performing heat pump installers were in attendance. The event garnered statewide and national media coverage.
- *Events* –
    - Presented at statewide and many regional and national conferences on heat pumps, electric vehicles, and beneficial electrification, including the ClimateWork Summit on Maine's Economy & Climate Change, Northeast Energy Efficiency Partnerships (NEEP) Summit, Maine Health Care Association's Fall Health Care Conference, Maine Municipal Association Fall Convention, the Maine School Management Fall Conference, the Hospitality Maine Spring Expo, and the GOPIF Communities Leading on Climate Change Conference, and PACENation Summit 2023.
    - Participated as panelists before a variety of gatherings of Maine businesses and residents. Hosts for these events included Maine professional associations, major Maine businesses, and local energy groups.
- *Green Bank Resources* – Developed several new web pages and resources to support the launch of the expanded Efficiency Maine Green Bank.
- *DIY Winter Prep Rebates* – In collaboration with Retail Initiatives and the Home Energy Savings Program, developed and launched a media and marketing campaign to raise awareness about weatherization, including a $100 Rebate for low-cost, DIY weatherization materials such as window film, weatherstripping, and caulk.

- *Web Resources* – Enhanced informational web resources (available on the Efficiency Maine website – efficiencymaine.com) about heat pumps; EVs; and residential, commercial, and industrial solutions. Over the course of FY2023, the website averaged 40,600 visits per month.
- *Trainings* – Expanded and continued to offer educational and training resources online and in person:
    - By continuing to offer training for participating EV Initiatives dealerships;
    - By continuing to offer online training for Registered Residential Vendors and Qualified Partners;
    - By continuing to offer online training on building code provisions and best practices for compliance; and
    - By regularly supporting the Kennebec Valley Community College Heat Pump Installer Class, the Maine Energy Marketers Association Heat Pump Installer Training, and the Central Maine Community College Heat Pump Installer Course.
- *Media Outreach and Advertising* –
    - Participated in media interviews on energy efficiency issues and Efficiency Maine programs, including discussions and articles in *Associated Press, CNN, The New York Times, The Washington Post, Boston Globe, Architectural Digest, Yahoo News, CleanTechnica, The Oregonian, Energy News Network, Canary Media, Portland Press Herald, Bangor Daily News, Maine Public Radio, Sun Journal, The Maine Monitor, Grist, The Piscataquis Observer, Green & Healthy Maine HOMES, News Center Maine, WAGM-TV 8, WABI TV5*, and more.
    - Enhanced media outreach, social media activity, and media events to publicize the benefits of existing programs and to amplify positive media coverage.
    - Leveraged digital advertising and social media platforms to advertise incentives, drive potential participants to the website, answer customer questions, and promote word-of-mouth information exchange among program participants and vendors.
- *Call Center* –
    - Answered customer inquiries related to the Trust's programs through the Trust's call center staffed by customer service agents. In FY2023, the call center averaged more than 2,880 calls per month and answered 96% of them within 20 seconds. The call center also received 1,280 letters per month.
    - Scheduled quality assurance inspections, conducted website testing, fulfilled requests for print materials, enrolled participants in the low-income free water heater program, and entered loan application information for customers who are uncomfortable using the internet.
- *Heat Pump Kits* – Shared heat pump tips and informational kits with heat pump rebate recipients. Over the course of FY2023, 18,156 kits (an average of 1,513 kits per month) were shipped to residential and commercial rebate recipients. The Trust also mailed and emailed seasonal heat pump tips to all heat pump rebate recipients.

FY2024 Plans

- Per a legislative mandate, launch a web portal for recipients of home energy scores to voluntarily report them to the Trust, creating a new online database of these scores.[79]
- Support beneficial electrification as an ongoing priority through outreach, press, and events on the benefits and applications of heat pumps, heat pump water heaters, EVs, ventilation units, and variable refrigerant flow systems.
- Support the communications and information needs of the Trust's newer initiatives, including EV Initiatives, the Efficiency Maine Green Bank, the Load Shifting Initiative, and federally funded initiatives.
- Develop and provide educational resources on key solutions and technologies. This will include sending heat pump kits to heat pump rebate recipients; enhancing educational resources for heat pump installers, commercial HVAC contractors, design engineers, contractors interested in building energy code updates, and participating EV dealers; providing additional resources on reducing energy costs; and enhancing no- and low-cost strategies for reducing energy use.
- Respond to media inquiries from online and broadcast outlets interested in learning more about Efficiency Maine programs or seeking commentary on energy topics.
- Participate in symposiums, conferences, and industry meetings to share program information and Efficiency Maine's data analysis with efficiency professionals, government officials, and potential customers.

[79] Public Law, Chapter 259, 131st Maine State Legislature, LD 1101, An Act to Support Lower Home Energy Costs by Establishing a Home Energy Scoring System.

Finance and Administration

Funding Sources

The Trust received and expended funds in FY2023 from a variety of sources. Below are brief descriptions of the Trust's funding sources and how they are invested through Efficiency Maine's major programs and other initiatives.

Electric Efficiency Procurement

Electric Efficiency Procurement funds come from payments that electric utilities make directly to the Trust for the procurement of cost-effective electrical energy efficiency. The amount of funding the Trust receives is determined by the budget needed to capture the MACE energy efficiency potential approved by the Maine PUC. Where available and appropriate, the Trust allocates a portion of other funding sources to offset some of the utility procurement necessary to capture MACE potential.

Maine's electricity customers who take service at the transmission and sub-transmission (T&ST) level do not contribute to and are ineligible for funding from the Electric Efficiency Procurement, but are generally eligible for other funds.

Natural Gas Efficiency Procurement

Natural Gas Efficiency Procurement funds come from natural gas distribution utilities. Similar to the standard used to establish the appropriate level of funding for electric efficiency, the amount of the procurement set for natural gas efficiency programs is based on the amount needed to capture the MACE natural gas savings through energy efficiency and conservation.

Maine's very large manufacturers and very large agricultural and aquaculture businesses, whose usage exceeds 1 million centum cubic feet (CCF) of natural gas annually, are limited to paying the assessment for the Natural Gas Efficiency Procurement on their first 1 million CCF of usage. This limitation does not impact their eligibility for the Trust's natural gas efficiency programs.

Regional Greenhouse Gas Initiative

RGGI is a multistate initiative to limit carbon emissions from electricity generators. Maine joined RGGI in 2009 when it was established. Under RGGI, large generators are required to purchase "carbon allowances" in an amount equal to their annual carbon emissions. Allowances are sold at quarterly auctions for this purpose.

Maine law requires that 100% of the annual emissions allowances for carbon dioxide be allocated for public benefit to produce funds for carbon reduction and energy conservation, and that the revenue resulting from the sale of allowances must be deposited in the Regional Greenhouse Gas Initiative Trust Fund managed by the Trust.[80]

The Trust must use RGGI funds for measures, investments, loans, technical assistance, and arrangements that reduce electricity consumption, increase energy efficiency or reduce GHG emissions,

[80] 38 MRS §580-B(7).

and lower energy costs at commercial or industrial facilities, and for investment in measures that lower residential heating energy demand and reduce GHG emissions.

Forward Capacity Market

FCM funds are proceeds from the Trust's capacity resources, which are bid into the ISO-NE markets. The compensation that the Trust receives from the FCM is for the reduction of demand delivered through qualifying efficiency projects that are tracked and reported by the Trust.

In late FY2019, the Maine Legislature enacted a Governor's bill—LD 1766, An Act to Transform Maine's Heat Pump Market to Advance Economic Security and Climate Objectives—establishing a goal of installing 100,000 high-performance heat pumps in the state between 2019 and 2025. The new law directed the Trust to allocate five years of new FCM revenue to promoting high-efficiency heat pumps and required that these funds be used to "supplement but not supplant" the existing incentives funded by the Electric Efficiency Procurement. The new law also provided that the Trust's FCM revenues must be excluded from consideration when the PUC determines the amount of cost-effective electric energy efficiency resources to be procured to capture MACE potential. The new law went into effect in September 2019.[81]

Federal Funds

The Trust received federal funds through the American Recovery and Reinvestment Act in 2009 and 2010. These funds were disbursed through grants and through a revolving loan fund. The Residential Revolving Loan Fund has been in operation since that time and continued to operate in FY2023.

In FY2022, the Trust was named a recipient of $50 million of American Rescue Plan Act (ARPA) funds as part of the Maine Jobs and Recovery Plan (MJRP). The MJRP allocated the $50 million to Efficiency Maine to accelerate weatherization upgrades for low- and moderate-income residents, and to expand energy efficiency investment among local governments, schools, community organizations, businesses, and manufacturers. The MJRP also allocated $8 million to MaineDOT to expand state, municipal, and other publicly accessible EV charging stations and related infrastructure in partnership with Efficiency Maine. The Trust began to invest these funds in FY2023.[82]

Also in FY2023, Maine received approximately $19 million of National EV Infrastructure (NEVI) Program funds (enabled through the 2021 Infrastructure Investment and Jobs Act — also known as the Bipartisan Infrastructure Law). The Trust was contracted by MaineDOT and the Governor's Energy Office to administer the state's NEVI funds. The Trust issued an RFP for qualifying EV charging infrastructure projects in FY2023, but did not invest any funds. The FY2024 Annual Report will include the first budget line items for this fund.

[81] Public Law, Chapter 308, 129th Maine State Legislature, LD 1766, An Act To Transform Maine's Heat Pump Market To Advance Economic Security and Climate Objectives.
[82] For further detail on these initiatives, see Appendix F: Maine Jobs and Recovery Plan Initiatives.

Maine Power Reliability Program Settlement Funds

The funds that the Trust received from the MPRP Settlement are governed by a May 7, 2010, stipulation approved by the PUC. The Trust received its final payment from the MPRP Settlement in FY2022; $150,000 for the weatherization of low-income homes, $250,000 for efficiency projects for T&ST customers, and another $100,000 to be allocated for other programs at the Trust's discretion. Though it did not receive any new MPRP funds in FY2023, the Trust did spend some remaining carryforward.

New England Clean Energy Connect Settlement Funds

In 2019, the PUC approved Central Maine Power's request to build the NECEC—a 1,200 MW transmission line traversing Maine from the Quebec border to Lewiston.[83] As part of the settlement agreement approving the project, the project sponsors agreed to establish multiple funds to deliver benefits to Maine; three of the funds were to be fully administered by the Trust, and the fourth was to have been partially administered by the Trust. In FY2021 and the first part of FY2022, the Trust received settlement fund payments for a variety of initiatives—including EVs; EV chargers; VRF systems for schools; and weatherization, heat pumps, and heat pump water heaters for low- and moderate-income households—but the NECEC project was put on hold in the wake of a referendum vote and court decision in late 2021. The NECEC suspended new settlement payments while the project was on hold pending a final decision. In January 2022, the Trust staff and Board decided to remove future payments from the budget. The FY2023 budget and program investment reflect NECEC settlement payments received before the suspension. A court decision in April indicated that the transmission line project may proceed, and settlement payments will resume in FY2024.

