Appendix H-1

Beneficial Electrification Plan for Maine

Beneficial Electrification Plan for Maine

Fiscal Years 2026 – 2028

By

The Efficiency Maine Trust

8-22-2024

1. Introduction

As described in this Beneficial Electrification Plan for Maine – Fiscal Years 2026 - 2028, the Efficiency Maine Trust (the Trust) proposes to implement a comprehensive program to promote the installation of certain types and applications of heat pumps and electric vehicles (EVs) that meet the criteria of Maine's Beneficial Electrification Policy Act. The distinguishing feature of the specific measures described by the Beneficial Electrification Plan is that they will be eligible for funding from the Electric Efficiency Procurement remitted by Maine's electric utilities to the Trust. The amounts remitted will be incorporated into the utilities' rates.

Eligibility for this funding is determined by establishing that the measure meets the statutory definition of "beneficial electrification," is cost effective, and will reliably reduce electricity rates over the life of the measure.

A primary focus of the Trust's analysis, described below, is determining which technologies, and applications of those technologies, are eligible for funding from the Electric Efficiency Procurement. The specific types of energy-consuming technology analyzed, and how or where they are applied, are referred to as "measures." This plan, together with Appendix H-2, describes the criteria and analysis applied to measures that would be included in "maximum achievable, cost-effective" (MACE) electric efficiency budgets, as required by state law. It also calculates the lifetime cost savings and the rate suppression effect that is projected to result from full implementation of the Beneficial Electrification Plan.

Investment in qualifying beneficial electrification measures suppresses the rates that electric utilities charge to recover their fixed costs in the transmission and distribution system. Qualifying beneficial electrification measures accomplish this rate suppression by distributing those fixed costs across an increased volume of electricity sales without adding to the peak loads that trigger the need to build new infrastructure.

This plan is intended to be treated as an integral component of the Trust's Triennial Plan VI. The specific strategies for implementing programs to promote qualifying beneficial electrification measures are incorporated within the body of Triennial Plan VI and relevant appendices, and are not repeated here.

Full implementation of the Beneficial Electrification Plan will achieve three very important objectives of Maine policy. First, in an era when electricity rates have been steadily climbing and frustrating electricity customers, implementation of this plan will suppress electricity rates by more than $258 million across the lifetime of the measures installed. Second, the plan will dramatically lower heating costs and transportation costs for Maine's homes and businesses. Third, this plan will significantly improve Maine's independence from imported heating and transportation fuels on its path to meeting carbon pollution reduction goals.

2. Policy Framework and Planning Process

a. State Legislation

In 2023, the Maine Legislature enacted L.D. 1724, An Act to Enact the Beneficial Electrification Policy Act (BEPA). BEPA introduced several amendments to the statute governing the Trust's activities. These

amendments clarify the Trust's obligations for planning and implementing programs to advance Maine's policy on beneficial electrification.[1] Among other directives, BEPA provides that:

> The trust shall develop a 3-year beneficial electrification plan for end uses of energy as part of the trust's triennial plan…and provide annual updates to the plan.[2]

BEPA requires that, when developing budgets for the Trust's Triennial Plan (and updates to that plan), determinations of maximum achievable cost-effective (MACE) electric efficiency opportunity shall: "Include all beneficial electrification measures that are cost-effective and reliably reduce electricity rates over the life of the measures."[3] Further, the Act requires the consideration of all net energy costs in evaluation of the cost-effectiveness of beneficial electrification measures, including savings associated with the avoided use of a fossil fuel.[4]

In 2024, the Legislature established additional requirements of the Beneficial Electrification Plan with the enactment of L.D. 589 – An Act to Ensure that the Maine Grid Provides Additional Benefits to Maine Ratepayers. L.D. 589 introduces a concept of "Beneficial Load" complementary to the policy of beneficial electrification and directs the Trust to consider incentivizing such load from commercial and industrial customers. The legislation also directs the Trust to consider concurrent planning efforts related to the future of Maine's grid.

b. Trust Rulemaking

Beginning in late 2023, the Trust conducted a rulemaking to update its Chapter 3 rule to align with requirements of the BEPA relevant to Trust's activities. A public hearing on proposed amendments to the rule was held January 16, 2024 and written comments were accepted through January 26, 2024. The amended rule was adopted by the Trust board on February 28, 2024, approved by the Attorney General's office on March 15, 2024, and took effect March 26, 2024. Prior to the initiation of this formal rulemaking, the Trust also engaged an outside consultant to review regulations governing funding for beneficial electrification measures in other jurisdictions, discussed a proposed analytical approach with relevant stakeholders, and conducted a preliminary analysis of how various beneficial electrification measures would stack up against the criteria of "reliably reduc[ing] electricity rates over the life of the measure."