Volkswagen Settlement Funds

In 2016 and 2017, VW agreed to settle allegations that it violated the federal Clean Air Act by installing "defeat devices" on certain diesel vehicles. Maine (through MaineDOT) received settlement funds from VW under consent decrees reflecting one settlement agreement. Through a Memorandum of Understanding, MaineDOT contracted with the Trust to administer approximately $3.15 million of these funds to promote EV charging infrastructure with the goal of reducing GHG emissions and improving the energy efficiency of transportation in the state. Separately, VW settlement funds were also awarded to the Office of the Attorney General for the State of Maine. Of these funds, $5.1 million were transferred to the Trust for running a program to reduce carbon and nitrogen oxides emissions through the promotion and increased use of EVs. Another approximately $3.7 million in funds were transferred to the Trust to help state government facilities reduce their carbon footprint through energy efficiency improvements as part of the Governor's "Lead by Example" initiative.[84]

Energy Efficiency and Renewable Resource Fund

EERRF is composed of voluntary contributions from ratepayers, as well as alternative compliance payments (ACPs) from entities that do not meet Maine's renewable portfolio standard requirement.

[83] Maine PUC, Orders Approving Transmission Line, Dkt. No. 2017-00232 as supplemented by Dkt. No. 2019-00179, May 3, 2019, and October 20, 2020, respectively.

[84] Maine Executive Order No. 13, FY 19/20, An Order for State Agencies to Lead by Example Through Energy Efficiency, Renewable Energy and Sustainability Measures, November 26, 2019.

Maine law stipulates that 35% of these revenues be directed to the Maine Technology Institute (MTI) to help promote research on and development of renewables. The Trust may use the remainder of these revenues to fund demonstration projects or to provide rebates for customer-sited, commercialized renewable energy equipment, as funds allow.

In FY2023, the Legislature enacted LD 187, An Act to Eliminate the Energy Efficiency and Renewable Resource Fund and to Provide Needs-based Low-income Assistance.[85] The bill discontinued the EERRF, eliminated the voluntary ratepayer contributions, and redirected future ACP revenues to the T&D utilities to provide financial assistance to low-income households. With the passage of this bill, the Trust sought to invest the remaining EERRF fund balance for a constructive purpose consistent with the statutory provisions and the rules of the EERRF. To that end, the Trust decided to use EERRF funds to support the Innovation Program's Hydronic Heat Pump with Thermal Storage Pilot in FY2023.[86]

Agricultural Fair Assistance Program Fund

In late FY2019, the Maine Legislature enacted a bill, LD 1186, An Act to Address Electricity Costs of Agricultural Fairs, requiring the Trust to administer a new program to help agricultural fairs reduce their electricity demand charges. The new law established the Agricultural Fair Assistance Program Fund to support this program.[87] The PUC assesses each electric utility an amount necessary to collect the total value of demand charges paid by agricultural fairs in the state during the prior year. The Trust collected revenues for this fund in FY2021, FY2022, and FY2023. The first round of expenditures on new measures to reduce demand at fairs occurred in FY2023, and all remaining funds were awarded to projects scheduled for completion before the end of the calendar year.

Thermal Energy Investment Fund

In 2021, the Legislature enacted LD 597, An Act to Establish the Thermal Energy Investment Program, requiring the Trust to establish a new program to provide incentives and loans to businesses, municipalities, educational institutions, and non-profit entities for the installation of new thermal energy-derived projects. The new law established the Thermal Energy Investment Fund to support this program. The fund receives ACPs from electricity suppliers that fail to secure their required quota of thermal renewable energy credits (TRECs).[88]

State General Fund

In 2022, the Legislature enacted LD 1554, An Act to Provide Climate Change Transition Assistance for Maine's Energy-intensive Businesses, requiring the Trust to establish an "Industrial Climate Transition Initiative" to develop and support climate change mitigation strategies designed to reduce GHG emissions at industrial facilities in the state. The bill appropriated one-time funding of $500,000 from

[85] Public Law, Chapter 306, 131st Maine State Legislature, LD 187, An Act to Eliminate the Energy Efficiency and Renewable Resource Fund and to Provide Needs-based Low-income Assistance.
[86] For more information on this legislative change and the FY2023 investment, see Other Initiatives – Renewables.
[87] 35-A MRS §10124.
[88] 35-A MRS §3210(9)(C).

the State General Fund to support this initiative.[89,90] The Trust allocated these funds to the C&I Custom Program to support cost-effective energy efficiency projects at industrial facilities.

Also in 2022, the Trust received $3.5 million in one-time funding through the state's supplemental budget to support EV rebates.[91]

Table 21 provides a summary of the Trust's revenues received during FY2023.

Table 21: FY2023 Revenues

Funding Source	Amount
Electric Efficiency Procurement	$47,097,600
Natural Gas Efficiency Procurement	$1,172,949
Regional Greenhouse Gas Initiative	$25,243,465
Forward Capacity Market	$7,248,499
Federal Funds	$7,745,200
Energy Efficiency and Renewable Resource Fund	$159,157
Agricultural Fair Assistance Program Fund	$146,402
Thermal Energy Investment Fund	$692,350
State General Fund	$4,000,000
Interest Income[92]	$1,250,135
Total	**$94,755,707**

Expenditures

The Trust invested more than $84.68 million in FY2023 to fund the activities described throughout this Annual Report, including Major Programs, Other Initiatives, and Strategic Initiatives. Table 22 provides a summary of the Trust's expenditures during FY2023.

[89] Public Law, Chapter 716, 130th Maine State Legislature, LD 1554, An Act To Provide Climate Change Transition Assistance for Maine's Energy-intensive Businesses.
[90] Per the statute, the Industrial Climate Transition Initiative funds flow through the RGGI Fund.
[91] Public Law, Chapter 635, 130th Maine State Legislature, LD 1995, An Act To Make Supplemental Appropriations and Allocations for the Expenditures of State Government, General Fund and Other Funds and To Change Certain Provisions of the Law Necessary to the Proper Operations of State Government for the Fiscal Years Ending June 30, 2022 and June 30, 2023.
[92] Includes investment (bank) interest income and interest income from the Trust's revolving loan funds. The Trust uses bank interest income to offset administration expenses. Loan interest income gets recycled back into the revolving loan funds.

Table 22: FY2023 Expenditures[93]

Use of Funds	Amount
Major Programs	
Commercial and Industrial Custom Program	$5,820,778
Commercial and Industrial Prescriptive Initiatives	$14,170,763
Distributor Initiatives	$8,643,902
Retail Initiatives	$6,915,668
Home Energy Savings Program	$26,582,248
Low-Income Initiatives	$13,791,321
Electric Vehicle Initiatives – EV Rebates	$1,690,688
Demand Management Program	$470,696
Other Initiatives[94]	
Efficiency Maine Green Bank[95]	$747,695
Lead by Example Initiative	$305,998
Agricultural Fair Assistance Program	$9,920
Thermal Energy Investment Program	$6,591
High-Performance Affordable Housing Pilot	$278,302
Electric Vehicle Initiatives – EV Supply Equipment[96]	$781,671
Strategic Initiatives and Administration	
Strategic Initiatives	$2,148,017
Administration	$4,299,328
Other Payments[97]	$107,420
Total Use of Funds	**$86,771,276**

Statutory Budget Allocation Requirements

The Efficiency Maine Trust Act requires the Trust to allocate budgets and deploy strategies for the Electric Efficiency and Conservation Fund and the Natural Gas Conservation Fund in a manner that

[93] Reporting on metrics for Major Programs and Other Initiatives elsewhere in this Annual Report (Table 5 and Table 6, throughout the Major Program chapters, and in Appendix B) is based on project completion dates, while Table 22 reflects accrual-basis accounting. This results in some variance due to timing differences.
[94] This table only lists those Other Initiatives that expended funds in FY2023 (i.e., those with no expenditures are not listed.)
[95] Reflects loan servicing support expenditures only (i.e., not the loans themselves). For detail on FY2023 loan activity, see the Other Initiatives – Efficiency Maine Green Bank section.
[96] As elsewhere in this report, the Trust includes EV Initiatives' EVSE expenditures with Other Initiatives and EV Initiatives' rebate metrics with Major Programs. The reason is that, while EV chargers are critical infrastructure for promoting the increased use of EVs, unlike all other Major Programs, chargers do not, by themselves, save any energy. Nevertheless, because EVSE is such an integral element of the Trust's EV Initiatives, descriptions of the associated FY2023 activity are included in the EV Initiatives chapter in the Major Programs section.
[97] Includes payments to MTI for its share of the EERRF, payments to DEP for its RGGI-related administration costs, and payments for administration costs to RGGI Inc. (the non-profit entity that manages RGGI).

gives all customers a "reasonable opportunity to participate" in its programs.[98,99] The statute expressly directs the programs paid for through these funds to satisfy specific budget allocations for two customer groups: *low-income residential customers* and *small business customers*. This section provides an overview of the statutory budget allocation requirements for these customer groups and how the Trust met these targets in FY2023.[100]

For the Electric Efficiency and Conservation Fund, the statute states that the Trust must target at least 10% of funds or $2.6 million, whichever is greater, to low-income residential consumers and small business consumers, respectively.[101]

As described in Triennial Plan V,[102] the Electric Efficiency and Conservation Fund target for low-income customers is 10% of the Fund's total program budget. The plan set out to achieve this target by combining funding from three programs, as follows: (1) 100% of the Electric Efficiency Procurement budget for Low-Income Initiatives; (2) the portion of program spending in Distributor Initiatives that is attributable to purchases by low-income customers; and (3) the portion of program spending in Retail Initiatives that is attributable to purchases by low-income customers. Table 23 shows the Trust's expenditures in each of these categories in FY2023, for a total investment of $2,876,647. This represents 7.8% of the Electric Efficiency and Conservation Fund's total program budget, falling 2.2% (or $804,628) short of the 10% target for this year. The Trust attributes this shortfall primarily to two factors. First, there was a significant decrease in responses to the Low-Income Initiatives' direct-mail activity. Second, the direct installation initiative to put new heat pump water heaters in low-income homes resulted in replacing a higher number of old tankless coil systems than had been originally forecast, and a lower number of electric resistance systems than had been originally forecast.[103] As a result, less of the initiative's cost was billed to the Electric Efficiency and Conservation Fund than had originally been forecasted (as more of it was billed to the RGGI and NECEC funds that are used where the measure savings is primarily heating fuels). It is worth noting that low-income customers also benefited from the LEDs, clothes washers, and room air purifiers incentivized through Retail Initiatives, but because the precise proportion is difficult to quantify, the Trust did not attribute any portion of the budget for those measures to meet the low-income allocation.