As part of the Trust's 2024 Annual Update to Triennial Plan V, then in effect, it requested a significant change to the approved budgets to reflect the costs and deliverables of an "Interim Beneficial Electrification Plan" (Interim Plan). To develop this Interim Plan, the Trust applied the analytical approach codified in its Chapter 3 rule. The Interim Plan identified a total investment of $49.5 million necessary to achieve the maximum achievable cost-effective quantity of beneficial electrification for FY 2025. This

---

[1] Maine law defines beneficial electrification as follows: "'Beneficial electrification' means electrification of a technology or process that results in reduction in the use of a fossil fuel, including electrification of a technology or process that would otherwise require energy from a fossil fuel, and that provides a benefit to a utility, a ratepayer or the environment, without causing harm to utilities, ratepayers or the environment, by improving the efficiency of the electricity grid or reducing consumer costs or emissions, including carbon emissions" (35-A M.R.S.A. § 10102(3-A)).

[2] 35-A M.R.S.A. § 10110(4-A)(D).

[3] 35-A M.R.S.A. § 10110(4-A)(D).

[4] *Ibid.*

significant change to Triennial Plan V was approved by the Trust Board in February 2024 and by the Commission in May 2024.[5]

c. Beneficial Load

With the adoption of L.D. 589, the Legislature amended the Beneficial Electrification Policy Act to require that the Trust "Consider incentivizing the appropriate placement of and promoting commercial or industrial beneficial load."[6] The statute says that "beneficial load" means electric load that:

- Increases load that is consistent with the principles of beneficial electrification;
- Takes advantage of excess electrical capacity within the grid while avoiding the need for significant investment in, or expenditures for, additional grid infrastructure; or
- Is used to reduce peak demand or shift the demand to lower cost time periods.[7]

Based on this definition, the Trust observes that in its current programming in Triennial Plan V, it is already incentivizing and promoting beneficial load through three channels. First, the Custom Program has been incentivizing measures that convert end-uses from fossil fuel to more efficient electric equipment. Second, the Demand Management Program is promoting large batteries, offering incentives to customers to reduce peak demand by shifting their use to a lower cost time period. Third, in the event of a non-wires alternative analysis (such as was recently proposed and subsequently withdrawn in for CMP circuits in the Brunswick area), the Trust would look to promote measures that would avoid the need for investment in additional grid infrastructure.

d. Stakeholder Input

In addition to the input that the Trust has sought on the Triennial Plan as a whole, the Trust has sought input on the Beneficial Electrification Plan specifically. On April 12, 2024, the Trust hosted a stakeholder workshop in which the Trust presented an initial overview of the Beneficial Electrification Plan for TPVI. During the workshop the Trust summarized its activities to date to develop the Beneficial Electrification Plan, described progress toward key state goals, and shared preliminary budgets for public comment and questions.

The Trust also meets regularly with the Office of the Public Advocate, the Non-Wires Alternative Coordinator, Central Maine Power and Versant Power and has introduced the elements of the Beneficial Electrification Plan during these meetings. The Trust also has participated in the comprehensive energy planning process of the Governor's Energy Office, during which it has provided updates and data on the Trust's planning around beneficial electrification.

[5] Maine Public Utilities Commission Order on Request for Significant Changes and Ratepayer Funding, Efficiency Maine Trust Request for Approval of the Triennial Plan for Fiscal Years 2023-2025, May 29, 2024, Docket No. 2021-00380.
[6] 35-A MRSA §3803(2)(A)(2).
[7] 35-A MRSA §3802(1-A).

e. Interaction with the Commission's proceeding on Integrated Grid Planning

The Commission opened a docket (Dkt. No. 2022-00322) in 2022, pursuant to a legislative directive, to institute an integrated approach to grid planning. In developing this Beneficial Electrification Plan, the Trust has given consideration to the data, forecasts, and order(s) issued in that proceeding.

3. Framework for analyzing eligibility of measures to be funded through the Electric Efficiency Procurement

As previously described, the BEPA requires that the determination of MACE electric efficiency include only those beneficial electrification measures that are cost-effective *and* that reliably reduce electricity rates over the life of the measure.

To assess the cost-effectiveness of each measure, the Trust relied upon its primary cost test (as described in Section 4 – Identifying Cost-Effective Opportunity). See Appendix B-1 – Measure Screening for Cost-Effectiveness. As required by BEPA for beneficial electrification measures, this analysis considered all net energy costs, including savings associated with the avoided use of fossil fuels associated with the measure.