[98] 35-A MRS §10110(2)(B) and 35-A MRS §10111(1)(B).
[99] The Electric Efficiency and Conservation Fund and the Natural Gas Conservation Fund are the fund names provided in statute (35-A MRS §10110 and §10111). The principal revenue sources for these funds are the Electric Efficiency Procurement and the Natural Gas Efficiency Procurement, respectively. The Trust therefore uses the latter terms elsewhere in the report when describing the relevant funding sources.
[100] Chapters 3 and 4 of the Trust's rules provide additional detail on these requirements, as well as specific definitions of "low-income residential consumer" and "small business consumer." See 95-648 Code of Maine Rules (CMR) ch. 3; 95-648 CMR ch. 4.
[101] 35-A MRS §10110(2)(B).
[102] Efficiency Maine Trust, Appendix H: Statutory Budget Allocation Requirements, in *Triennial Plan for Fiscal Years 2023-2025*, 2022.
[103] For additional detail, see the Low-Income Initiatives section.

Table 23: FY2023 Low-Income Electric Expenditures

Program	Expenditures
Low-Income Initiatives	$1,579,951
Portion of Distributor Initiatives	$921,148
Portion of Retail Initiatives	$375,548
Total	**$2,876,647**
10% Target	**$3,681,275**
Variance	**$-804,628**

As also described in Triennial Plan V, the Electric Efficiency and Conservation Fund target for small business customers is 10% of the Fund's total program budget. The plan set out to achieve this target by combining funding from three programs, as follows: (1) 100% of electric spending in the Small Business Initiative (SBI is a discrete initiative within the Commercial and Industrial Prescriptive [CIP] Initiatives); (2) a portion of the spending from the Fund for all other initiatives in the CIP Initiatives attributable to projects completed at small businesses; and, (3) a portion of the spending from the Fund for Retail Initiatives attributable to projects completed at small businesses. Table 24 shows how the Trust exceeded the statutory allocation requirement through the activities of these three programs in FY2023.

Table 24: FY2023 Small Business Electric Expenditures

Program	Expenditures
CIP Initiatives	
Small Business Initiative	$2,284,687
Portion of CIP Initiatives Other	$1,765,993
Portion of Retail Initiatives	$268,017
Total	**$4,318,697**
10%	**$3,681,275**
Variance	**$637,422**

For the Natural Gas Conservation Fund, the statute states that Trust must apportion funds such that a "reasonable" percentage of the available funds is directed to programs for low-income residential consumers and small business consumers.[104] As described in Triennial Plan V, the Trust determined that low-income households represented significantly less than 1.0% of total natural gas load, and therefore applied 1.0% of the total program budget for the Natural Gas Conservation Fund to the Low-Income Initiatives ($15,278 in FY2023). Actual natural gas spending in the Low-Income Initiatives in FY2023 was $13,482, falling slightly short of budget. The relatively low budget amount and limited universe of cost-effective measures provides few opportunities to expend the available funds. The Trust's natural gas programs define a small business consumer as a commercial customer of a gas distribution utility that has an annual usage of 40,000 centum cubic feet (CCF) or less. In a 2021 study, the Trust found that 28% of participants in the CIP program's natural gas offerings were small businesses, a significant fraction of participation and a reasonable share of the overall budget for natural gas programs. That study will periodically revisit and report on small business participation in the program.

[104] 35-A MRS §10111(1)(B).

Though the Trust's statutory requirements for budget allocation are specific to procurement funds (i.e., the Electric Efficiency and Conservation Fund and the Natural Gas Conservation Fund), the Trust also allocated additional funding streams to programs to support low-income and small business customers in Triennial Plan V. The full suite of funds invested in low-income customers in FY2023 is summarized in Table 25. The approximately $14 million invested represents slightly more than 18% of the Trust's overall program spending.

Table 25: FY 2023 Low-Income Expenditures (All Funding Streams)

Program	Expenditures
Portion of Low-Income Initiatives[105,106]	$12,607,350
Portion of Distributor Initiatives	$921,148
Portion of Retail Initiatives	$375,548
Portion of EV Initiatives	$175,000
High-Performance Affordable Housing Pilot	$278,302
Total	**$14,357,348**

[105] Excludes the portion of Low-Income Initiatives spending that was dedicated to moderate-income households and reflects spending on low-income households only.
[106] Includes portion of Innovation Program's Whole-Home Heat Pump Solutions Pilot spending dedicated to manufactured homes. Though the pilot was managed and funded through the Innovation Program, the associated costs and savings are included in the Low-Income Initiatives results.

Audit Results

The independent certified public accountant firm of Runyon, Kersteen, Ouellette, Inc., issued an audit report on the Trust's activities for the year ended June 30, 2023. The report covered the Trust's internal control over financial reporting and compliance with government accounting standards and financial statements. The report was unanimously accepted by the Board of Trustees on October 3, 2023.

The report of the audit of the Trust's financial statements delivered an "unmodified opinion" and found it "free from material misstatement" related to the Trust's internal controls. The auditors wrote:

> In our opinion, the financial statements … present fairly, in all material respects, the respective financial position of the governmental activities and the major fund of the Efficiency Maine Trust, as of June 30, 2023, and the respective changes in financial position for the year then ended in accordance with accounting principles generally accepted in the United States of America.[107]

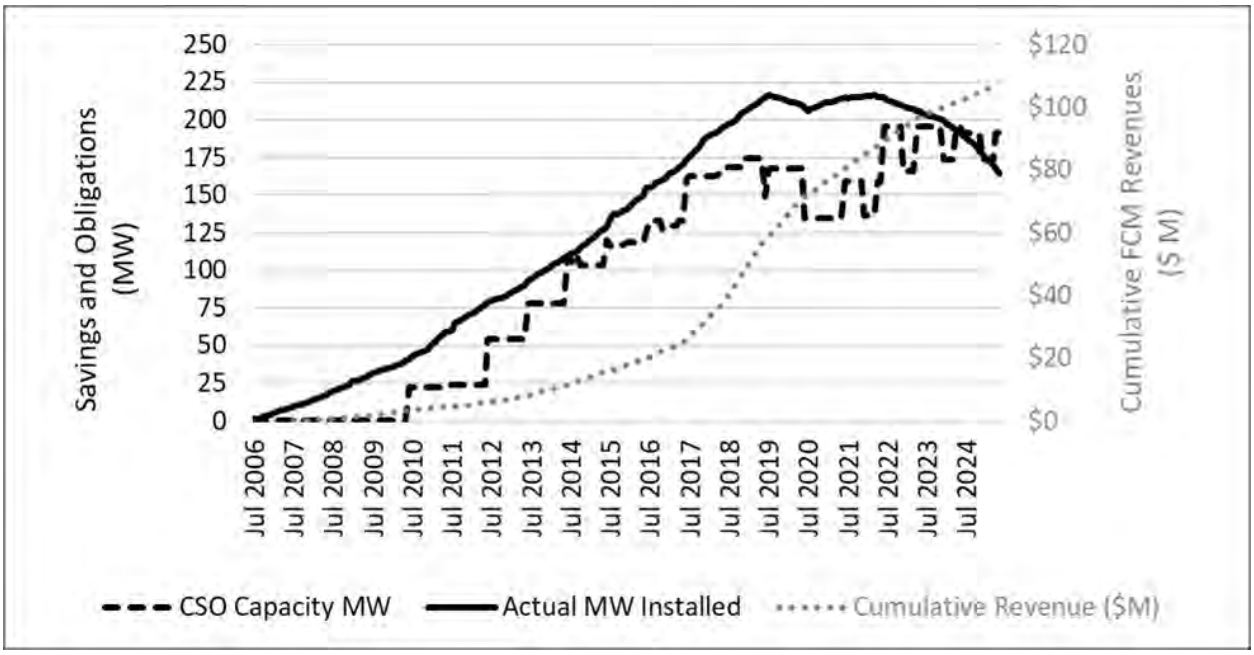
As reported in the audit, the Trust's FY2023 revenues and expenditures are $94,755,707 and $86,663,856, respectively, plus another $107,420 sent to state agencies resulting in an increase to fund balance of $7,984,431. The Trust's governmental fund balance as of June 30, 2023 is $100,274,205 of which $74,143,658 is restricted for operations and programs and $26,130,547 is restricted for grant and revolving loan activity.

ISO-New England

In FY2023, the Trust participated in the 17th Forward Capacity Auction (FCA). The Trust maintained its existing resources totaling 151 MW of summer peak demand savings, for which it will be paid a price of $2.590 per kW per month. The Trust also prepared for the 18th FCA, which will be held in February 2024. By the end of FY2023, the Trust's programs had delivered a total of 214 MW of summer peak demand savings. This represents a decline from past years due in large part to the fact that another 11 MW of measures installed in prior years reached the end of their expected life and expired out. Figure 1 summarizes the Trust's delivered savings and near-term future obligations.

[107] Efficiency Maine Trust, "Annual Financial Report for the Year Ended June 30, 2023," prepared by Runyon, Kersteen, Ouellette, Inc., October 4, 2023, p.1.

Figure 1: Summary of the Trust's FCA Actions



CSO = Capacity Supply Obligation.

Regional Greenhouse Gas Initiative

Each year, the Trust must report out on its RGGI expenditures and associated program results to both RGGI Inc. (the non-profit corporation created to support development and implementation of RGGI) and the Legislature.

The RGGI Annual Report to the Legislature covers all items related to the implementation of RGGI, and is collaboratively prepared by DEP, the PUC, and the Trust. The report is submitted to two legislative committees: the Joint Standing Committee on Environment and Natural Resources and the Joint Standing Committee on Energy, Utilities and Technology. In the most recent report, the Trust described how it invested over $14 million of RGGI funds in FY2022. The RGGI funds expended in that year are projected to result in annual savings of approximately 1.6 million kWh, 154,646 MMBtu, and 13,291 tons of carbon dioxide.

Administration

In FY2023, Governor Mills reappointed Ken Colburn and Mark Isaacson to the Efficiency Maine Trust Board of Trustees for another three-year term.

The Board of Trustees elected the following officers in FY2023:

- Suzanne MacDonald, Chair
- Glenn Poole, Vice-Chair

- Kenneth Colburn, Treasurer
- Joan Welsh, Secretary

The Board of Trustees approved one update to the Trust's administrative policies in FY2023. The Trust's original Bylaws required participants to meet in person. When the COVID-19 pandemic hit, the Trust modified its Bylaws to allow for remote participation during the pendency of the restrictions and challenges associated with the pandemic. In light of the changes in circumstances from the start of the pandemic to the present, the Board voted to amend Sections 4.5 and 4.10 of the Bylaws to describe the terms and conditions under which remote participation will be enabled going forward.

The Board of Trustees also approved a new administrative rule in FY2023: Chapter 5 – Commercial Property Assessed Clean Energy (C-PACE) Program Regulations. In 2021, the Legislature enacted Maine's enabling C-PACE legislation, authorizing the Trust, a third party contracted by the Trust, or a municipality that has adopted a C-PACE ordinance to establish a C-PACE program. The rule enumerates underwriting standards; quality assurance provisions; and how the program will be administered, whether administered by the Trust (or its agent) or by a municipality.

Legislative Recommendations

The Trust's authorizing statute provides that the Annual Report should include "[a]ny recommendations for changes to the laws relating to energy conservation."[108] The Trust does not have any such recommendations at this time.

[108] 35-A MRS §10104(4).

Organizational Initiatives and Collaborations

In FY2023, the Trust engaged in various state, regional, and national forums that advance its mission. Within Maine, the Trust monitors and participates in state initiatives and proceedings with an eye to supporting policies and programs that will promote cost-effective energy conservation or GHG reductions, consistent with the purposes given to the Trust in the Efficiency Maine Trust Act. Additionally, the Efficiency Maine Trust Act provides that: "The trust shall monitor conservation planning and program development activities in the region and around the country…" and also that "The trust may coordinate its efforts under this section with similar efforts in other states in the northeast region…" Accordingly, the Trust engages with a number of regional and national initiatives. A brief description of the relevant organizational initiatives and collaborations follows.

Legislature

In FY2023, the Trust participated in public hearings and work sessions of the Maine Legislature to fulfill its duty as "a champion for funding cost-effective energy and energy efficiency programs."[109] The Trust staff provided information, analysis, and testimony on matters directly relating to the Trust's programs and issues of energy conservation, customer-sited alternative energy systems, or GHG emissions reductions. A sampling of the bills that the Trust monitored or participated in discussing includes:

- LD 187, An Act to Eliminate the Energy Efficiency and Renewable Resource Fund and to Provide Needs-based Low-income Assistance;
- LD 207, Resolve, Directing the Commissioner of Public Safety to Establish a Stakeholder Group to Examine the Responsibilities, Fees and Duties of the Technical Building Codes and Standards Board;
- LD 256, An Act to Add Electric Bicycles to the Electric Vehicle Rebate Program;
- LD 258, An Act Making Unified Appropriations and Allocations from the General Fund and Other Funds for the Expenditures of State Government and Changing Certain Provisions of the Law Necessary to the Proper Operations of State Government for the Fiscal Years Ending June 30, 2023, June 30, 2024 and June 30, 2025 (see Section NNNN);
- LD 327, An Act to Provide Maine Ratepayers with Equitable Access to Interconnection of Distributed Energy Resources;
- LD 467, Resolve, to Study Accessible EV Charging Stations;
- LD 519, Resolve, to Conduct a Vehicle-to-grid Pilot Project Using Electric School Buses;
- LD 542, Resolve, Directing the Public Utilities Commission to Investigate Time-of-use Rates;
- LD 815, An Act to Provide Energy Efficiency Program Outreach and Assistance to Manufactured Housing Residents;

[109] 35-A MRS §10104(2)(B).

- LD 952, Resolve, to Create a 21st Century Electric Grid;
- LD 1101, An Act to Support Lower Home Energy Costs by Establishing a Home Energy Scoring System;
- LD 1724, An Act to Enact the Beneficial Electrification Policy Act of 2023;
- LD 1850, An Act Relating to Energy Storage and the State's Energy Goals; and
- LD 1887, An Act to Clarify the Review and Procurement Process for Nonwires Alternatives.

Public Utilities Commission

The Trust staff was active in proceedings at the PUC in FY2023. The Trust staff filed and presented necessary testimony, evidence, comments, briefs, and exceptions related to the development, review, and approval of the Trust's Significant Changes to the Fifth Triennial Plan, Annual Update to the Triennial Plan, and related dockets. A selection of the relevant dockets that were active in FY2023 included:

- Docket No. 2021-00380 – Request for Approval of Fifth Triennial Plan for Fiscal Years 2023-2025 Pertaining to Efficiency Maine Trust; and
- Docket No. 2022-00039 – Public Utilities Commission Procurement of Electric Resources and Assessment for Natural Gas Resources for Fifth Triennial Plan FY 2023-2025.

In addition to the Triennial Plan dockets, the Trust staff also engaged in other proceedings at the PUC that have a direct or indirect impact on the Trust's programs. Other cases that the Trust engaged with in FY2023 included:

- Docket No. 2019-00217 – Commission Initiated Request for Proposals for Pilot Programs to Support Beneficial Electrification of the Transportation Sector (Public Law 2019, Chapter 365, Section 5);
- Docket No. 2021-00325 – Commission Initiated Investigation into Transmission and Distribution Utility Rate Design to Promote State Policies;
- Docket No. 2022-00160 – Commission Initiated Investigation into Stranded Cost Rate Design;
- Docket No. 2022-00152 – Request for Approval of a Rate Change Pertaining to Central Maine Power Company;
- Docket No. 2022-00255 – Request for Approval of a Rate Change Pertaining to Versant Power;
- Docket No. 2022-00322 – Commission Proceeding to Identify Priorities for Grid Plan Filings;
- Docket No. 2022-00345 - Commission Initiated Inquiry into Proposed Changes to Small Generator Interconnection Procedures;
- Docket No. 2023-00019 – Commission Initiated Inquiry regarding Rate Structure for Standard Offer Service; and
- Docket No. 2023-00103 – Commission Initiated Rulemaking for Small Generator Interconnection Rule Chapter 324.

For more on the dockets related to Non-Wires Alternatives, please see the Non-Wires Alternatives section.

Governor's Energy Office and Governor's Office of Policy Innovation and the Future

The Trust worked with GEO to report energy data and program results to the U.S. Department of Energy (DOE), Maine's federal delegation, ISO-NE, the American Council for an Energy-Efficient Economy, and other non-profit and academic initiatives seeking energy data from Maine. The Trust conferred with GEO on legislation pending at the Legislature and certain dockets pending at the Public Utilities Commission. The Trust also collaborated with both GEO and GOPIF on a variety of issues and initiatives, including conferring on the use of existing and potential future investments of federal funds, activities related to the Maine Climate Council, the Maine Climate Council's Industrial Innovation Task Force, Maine's Plan for EV Infrastructure Deployment (PEVID), and the Lead by Example Initiative to spur energy upgrades at state properties. In some cases, these collaborations are described in the subsections below in further detail.

MaineHousing

The Trust conferred with the Maine State Housing Authority (MaineHousing) on developing updates to MaineHousing's annual plan for the DOE Weatherization Assistance Program and the HEAP Weatherization and Central Heating Improvement Program initiatives. As it does every year, in FY2023 MaineHousing briefed the Trust's Board, at a public meeting, on the elements of the coming year's weatherization plans. This briefing gave the Trust the opportunity to ask questions and provide input regarding lessons learned, best practices, and ways to ensure that similar initiatives at the Trust are complementary and not duplicative.

The Trust also continued to coordinate with MaineHousing on heat pump programs in FY2023. In recent years, MaineHousing has allocated a portion of its federal HEAP funds for heat pump installations in support of the state's heat pump goals. It has also received other federal grant funds to pursue heat pump installations in low-income homes. MaineHousing bases the portions of its heat pump program design elements on the Trust's existing equipment criteria, installation requirements, and inspection training protocols. As with weatherization initiatives, the two organizations worked to develop programs that are complementary and not duplicative.

The Trust's authorizing statute requires that it include in the Annual Report:

> Total funds received and expended by the State on energy efficiency and weatherization pursuant to the Weatherization Assistance for Low-income Persons Program of the United States Department of Energy and the Low-income Home Energy Assistance Program of the United States Department of Health and Human Services.[110]

[110] 35-A MRS §10104(5)(B)(4).

The budgets and expenses of these initiatives are summarized in Table 26, which was prepared by MaineHousing.

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Table 26: MaineHousing Energy Efficiency and Weatherization Initiatives

MaineHousing
MAINE STATE HOUSING AUTHORITY

Weatherization Readiness - Funding provided by DOE Annual funds as well as State Housing Opportunities for Maine (HOME) funding through the Home Accessibility Repair Program. This program component was first offered in 2022, and households must meet eligibility criteria for weatherization.

Services include: repair or replacement of items which would not allow a household to receive weatherization services. Weatherization services must be completed within 6 months.	Calendar Year	Households Assisted	Production Expense
	2023	*27*	*$ 253,678.70*
	2022	2	$ 15,920.00

Weatherization - Funding provided by DOE Annual funds and HEAP grant. Eligible households must be at or below 200% of federal poverty and have an energy audit completed for assessment of services.

Services include: air sealing, installation of insulation, health & safety measures as well as replacement of an appliance and water heater (upon available funding).	Calendar Year	Households Assisted	Production Expense
	2023	*129*	*$ 1,621,455.52*
	2022	316	$ 3,206,175.00
	2021	303	$ 2,795,934.00
	2020	359	$ 2,885,403.00

Central Heating Improvement - Funding provided by HEAP grant as well as State HOME funding. This program will provide services for centrally installed heating systems including oil tanks and chimney services. Eligible households must meet HEAP eligibility criteria.

	Calendar Year	Households Assisted	Production Expense
Heating System Replacement	*2023*	*491*	*$ 2,934,481.03*
Heating System Repair		*841*	*$ 397,437.14*
Heating System Replacement	2022	960	$ 4,624,718.71
Heating System Repair		1546	$ 662,588.57
Heating System Replacement	2021	813	$ 3,455,802.97
Heating System Repair		1300	$ 268,020.64
Heating System Replacement	2020	811	$ 3,307,952.32
Heating System Repair		1341	$ 515,276.39

Heat Pump - Funding provided by HEAP grant as well as the Sustainable Energy for Residential Consumers (SERC) grant from DOE. Eligible households must be at or below 200% of federal poverty.

Services include: installation of a heat pump in a household to reduce the overall energy burden as well as electrical panel upgrade if necessary.	Calendar Year	Households Assisted	Production Expense
	2023	*463*	*$ 1,957,033.28*
	2022	1697	$ 6,355,729.82
	2021	901	$ 2,911,527.85
	2020	304	$ 878,835.60

Prepared by MaineHousing 8.25.2023; 2023 data does not reflect the full calendar year.

Department of Environmental Protection

In FY2023, the Trust worked with DEP on multiple issues. DEP is Maine's administrative liaison to RGGI Inc., the non-profit entity that manages RGGI. In FY2023, the Trust and DEP, together with the PUC, continued their practice of preparing an annual report for the Legislature on RGGI activities and results in Maine. The Trust's executive director and the DEP commissioner also served as co-chairs of the Maine Climate Council's Industrial Innovation Task Force. (See the Maine Climate Council section for more detail.)