To assess whether a measure reliably reduces rates over the life of the measure, the Trust relied upon the analytical approach established in Chapter 3 of the Trust's rules. This analysis considers the net present value of only those revenues and costs collected through the utilities' T&D rates that are attributable to the measure. These include:

- **Changes in utility revenue from incremental electricity sales attributable to the measure**
  To determine this value, the Trust calculates the product of the incremental load from the annual consumption of the incentivized equipment (in kWh) and the T&D delivery rate ($/kWh) applied to that incremental load.[8] Annual consumption figures are drawn from the Trust's Technical Reference Manuals (TRMs), from measured program data, from studies, and from relevant analyses conducted by program administrators in other states.[9]

  The Trust calculated a statewide average T&D delivery rate for both residential and commercial customers using weighted averages of rates effective August 1, 2024 for Central Maine Power and July 1, 2024 for Versant Power. Residential rates are averaged from the utilities' default residential rates. Commercial rates are averaged from the utilities' volumetric rates for smaller commercial customers.[10] The calculation includes no rate escalator despite the likelihood that T&D rates will increase over time. Indeed, looking over the period between 2013 and 2022, both CMP and Versant's T&D rates increased well in advance of inflation.[11] Were the price of T&D delivery to increase over the course of the life of each measure, the Trust's choice to use rates

[8] See Appendix H-2, "Summary" Tab, Row 13.
[9] See Appendix H-2, "Sources" Tab, Row 3.
[10] *See* Appendix H-2, "Rates" Tab.
[11] See "Rate History" posted on the Maine Public Utilities Commission Website here, www.maine.gov/mpuc/regulated-utilities/electricity/rate-history, which draws from data filed in Docket No. 2019-00186.

currently in effect will constitute a conservative approach to assessing the change in the utilities' revenues attributable to the measures.

- **Changes in utility costs resulting from the marginal effect of the measure on T&D system costs**
  Consistent with the methodologies and assumptions (M&As) approved by the Commission for Triennial Plan V and with the requirements of Chapter 3 of the Trust's rules, the Trust calculated the marginal impact of each measure on T&D system costs by leveraging approved values for avoided transmission and distribution.[12],[13] Summer peak impacts (kW) of each measure are drawn from the Trust's TRMs and from Trust analysis and modeling.[14] The Trust did not consider winter peak impacts in this analysis and will update its approach at such time as the grid approaches conditions where winter peak determines T&D system needs.

- **How does the Trust determine the costs of the financial incentive offered by the Trust and the costs to the Trust to administer the incentive program?**
  To determine the costs of incentives for each measure, the Trust calculated a representative average incentive amount based on past program activity. For the purposes of this analysis, the Trust assumes that the full incentive amount is included in budgets from the Electric Efficiency Procurement collected from ratepayers. In addition to the cost of incentives, the Trust included a cost adder to each measure, in the amount of 21% of the full incentive amount, to account for the cost of program administration and delivery. This amount is based on planned budgets and experience from historical program activity.

The net present value of the changes in T&D costs and revenues attributable to each measure are arrived at by applying the Trust's Board-approved discount rate for FY 2025.[15] Where the subtraction of the discounted incremental costs from discounted incremental revenues produces a figure larger than zero, the measure is found to "reliably reduce electricity rates over the life of the measure."

Only those beneficial electrification measures that are found both to be cost-effective and to reliably reduce rates over the life of the measure are included in determinations of MACE electric efficiency opportunity.

4. Analysis of measures to be included in the Beneficial Electrification Plan

As discussed above, to establish that a measure must be included in its Beneficial Electrification Plan, the Trust looks at whether the measure passes its primary benefit-cost test and the screen for reliable reduction in rates (RRR). What follows is a discussion of that process and the key findings as applied to several categories of measures that were reviewed by the Trust. For measures that pass the primary benefit-cost test there is also a discussion of the drivers of the results of the reliable reduction in rates (RRR) screen. For specific values please refer to the summary tab of Appendix H-2.

[12] See Appendix E-1.
[13] *See* Appendix H-2, "Summary" Tab, Rows 2 through 5.
[14] *See* Appendix H-2, "Summary" Tab, Row 10.
[15] See Appendix H-2, "Summary" Tab, Row 1.

The Trust finds that the following beneficial electrification measures meet the criteria for funding through the Electric Efficiency Procurement and will constitute the components of the Beneficial Electrification Plan during Triennial Plan VI:

- Whole home heat pumps installed in single family homes, duplexes, and condominiums (condos);
- Whole building or whole zone heat pumps, including rooftop unit heat pumps, installed in commercial buildings and in multifamily buildings of 3 or more dwelling units;
- Heat pump water heaters, individually vetted for cost-effectiveness, that replace fossil-fueled water heaters installed in commercial or multifamily buildings;
- Sales of battery electric and plug-in hybrid electric vehicles bundled with "smart charging", where limited to low- and moderate-income households, commercial customers, governments and nonprofit organizations.