Department of Transportation

The Trust works closely with the MaineDOT on a number of issues and initiatives related to EV charging infrastructure. In FY2023, the Trust administered MaineDOT's $8 million MJRP allocation to expand publicly accessible EV charging stations, conferring with the department on plans and strategies and providing regular updates on performance metrics required for federal reporting. The Trust also collaborated with MaineDOT in the development of the State's plan for the allocation of nearly $19 million through the National EV Infrastructure (NEVI) Program and in its $15 million application to the Federal Highway Administration's Charging and Fueling Infrastructure (CFI) Discretionary Grant Program in FY2023. The Trust and MaineDOT also partnered with GEO, GOPIF, and DEP to launch "Recharge Maine," the State's branding of the initiative to develop a network of public, high-speed EV chargers across Maine.

Department of Health and Human Services

DHHS provides health and social services to approximately a third of the State's population, including children, families, older Mainers, and individuals with disabilities, mental illness, and substance use disorders. It operates a number of state and federal programs for which low income and/or limited assets are criteria for eligibility (e.g., SNAP for food assistance, TANF for cash assistance, and MaineCare for medical insurance coverage). The Trust works closely with DHHS to verify which individuals are participating in these income-eligible programs, while maintaining confidentiality, in order to determine that these individuals are eligible for the Trust's initiatives aimed at helping low-income Mainers.

Office of the Public Advocate

In its role representing the interests of Maine utility consumers, OPA provides valuable insight into the Trust's programs. The Trust actively collaborates with OPA on the Arrearage Management Program and on the NWA assessment process. In FY2023, the NWA team worked jointly to implement and refine procedures to efficiently review the utilities' investment plans for their T&D systems. For more detail, see the Non-Wires Alternatives section.

Maine Climate Council

In 2019, the Legislature passed a bill establishing the Maine Climate Council to develop a four-year Climate Action Plan that would put Maine on a trajectory to reduce emissions by 45% by 2030 and at least 80% by 2050.[111] The Council and its six Working Groups are composed of scientists, business leaders, environmental advocates, local and state officials, and engaged citizens. The Trust was named as an ex-officio member of the Council and was asked to serve as co-chair for the Working Group on Buildings, Infrastructure, and Housing. The Trust was also actively involved in the Energy Working Group and the Transportation Working Group. Each Working Group was charged with developing, analyzing, and recommending strategies to inform the Council's plan to mitigate emissions and support resilience in Maine's various sectors. The Council presented a four-year Climate Action Plan to the Governor and Legislature on December 1, 2020.

One strategy identified in the Climate Action Plan was for Maine to create an Industrial Innovation Task Force through which industry and stakeholders could collaborate to study and pilot innovations and incentives to reduce carbon emissions from Maine's industrial processes. The Trust worked with GEO and DEP to launch the Industrial Innovation Task Force in FY2021 and convened the group throughout FY2022. As noted above, the Trust's executive director and DEP's commissioner serve as co-chairs of this group. In FY2023, GEO interviewed members of the task force about past, ongoing, and future energy-related projects, seeking additional detail on energy manager staff positions and company decarbonization goals. Members were also asked to provide policy feedback and input on future discussion topics for the larger task force. The group will continue meeting and discussing potential technology applications and grant opportunities in FY2024.

The Trust's executive director will continue to serve as co-chair of the Working Group on Buildings, Infrastructure, and Housing in the coming year as the Maine Climate Council prepares to update the State's Climate Action Plan by December 2024.

Lead by Example

The Governor's Executive Order 13, FY 19/20, An Order for State Agencies to Lead by Example through Energy Efficiency, Renewable Energy and Sustainability Measures, directs state agencies to meet or exceed the state's renewable energy and GHG reduction targets.[112] The Order names the Trust as a member of the Sustainability Leadership Committee, working with sustainability coordinators from GEO, GOPIF, DEP, the Department of Administrative and Financial Services, and MaineDOT to lead development and implementation of plans, seek consistency and cost efficiencies where appropriate,

[111] Public Law, Chapter 476, LD 1679, 129th Maine State Legislature, An Act To Promote Clean Energy Jobs and To Establish the Maine Climate Council.
[112] Maine Executive Order No. 13, FY 19/20, An Order for State Agencies to Lead by Example Through Energy Efficiency, Renewable Energy and Sustainability Measures, November 26, 2019.

and track progress.[113] The Trust updated the group in FY2023 about progress making an inventory of the State's properties and developing projects to convert some of these properties to heat pumps through its own Lead by Example Initiative.

Electric Ratepayer Advisory Council

In April 2022, the Legislature enacted LD 1913, An Act To Create the Electric Ratepayer Advisory Council.[114] The stated goal of the council is to evaluate measures to make electricity more affordable in Maine, and to advise the Public Advocate on these potential measures. The statute placed the Trust's executive director (or their designee) as one of five ex officio members of the 18-member council. The council convened several meetings in FY2023 and generated a report to the Legislature.

Equity

The Trust's work, and Triennial Plan V (FY2023-2025), reflect the priority of enhancing fairness and promoting equity. A degree of fairness in the Trust's programs is advanced by ensuring that statutory minimum funding levels are allocated to low-income customers and to small business customers.[115] Equity and cost considerations factor into all of the Trust's budget allocations and program designs, but particularly those targeted at low- to moderate-income households and small businesses. For these customers, the barriers to accessing energy efficiency and clean energy upgrades tend to be greater, and they commonly need more support to participate in the Trust's programs.

The Trust also maintains a strong focus on geographic equity in its programs. In FY2023, that geographic focus included a special effort to develop EV charging projects in Aroostook and Washington counties, and to target and measure federally funded MJRP investments in priority communities.[116] These efforts were guided by work done to identify priority communities through the Justice40 Initiative and the Maine Climate Council. The Trust also relies on its Low-Income Advisory Group, the EV Advisory Group, Recharge Maine, and others to help staff consider income-related equity issues in its program designs and implementation.

In FY2023, the Trust held three all-staff diversity, equity, and inclusion trainings with a professional facilitator. In addition, members of the Trust's internal equity working group supported programmatic equity goals as well as within internal operations. These staff members participated in a number of industry trainings around equity initiatives and concerns; they also learned about industry best practices, researched equity metrics, and planned internal staff training activities. Moving into FY2024,

[113] For more information on the Trust's programmatic LBE activities, see Other Initiatives – Lead by Example Initiative.
[114] Public Law, Chapter 623, LD 1913, 130th Maine State Legislature, An Act To Create the Electric Ratepayer Advisory Council.
[115] For additional detail, see the Finance and Administration – Statutory Budget Allocation Requirements section.
[116] The priority communities targeted through the Trust's MJRP initiatives include economically disadvantaged communities; rural areas and small towns; and small businesses. For additional detail on these initiatives and their equity metrics, see Appendix F: Maine Jobs and Recovery Plan Initiatives.

the Trust will continue to engage in meaningful equity initiatives, in particular those equity priorities as outlined in the Trust's federally funded MJRP initiatives.

Workforce Development

The Trust monitors workforce capacity and skillsets as part of its planning and implementation of efficiency programs. Where the Trust identifies educational topics related to designing, installing, and maintaining high-efficiency equipment, it may support targeted training and other means of promoting quality assurance. During FY2023, the Trust sponsored trainings for heat pump installers and provided scholarships for heat pump and Building Performance Institute training. It hosted webinars for contractors to learn about the latest technology and building energy code developments. It also supported GEO in its work leading the Maine Clean Energy Partnership and its efforts to develop the clean energy workforce in Maine.

Codes and Standards

State and local building codes and equipment standards are occasionally the subject of policy change. When this happens, it can impact energy efficiency programs in various ways. For example, in 2019 the Maine Legislature reformed Maine's regulatory framework for building codes. The reforms included establishing a requirement that the Maine Uniform Building and Energy Code (MUBEC) be updated and made effective in every municipality across the state. The statute named the Trust's executive director as an ex officio member of the MUBEC Technical Board and mandated that the Board establish a "stretch code" that municipalities may elect to adopt. With the arrival of these new codes in FY2021, the Trust offered seven free training workshops on code provisions and best practices for compliance. These workshops were facilitated by the Maine Indoor Air Quality Council. The workshop video recordings and presentations remained available on the Trust's website in FY2023. Also in FY2023, the MUBEC Board worked to update the statewide building codes to the 2021 edition of the International Code Council set of codes.

Other Related Initiatives

The Trust typically engages in initiatives and forums to discuss policies or advance programs relevant to the Trust's purpose and activities. As described in the Public Information and Outreach section, the Trust was invited to present its work at several regional and national conferences and workshops.

Appendices

Appendix A: Energy Savings and Benefit-to-Cost Ratios

Tables A-1, A-2, and A-3 illustrate the total energy savings and lifetime avoided energy supply costs associated with Major Programs and Other Initiatives that the Trust administered in FY2023. Positive savings represent a decrease in electricity or fuel use (MWh or MMBTU, respectively). Negative savings represent an increase in electricity or fuel use. Primary and secondary energy impacts (positive and negative) are reported for each program. For example, a project that installs an efficient clothes washer will report positive electricity savings from the more efficient installed equipment and will also report fuel savings due to lower hot water use to capture fuel savings from fuel-fired water heating equipment. In the case of fuel-switching, positive savings occur for the replaced energy source and negative savings (increased use) occur for the replacement energy source. As an example, a combined heat and power unit offsets electricity (resulting in savings) while consuming fuel. Another example of fuel switching is replacing an oil-fired water heater with a heat pump water heater that results in an increase in electricity and a decrease in oil use. The reported savings values are "adjusted gross savings" unless otherwise indicated. Adjusted gross savings reflect the change in energy consumption and demand that results directly from program-related actions taken by participants in an Efficiency Maine program, regardless of why they participated, adjusted by factors developed through program evaluations.[117].

[117] Periodically, the Trust enlists independent third-party contractors to evaluate the savings impacts of major programs. The evaluations help the Trust develop factors to improve the accuracy of gross savings calculations based on installation rates and actual, site-verified savings rates. The evaluations are also used to analyze program attribution, including identifying program participants who would have installed the same or equivalent efficiency measures on their own even if the program had not been offered ("free ridership" [FR]) and the percentage of efficient equipment installed due to program influences even though no incentive or TA was received ("spillover" [SO]). Factoring in free ridership and spillover delivers "net savings," which quantifies the savings directly (adjusted gross minus FR) and indirectly (SO) attributable to the program. The Trust publishes the FR and SO factors in the Technical Reference Manuals (TRMs).

Table A-1: FY2023 Energy Savings – Major Electric Programs

Program	Summer Peak Reduction (MW)	Annual Electric Savings (MWh)	Annual Non-Electric Savings (MMBtu)	Lifetime Electric Savings (MWh)	Lifetime Non-Electric Savings (MMBtu)	Annual GHG Savings (tons CO_2E)
Commercial and Industrial Custom Program – Electric	0.741	7,450	-9,702	115,744	-194,044	1,837
Commercial and Industrial Prescriptive Initiatives – Electric	4.448	29,202	-8,865	384,965	-70,269	9,584
Distributor Initiatives – Electric	0.495	6,240	34,947	92,846	454,311	5,059
Retail Initiatives – Electric	3.725	27,865	-16,449	84,255	138,661	8,492
Home Energy Savings Program – Electric	1.697	-15,806	288,271	-284,506	5,188,887	17,980
Low-Income Initiatives – Electric	0.364	3,594	-988	31,240	-2,198	1,188
Demand Management Program	7.491	-	-	-	-	-
Total	18.962	58,546	287,214	424,544	5,515,348	44,139

Table A-2: FY2023 Energy Savings – Major Thermal Programs

Program	Summer Peak Reduction (MW)	Annual Electric Savings (MWh)	Annual Non-Electric Savings (MMBtu)	Lifetime Electric Savings (MWh)	Lifetime Non-Electric Savings (MMBtu)	Annual GHG Savings (tons CO_2E)
Commercial and Industrial Custom Program – Natural Gas	-	-	6,594	-	98,913	385
Commercial and Industrial Custom Program – Unregulated Fuels	-0.142	-1,212	158,227	-23,653	3,110,518	12,503
Commercial and Industrial Prescriptive Initiatives – Natural Gas	-	17	31,744	226	670,214	1,858
Commercial and Industrial Prescriptive Initiatives – Unregulated Fuels	0.132	-1,495	36,212	-27,817	674,083	2,432
Distributor Initiatives – Natural Gas	-	-	975	-	24,371	57
Home Energy Savings Program – Natural Gas	0.011	13	3,280	303	77,123	196
Home Energy Savings Program – Unregulated Fuels	0.127	1,470	40,320	34,128	940,188	3,814
Low-Income Initiatives – Natural Gas	-	-	38	1	713	2
Low-Income Initiatives – Unregulated Fuels	0.047	-3,530	66,047	-62,035	1,199,904	4,151
Electric Vehicle Initiatives – EV Rebates[118]	-0.041	-2,976	58,044	-41,668	812,621	3,470
Total	**0.133**	**-7,713**	**401,482**	**-120,515**	**7,608,648**	**28,868**

[118] For the Electric Vehicles Initiatives – EV Rebates, lifetime energy savings reflect gasoline savings associated with rebated EVs, net of the increased electricity use associated with charging those EVs (converted to MMBtu). Monetized impacts of gasoline savings and estimated avoided maintenance costs for EV ownership are included in the benefits. Participant Costs reflect those associated with EV rebates; they reflect both the customers' share of the incremental costs to purchase the vehicle and new electricity costs associated with charging those EVs.

Table A-3: FY2023 Energy Savings – Other Initiatives[119]

Initiative	Summer Peak Reduction (MW)	Annual Electric Savings (MWh)	Annual Non-Electric Savings (MMBtu)	Lifetime Electric Savings (MWh)	Lifetime Non-Electric Savings (MMBtu)	GHG Savings (tons CO_2E)
Lead By Example Initiative	0.003	-20	333	-325	5,532	20
Agricultural Fair Assistance Program	0.003	-4	15	-81	265	0
Total	0.006	-24	348	-406	5,797	20

[119] This table only lists those Other Initiatives that generated energy savings in FY2023 (i.e., those with no energy savings are not listed.)

Appendix B: Benefit-to-Cost Ratios

Two different cost tests are used to assess a program's cost-effectiveness: the Primary Benefit-Cost test, from the perspective of all utility customers (participants and non-participants), and the Program Administrator Cost Test (PACT), from the perspective of the program administrator (utility, government agency, or third-party implementer). The criteria for the two cost tests are as follows:

Primary test – The Primary test compares combined program administrator and customer costs to utility resource savings. The Primary test measures the benefits of the energy efficiency program for the region. Costs included in the Primary test are those used to purchase and install energy efficiency measures, including the costs incurred by program participants, costs incurred due to increased energy use, and costs of running the energy efficiency program. The benefits included are the avoided energy supply cost, avoided cost of water, and when quantifiable, avoided operation and maintenance costs.

PACT – The PACT compares program administrator costs to supply-side resource savings. A positive PACT (>1) indicates that an energy efficiency program is a lower-cost approach to meeting load growth than a wholesale energy purchase and new generation resources (including delivery and system costs). The PACT includes only costs incurred by the program administrator and not customer contributions.

Table B-1: Benefit-to-Cost Ratios – Major Electric Programs

Program	Adjusted Gross Benefit-to-Cost Ratio		Last Evaluation	Net-to-Gross Ratio	Net Benefit-to-Cost Ratio	
	Primary	PACT			Primary	PACT
Commercial and Industrial Custom Program – Electric	2.32	8.75	Note 2	76%	1.89	7.00
Commercial and Industrial Prescriptive Initiatives – Electric	3.39	6.92	2023	69%	3.12	6.04
Distributor Initiatives – Electric	3.34	3.79	2021	77%	3.23	3.65
Retail Initiatives – Electric	2.56	3.67	2021	60%	2.41	3.10
Home Energy Savings Program – Electric	1.48	11.10	Note 2	69%	1.46	10.40
Low-Income Initiatives – Electric	4.01	4.19	2020	100%	4.01	4.19
Demand Management Program	2.67	2.67	Note 1	75%	2.33	2.33

Table B-2: Benefit-to-Cost Ratios – Major Thermal Programs

Program	Adjusted Gross Benefit-to-Cost Ratio		Last Evaluation	Net-to-Gross Ratio	Net Benefit-to-Cost Ratio	
	Primary	PACT			Primary	PACT
Commercial and Industrial Custom Program – Natural Gas	2.17	5.24	Note 2	92%	2.15	5.14
Commercial and Industrial Custom Program – Unregulated Fuels	4.43	23.54	Note 2	83%	4.31	23.57
Commercial and Industrial Prescriptive Initiatives – Natural Gas	14.81	23.13	Note 3	50%	14.56	22.51
Commercial and Industrial Prescriptive Initiatives – Unregulated Fuels	1.95	7.85	2023	69%	1.81	6.99
Distributor Initiatives – Natural Gas	2.49	11.38	Note 3	75%	2.48	11.33
Home Energy Savings Program – Natural Gas	0.83	2.04	Note 3	73%	0.69	2.04
Home Energy Savings Program – Unregulated Fuels	1.51	4.57	2019	72%	1.32	4.33
Low-Income Initiatives – Natural Gas	1.10	1.22	Note 3	100%	1.10	1.22
Low-Income Initiatives – Unregulated Fuels	1.34	3.17	2019	100%	1.34	3.17
Electric Vehicle Initiatives – EV Rebates[120]	1.74	16.66	Note 3	79%	1.63	8.21

Note 1 New program, not yet evaluated.

Note 2 Currently being evaluated.

Note 3 Evaluation not scheduled.

[120] The benefit-to-cost ratios for EV Initiatives reflect cost and savings associated with EV rebates only (not EVSE).

Appendix C: Program Expenditures

Table C-1: Expenditures – Major Electric Programs

Program	Incentive	Delivery	Total
Commercial and Industrial Custom Program – Electric	$1,714,716	$713,472	$2,428,188
Commercial and Industrial Prescriptive Initiatives – Electric	$8,792,966	$1,836,152	$10,629,118
Distributor Initiatives – Electric	$7,555,337	$1,061,581	$8,616,918
Retail Initiatives – Electric	$4,947,659	$2,079,725	$7,027,385
Home Energy Savings Program – Electric	$12,827,500	$2,242,648	$15,070,148
Low-Income Initiatives – Electric	$1,061,710	$518,241	$1,579,951
Demand Management Program	$262,185	$208,485	$470,670
Strategic Initiatives – Electric	-	$1,147,774	$1,147,774
Administration – Electric	-	$1,680,723	$1,680,723
Total	**$37,162,073**	**$11,488,802**	**$48,650,874**

Table C-3: Expenditures – Major Thermal Programs

Program	Incentive	Delivery	Total
Commercial and Industrial Custom Program – Natural Gas	$204,979	$62,860	$267,839
Commercial and Industrial Custom Program – Unregulated Fuels	$1,475,573	$417,992	$1,893,565
Commercial and Industrial Prescriptive Initiatives – Natural Gas	$359,187	$9,961	$369,148
Commercial and Industrial Prescriptive Initiatives – Unregulated Fuels	$2,653,858	$557,583	$3,211,441
Distributor Initiatives – Natural Gas	$26,600	$384	$26,984
Home Energy Savings Program – Natural Gas	$539,492	-	$539,492
Home Energy Savings Program – Unregulated Fuels	$9,380,373	$1,565,658	$10,946,031
Low-Income Initiatives – Natural Gas	$13,482	-	$13,482
Low-Income Initiatives – Unregulated Fuels	$9,139,677	$3,295,444	$12,435,120
Electric Vehicle Initiatives – EV Rebates	$1,570,000	$118,587	$1,688,587
Strategic Initiatives – Thermal	-	$632,279	$632,279
Administration – Thermal	-	$2,588,355	$2,588,355
Total	**$25,363,220**	**$9,249,102**	**$34,612,322**

Table C-3: Expenditures – Other Initiatives[121]

Initiative	Incentive	Delivery	Total
Efficiency Maine Green Bank[122]	-	$747,964	$747,964
Lead By Example Initiative	$54,732	$251,266	$305,998
Agricultural Fair Assistance Program	$8,000	$1,920	$9,920
Thermal Energy Investment Program	$6,591	-	$6,591
High-Performance Affordable Housing Pilot	$278,302	-	$278,302
Electric Vehicle Initiatives – EV Supply Equipment	$777,576	$4,591	$782,166
Administration – Other	-	$36,750	$36,750
Total	**$1,125,201**	**$1,042,490**	**$2,167,692**

[121] This table only lists those Other Initiatives that expended funds in FY2023 (i.e., those with no expenditures are not listed.)

[122] Reflects loan servicing support expenditures only (i.e., not the loans themselves). For detail on FY2023 loan activity, see the Other Initiatives – Efficiency Maine Green Bank section.

Appendix D: FY2024 Budget

Table C-2: FY2024 Budget as Approved by the Board of Trustees 10/25/2023

	EMT ADMIN FUND	REGIONAL GREENHOUSE GAS INITIATIVE	ELECTRIC EFFICIENCY PROCUREMENT	MAINE POWER RELIABILITY PROGRAM SETTLEMENT	FORWARD CAPACITY MARKET	FCM HEAT PUMP INITIATIVE	NATURAL GAS EFFICIENCY PROCUREMENT	ENERGY EFFICIENCY & RENEWABLE RESOURCE FUND	AGRICULTURAL FAIRS	THERMAL ENERGY INVESTMENT FUND	VW SETTLEMENT FUNDS	NECEC SETTLEMENT FUNDS	AMERICAN RESUCE PLAN FUNDS	NEVI FUNDS	LD 1995 FUNDS	REVOLVING LOAN FUNDS	FY 2024 TOTAL BUDGET
TOTAL REVENUES AND USE OF FUND BALANCE	4,665,536	44,043,205	63,336,655	320,380	636,601	7,032,558	2,239,418	500,069	514,560	2,000,234	3,335,747	4,611,658	22,710,000	6,966,201	-	950,000	163,862,821
C&I CUSTOM PROGRAM	-	8,116,627	7,910,911	320,380	636,601	-	815,690	-	-	-	-	-	2,425,000	-	-	-	20,225,209
C&I PRESCRIPTIVE PROGRAM	-	5,996,370	17,501,436	-	-	-	540,090	-	-	-	-	423,889	6,790,000	-	-	25,000	31,276,785
Commercial Small Business	-	5,996,370	17,501,436	-	-	-	540,090	-	-	-	-	423,889	6,790,000	-	-	-	31,251,785
Commercial Loan Support	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	25,000	25,000
DEMAND MANAGEMENT	-	-	1,604,926	-	-	-	-	-	-	-	-	-	-	-	-	-	1,604,926
INDUSTRIAL CLIMATE INITIATIVE	-	500,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	500,000
THERMAL ENERGY INVESTMENT PROGRAM	-	-	-	-	-	-	-	-	-	2,000,234	-	-	-	-	-	-	2,000,234
DISTRIBUTOR INITIATIVES	-	335,000	12,230,950	-	-	-	102,041	-	-	-	-	-	-	-	-	-	12,667,991
RETAIL INITIATIVES	-	165,000	7,801,336	-	-	-	-	-	-	-	-	-	-	-	-	-	7,966,336
HOME ENERGY SAVINGS PROGRAM	-	15,955,900	7,043,245	-	-	4,797,141	576,340	-	-	-	-	-	-	-	-	760,000	29,132,626
Home Energy Savings Program	-	15,955,900	7,043,245	-	-	4,797,141	576,340	-	-	-	-	-	-	-	-	-	28,372,626
Revolving Loan Support	-	-	-	-	-		-	-	-	-	-	-	-	-	-	510,000	510,000
Loan Loss Reserve	-	-	-	-	-		-	-	-	-	-	-	-	-	-	250,000	250,000
LOW-INCOME INITIATIVES	-	7,900,000	2,878,972	-	-	1,878,176	16,191	-	-	-	-	-	9,000,000	-	-	-	21,673,339
AGRICULTURAL FAIR INITIATIVES	-	-	-	-	-	-	-	-	514,560	-	-	-	-	-	-	-	514,560
RENEWABLES	-	-	-	-	-	-	-	482,569	-	-	-	-	-	-	-	-	482,569
ELECTRIC VEHICLE SUPPLY EQUIPMENT	-	-	-	-	-	-	-	-	-	-	642,922	1,882,097	3,880,000	6,938,381	-	-	13,343,400
ELECTRIC VEHICLE ACCELERATOR PROGRAM	-	-	-	-	-	-	-	-	-	-	-	2,126,476	-	-	-	-	2,126,476
LEAD BY EXAMPLE INITIATIVE	-	-	-	-	-	-	-	-	-	-	2,592,825	-	-	-	-	-	2,592,825
INNOVATION	-	952,000	864,792	-	-	107,143	15,591	-	-	-	-	-	-	-	-	-	1,939,526
PUBLIC INFORMATION	-	301,344	250,153	-	-	-	9,765	-	-	-	-	-	-	-	-	-	561,262
EM&V	-	439,642	1,472,508	-	-	200,247	38,978	-	-	-	-	-	-	-	-	-	2,151,375
ADMINISTRATION	4,653,830	849,000	3,330,248	-	-	-	109,139	-	-	-	100,000	179,196	615,000	27,820	-	75,179	9,939,412
INTER-AGENCY TRANSFERS	11,706	284,000	447,178	-	-	49,851	15,591	17,500	-	-	-	-	-	-	-	-	825,826
Public Utilities Commission	-	152,000	447,178	-	-	49,851	15,591	-	-	-	-	-	-	-	-	-	664,620
RGGI Rate Relief	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-
RGGI Inc Operating Costs	-	70,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	70,000
Department of Environmental Protection	-	62,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	62,000
Governor's Energy Office	11,706	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11,706
DECD (Maine Technology Institute)	-	-	-	-	-	-	-	17,500	-	-	-	-	-	-	-	-	17,500
TOTAL EXPENDITURES	4,665,536	41,794,883	63,336,655	320,380	636,601	7,032,558	2,239,416	500,069	514,560	2,000,234	3,335,747	4,611,658	22,710,000	6,966,201	-	860,179	161,524,677
RESERVED FUND BALANCE	1,097,605	6,787,638	-	-	-	-	-	-	-	-	597,930	-	-	-	3,500,000	22,094,231	34,077,404

Appendix E: Public Utilities Commission Assessments and Revenue Collections

Table D-1: Public Utilities Commission Assessments and Revenue Collections

PUC Assessments and Revenue Collections - FY 2023					
Electric Efficiency Procurement					
Procurement Quarter:	**Jul-Sep 2022**	**Oct-Dec 2022**	**Jan-Mar 2023**	**Apr-Jun 2023**	**Total - FY 2023**
Billing Date:	**1-Jul-22**	**31-Oct-22**	**1-Jan-23**	**1-Apr-23**	
Name					
Central Maine Power Co	$ 9,340,127	$ 9,340,127	$ 9,340,127	$ 9,340,127	$ 37,360,506
Eastern Maine Electric Coop	110,587	110,587	110,587	110,587	442,347
Versant (formerly Emera)	2,060,148	2,060,148	2,060,148	2,060,148	8,240,590
Fox Island Electric Coop	12,503	12,503	12,503	12,503	50,013
Houlton Water Co	89,510	89,510	89,510	89,510	358,041
Kennebunk Light & Power	112,661	112,661	112,661	112,661	450,645
Madison Electric Works	32,533	32,533	32,533	32,533	130,131
Van Buren Light & Power Co	16,331	16,331	16,331	16,331	65,326
Totals	**$ 11,774,400**	**$ 11,774,400**	**$ 11,774,400**	**$ 11,774,400**	**$ 47,097,600**

Revenue Forecast	**FY 2024**
Central Maine Power Co	$ 27,036,852
Eastern Maine Electric Coop	336,207.56
Versant (formerly Emera)	6,009,879.16
Fox Island Electric Coop	35,317.12
Houlton Water Co	216,366.68
Kennebunk Light & Power	389,289.40
Madison Electric Works	125,020.20
Van Buren Light & Power Co	49,032.92
Total	**$ 34,197,965**

Natural Gas Efficiency Procurement		
	Total - FY 2023	**Revenue Forecast - FY 2024**
Name		
Northern Utilities - Unitil	$ 667,060	$ 747,228
Bangor Natural Gas	277,297	176,019
Maine Natural Gas	176,749	14,430
Summit Natural Gas	51,825	-
Totals	**$ 1,172,931**	**$ 937,677**

Alternative Compliance Mechanism (ACM)		
Assessment Timeframe:	**Jul '22- June '23**	**Total - FY 2023**
Billing Date:	**N/A**	
Type		**Total - FY 2023**
Class I & Class IA	$ 104,800	$ 104,800
Thermal	692,350	692,350
Totals	**$ 797,150**	**$ 797,150**

As Ordered by the PUC on 6/14/2023 and 6/15/2023 in Docket 2022-0039 –PROCUREMENT OF ELECTRIC RESOURCES AND ASSESSMENT FOR NATURAL GAS RESOURCES FOR FIFTH TRIENNIAL PLAN FY2023-2025. Note: these revenue forecasts reflect the use of FY2023 carryforward funding to reduce the need for assessments.

Appendix F: Maine Jobs and Recovery Plan Initiatives

In January 2021, the U.S. Congress enacted the American Rescue Plan Act (ARPA), a federal stimulus bill to aid, among other things, economic recovery from the COVID-19 pandemic. The plan included funding for state governments through the Coronavirus State and Local Fiscal Recovery Funds (SLFRF). Approximately $1 billion of the SLFRF was allocated to the State of Maine to respond to the pandemic and support economic recovery.

In May 2021, Governor Mills put forth a proposal—the Maine Jobs and Recovery Plan (MJRP)—outlining her administration's priorities for using these funds. The Maine Legislature approved the plan in July 2021, enacting LD 1733, An Act To Provide Allocations for the Distribution of State Fiscal Recovery Funds.

The MJRP allocated $50 million to the Trust to accelerate weatherization upgrades for low- and moderate-income residents, and to expand energy efficiency investment among local governments, schools, community organizations, and businesses. The MJRP also allocated $8 million to MaineDOT to expand state, municipal, and other publicly accessible EV charging stations and related infrastructure in partnership with Efficiency Maine.

In collaboration with other agencies and offices of state government, Efficiency Maine prepared a series of five initiatives that incorporate both the goals of the MJRP and the federal guidelines for uses for the SLFRF. These initiatives were designed to assist different customer segments of the Maine economy that experienced a disproportionately negative economic impact related to the COVID-19 pandemic. Each is described below, along with a summary of FY2023 activity and performance metrics.[123] The performance metrics provided are those required for compliance with federal reporting requirements. The Trust will continue to run many of these initiatives in FY2024 and FY2025. All funds must be committed by December 31, 2024, and expended by December 31, 2026.

1. Low- and Moderate-Income Weatherization Initiative

This $25 million initiative provides financial incentives to accelerate air sealing and insulation projects in low- and moderate-income residential dwellings. The Trust runs this effort through its standard Low-Income Initiatives, offering market-based low- and moderate-income weatherization rebates. This influx of federal funds was instrumental in driving record weatherization activity in the program in FY2023, as described in the Low-Income Initiatives section.

[123] The performance metrics reflected in the tables are as reported to the Department of Financial and Administrative Services in July 2023. They reflect results associated with projects that were completed and paid in FY2023. There are several additional projects underway or in the pipeline that will be captured in future fiscal years.

Table F-1: Low-and Moderate-Income Weatherization Initiative – Performance Metrics

Performance Metric	FY2023 Results
Funds invested	$6,320,854
Participants	870[124]
Equity – number of participants in economically disadvantaged communities[125]	596
Equity – participant household income[126]	9% -- less than $15,000 23% -- $15,000 to $34,999 20% -- $35,000 to $49,999 20% -- $50,000 to $74,999 9% -- $75,000 to $99,999 4% -- over $100,000 15% -- preferred not to indicate
Lifetime cost savings[127]	$4,406,192
Lifetime carbon reductions	27,188.6 tons of CO_2e
Number of participating contractors	49

2. Hospitality Retrofit Initiative

This $4 million initiative provides financial incentives and technical assistance to support energy efficiency upgrades for businesses in Maine's travel, tourism, and hospitality sector. It prioritizes small businesses[128] and HVAC beneficial electrification projects.

FY2023, the Trust managed a Funding Opportunity Notice for Hospitality Retrofits through the C&I Prescriptive Initiatives. The FON targeted small restaurants, hotels, motels, inns, and bed and breakfasts, providing enhanced incentives for HVAC, lighting, and refrigeration projects. The Trust leveraged ARPA funds for the HVAC electrification measures using heat pump technology.

[124] Final figure after FY2023 reconciliation was 867.
[125] For its MJRP initiatives, the Trust defines "economically disadvantaged community" as a municipality with a median income level below the state's median income level.
[126] This data was collected through a voluntary participant survey.
[127] Lifetime cost savings is equal to the lifetime benefits minus the total costs paid by the participant and Efficiency Maine. Lifetime benefits and lifetime cost of increase energy are assessed using the avoided cost of energy supply.
[128] For its MJRP initiatives, the Trust defines "small business" as a customer of a T&D utility that is designated in the utility's distribution rates to receive general service through the customer class reserved for small non-residential users, including where applicable the small general service and the medium general service customer classes.

Table F-2: Hospitality Retrofit Initiative – Performance Metrics

Performance Metric	FY2023 Results
Funds invested	$785,487
Participants	29
Equity – number of participants with minority-owned, women-owned and veteran-owned business status	1 minority-owned business 1 veteran-owned business 12 women-owned businesses
Equity – number of participating small businesses	29
Equity – number of participants in rural areas and small towns	28 in rural areas 14 in small towns
Lifetime cost savings	$1,405,082
Lifetime carbon reductions	5,867.5 tons of CO_2e

3. Energy Efficiency Initiative for Local Government, Public Schools, and Congregate Housing

This $15 million initiative provides financial incentives and technical assistance to support energy efficiency upgrades at buildings owned or leased by local governments (including municipal, county, or tribal governments), public schools, and community organizations providing congregate housing (e.g., long-term care, group home, and supportive housing facilities). It prioritizes entities (1) serving small population sizes,[129] (2) located in rural areas,[130] and (3) serving economically disadvantaged communities. It also prioritizes HVAC beneficial electrification projects.

In FY2023, the Trust operated the initiative using three FONs through the C&I Prescriptive Initiatives. The FON for School Retrofits targeted PreK-12 public schools in smaller towns and districts; the FON for Small Municipality Retrofits targeted municipalities with fewer than 5,000 residents and tribal governments; and the FON for Long-Term Care Facility Retrofits targeted assisted-living program facilities, continuing care communities, nursing homes, memory care facilities, and hospice facilities. All three FONs provided enhanced incentives for HVAC, lighting, and refrigeration projects, leveraging ARPA funds specifically for the HVAC electrification measures using heat pump technology.

Table F-3: Energy Efficiency Initiative for Local Government, Public Schools, and Congregate Housing – Performance Metrics

Performance Metric	FY2023 Results
Funds invested	$378,021
Participants	29
Equity – number of participants in economically disadvantaged communities	20
Equity – number of participants in rural areas and small towns	29 in rural areas 28 in small towns
Lifetime cost savings	$458,442
Lifetime carbon reductions	2,558.3 tons of CO_2e

[129] For its MJRP initiatives, the Trust defines "small town" as a municipality with a population of 5,000 or less.
[130] For its MJRP initiatives, the Trust defines "rural area" as any municipality deemed "rural" by the U.S. Department of Agriculture for multifamily housing; this translates to any municipality in Maine except Portland, South Portland, Westbrook, Lewiston, Auburn, and Bangor.

4. Energy Efficiency Initiative for Manufacturers

This $6 million initiative provides financial incentives to support high-efficiency, clean energy upgrades for businesses in Maine's manufacturing sector. It prioritizes measures that receive significant reductions in energy costs, carbon emissions, or both.

In FY2023, the Trust advanced the initiative with the Program Opportunity Notice (PON) for Manufacturer Thermal Efficiency Projects through the C&I Custom Program. This PON provided enhanced incentives for projects that reduce the use of natural gas, oil, biomass and other fuels, granting bonus incentives for beneficial electrification and heat recovery projects. As with most custom projects, the project development process can take several months. Though the Trust did not complete any projects under this initiative in FY2023, it awarded one project and anticipates several projects in the pipeline will move forward in FY2024.

Table F-4: Energy Efficiency Initiative for Manufacturers – Performance Metrics

Performance Metric	FY2023 Results
Funds invested	$168,742
Participants	0
Equity – number of participants in rural areas and small towns	N/A
Lifetime cost savings	N/A
Lifetime carbon reductions	N/A

5. EV Charging Infrastructure Initiative

This $8 million initiative provides financial incentives to support the continued expansion of Maine's public EV charging network. It prioritizes less populous, more remote routes, towns, and destinations that are not able to be funded by the federal Bipartisan Infrastructure Law funds (especially in areas not served by existing charging infrastructure). It also prioritizes charger installations in disadvantaged communities[131] and charging opportunities for apartment dwellers who cannot install a charger at home.

In FY2023, the Trust managed two rounds of FONs for Rural Level 2 EV Charging to support this initiative. The first targeted rural installations in Maine's 14 northern counties (i.e., all counties except Cumberland and York), and the second targeted rural installations in Cumberland County and York County. The Trust also ran two rounds of an RFP ("Phase 4") for DC fast-charging stations, awarding funds for public fast chargers on state priority corridors. (The second round was not awarded until FY2024.) Both rounds targeted installations in Aroostook and Washington Counties, connecting southern and central Maine communities with the Crown of Maine and the Eastern border with New Brunswick. While only a handful of projects that were awarded in FY2023 were completed and paid out

[131] For this MJRP initiative, the Trust uses a definition of "disadvantaged community" consistent with the federal Justice40 definition, as reflected in the Argonne National Laboratory's EV Charging Justice40 Map.

in this fiscal year, the balance of projects will be installed and their incentives paid in FY2024 and subsequent years.

Table F-5: EV Charging Infrastructure Initiative – Performance Metrics

Performance Metric	FY2023 Results
Funds invested	$92,096
Total number and size of EV charger plugs (ports) installed and total number of sites added to the state's network of public chargers[132]	6 Level 2 plugs between 3 sites 0 Level 3 plugs between 0 sites
Equity – number and power levels (kW) of plugs installed in disadvantaged communities (DACs); investment in DACs as a percentage of total investment	2 Level 2 plugs at 1 site in a DAC 0 Level 3 at 0 sites in DACs 51% of incentives were paid in DACs
EV charger investments per capita (by town)	Rockport -- $2.74 per capita East Central Washington UT -- $4.71 per capita Rockland -- $2.02 per capita
Charging station usage (for networked Level 3 chargers only)	N/A (no Level 3 installations completed)

[132] This represents a small portion of the projects *awarded* in FY2023, which included a total of 215 Level 2 plugs across 84 sites and 15 Level 3 plugs across 4 sites.

Appendix G: Glossary

Adjusted Gross Savings: The change in energy consumption and/or demand that results directly from program-related actions taken by participants in an Efficiency Maine program, regardless of why they participated, adjusted for installation rates and savings rates verified through program evaluations.

Arrearage: Unpaid debt or overdue payments.

Avoided Energy Supply Costs: Costs that would have been incurred had a utility and/or energy supplier otherwise been required to supply the power that was avoided through the installation of an energy efficiency or distributed generation project. The avoided costs include the wholesale cost of energy and capacity, the costs of complying with renewable energy and climate policies, plus the marginal costs of adding future T&D (but not the retail cost of T&D).

Benefit-to-Cost Ratio: The ratio of the net present value of the quantifiable financial benefits to the costs of an efficiency measure. The benefits and costs included in the calculation are dependent on the test used. See glossary entries of Primary Benefit-Cost Test and Program Administrator Cost Test.

Community Action Agencies: Non-profit private and public organizations established under the U.S. Economic Opportunity Act of 1964 to reduce poverty. CAAs deliver emergency services, education, training, housing, weatherization services, and more.

Free Rider: A program participant who, as determined through surveys and market analysis, would have installed equivalent efficiency measures independent of the Trust's program or its incentives.

Lifetime Benefit: The net present value of the avoided energy supply cost of energy and demand savings, and avoided operation and maintenance costs, over the measure life.

Maximum Achievable Cost-Effective (MACE): An energy efficiency industry term that refers to the full universe of potential cost-effective energy efficiency projects that could realistically be installed given technical and economic constraints and assumed adoption rates based on offered incentives.

Measure Life: The length of time that a measure is expected to be functional. Measure life is a function of: (1) *equipment life*, the number of years that a measure is installed and operates until failure, and (2) *measure persistence*, which takes into account business turnover, early retirement of installed equipment, and other reasons that measures might be removed or discontinued. Measure life is sometimes referred to as expected useful life.

Midstream: Incentive programs for energy-efficient products are characterized as midstream, upstream, or downstream depending on who receives the incentives. Upstream programs provide incentives for manufacturers to make more efficient products, and downstream programs provide rebates for consumers, encouraging them to purchase more efficient products. A midstream program provides incentives at the retailer or distributor level, encouraging them to stock and sell more high-efficiency equipment models.

Net Savings: An estimate of the amount of adjusted gross savings that can be directly and indirectly attributed to a program based on program participants' motivation. Participants who, in the determination of the evaluators, would have installed equivalent efficiency measures independent of the program and its incentives are considered "free riders." To calculate net savings, the impacts of savings attributed to free riders are excluded. By contrast, savings realized by program participants through the installation of *additional* efficiency measures due to program influences, even though no incentive or TA was received (called "spillover"), are added.

Net-to-Gross (NTG) Ratio: The ratio of net savings to adjusted gross savings. The NTG ratio is defined as 1 minus the free ridership (FR) rate plus the spillover (SO) rate (NTG ratio = 1 − FR + SO).

Primary Benefit-Cost Test: This cost-effectiveness test captures the perspective of all utility customers—both participants and non-participants. The Primary test compares combined program administrator and customer costs to utility resource savings. The Primary test measures the benefits of the energy efficiency program for the region. Costs included in the Primary test are those used to purchase and install the energy efficiency measure, such as the costs incurred by program participants, costs incurred due to increased energy use, and costs of running the energy efficiency program. The benefits included are the avoided energy supply cost; avoided cost of water; and when quantifiable, avoided operation and maintenance costs.

Program Administrator Cost Test: This cost-effectiveness test compares Efficiency Maine's costs to supply-side resource savings. A positive PACT (>1) indicates that an energy efficiency program is a lower-cost approach to meeting load growth than a wholesale energy purchase and new generation resources (including delivery and system costs). The PACT includes only costs incurred by the program administrator and not customer contributions.

Qualified Partner: A term used to describe the network of contractors and vendors working with Efficiency Maine's Commercial & Industrial Prescriptive Initiatives.

Residential Registered Vendor: A term used to describe the network of contractors and vendors working with Efficiency Maine's residential programs.

Spillover: Savings realized by program participants through the installation of *additional* efficiency measures due to program influences, even though no incentive or TA was received.