As explained below, certain measures that achieve a shift from using fossil fuels to electricity are, nonetheless, not candidates for inclusion in the Beneficial Electrification Plan or incentives paid using funds from the Electricity Efficiency Procurement. This does not mean, however, that such measures, where they are cost effective, could not be eligible for programs that have access to other sources of funding. The Trust will continue to track the cost-effectiveness of these measures as their prices and performance evolve, and will continue to match up promising measures with available funding consistent with the priorities of the statute, the Triennial Plan, and the directives of the Board.

a. Heat pumps in single family homes, duplexes, and condos

Heat pumps configured to meet the entire heating load of single-family homes, duplexes, and condos for low-, moderate- and any-income customers were cost effective and screened for RRR.

- **Incentive:** For each income category the Trust offers an incentive based on a percentage of the total project cost, up to a cap. The incentives in the RRR test are based on actual program averages experienced in FY2024. In each income category, the average incentive is based on the percentage of project cost and not limited by the cap in aggregate.
- **Increase in kWh usage:** To calculate the increase in annual kWh for each category, the Trust starts with the average annual heating load for each category. The annual kWh increase is calculated using this annual heating load with the Trust's heat pump model as described in Appendix J question 22 that applies an hourly load profile, local temperature date, and efficiencies at those temperatures calibrated by metered performance in Maine's climate. For more on this model, please refer to Appendix J.
- **Summer Peak kW Impact:** There is a slight summer peak kW increase. The number of customers adding new cooling is partially offset by the number of customers replacing inefficient air conditioners. The Trust made this determination based on its most recent evaluation of the Home Energy Savings Program.
- **Lifetime:** The lifetime of a heat pump is 18 years.

b. Heat pumps in multifamily dwelling units

Heat pumps offered through CIPI, configured to meet the entire heating load of multifamily dwelling units were cost effective and screened for RRR.

- **Incentive:** The incentive included in the RRR screen was based on the rebate offered by the CIPI program in FY2025.
- **Increase in kWh usage:** Usage is calibrated for the heating load found in the evaluation of the CIPI heat pumps in multi-family dwelling units applied to the same heat pump model discussed above, noting that multi-family units have a relatively low heating demand. This is due in part to the fact that they tend to have fewer exterior walls and the heat loss of one unit often results in helping to heat another.
- **Summer Peak kW Impact:** The baseline for multi-family dwelling units includes a higher incidence of inefficient air conditioning and as a result higher savings than found in single-family homes, duplexes, and condos.
- **Lifetime:** The lifetime of a heat pump is 18 years.

c. Heat pumps in select commercial settings

Heat pumps offered through the CIPI program to heat entire buildings, or entire zones, in select commercial settings. These select settings include, but are not limited to, commercial spaces used for offices, retail, and lodging. In these select settings, heat pumps were found to be both cost effective and screened positive for RRR.

- **Incentive:** The incentive assumed in the RRR screen was based on the rebate offered by the CIPI program in FY2025.
- **Increase in kWh Impact:** The increased electricity usage is calibrated for the heating load found in the evaluation of the CIPI heat pumps in commercial settings applied to the heat pump model discussed above. The heating loads for this diverse category were considerably higher than multifamily units.
- **Summer Peak kW Savings:** The cooling load for commercial spaces is considerably higher than any residential spaces, but is more frequently offset by prior inefficient cooling.
- **Lifetime:** The lifetime of a heat pump is 18 years.

d. Electric vehicles

The Trust screened four different permutations of EV measures: battery electric vehicles (BEVs) and plug in hybrid vehicles (PHEVs); paired with and without a Smart Charger from the Demand Management Program. All the permutations are cost effective, but only the EVs that are purchased (not leased) and bundled with a Smart Charger are determined by the Trust to reliably reduce rates.

As discussed in Appendix L, for purposes of determining what the EV Rebate program could offer that would qualify for funding through this Beneficial Electrification Plan, the Trust is limiting eligibility to consumers for whom the program is expected to generate significant "market lift." The market lift of the planned program is greatest for those consumer segments for whom the upfront incremental cost and/or reluctance to shift to EVs pose significant barriers. The Trust finds that these issues are significant barriers for low- and moderate-income customers (LMI), commercial customers, government entities, and non-profit organizations.

- **Incentive:** The Trust assumes a reduced the size of the incentive from that offered during TPV in order to keep the program costs low enough to achieve a positive RRR screen. The

reduced incentive also reflects the fact that incremental costs are declining for BEVs generally, and in particular for pre-owned or "used" BEVs, while availability of lower-cost and used models is improving.

- **Increase in kWh usage:** Is based on average annual vehicle miles traveled in Maine of 11,895, assuming 36 kWh per 100 miles for PHEVs and 29 kWh per 100 miles for BEVs.
- **Summer Peak kW Impact:** The "Load Impacts from Electric Vehicles in Maine" report, prepared by Dunsky Energy and Climate Advisors (2024) (Appendix L-4) shows an unmanaged charging summer peak impact of 0.72 kW. At this level, the costs incurred by charging outweigh the price suppression of the excess kWh consumption from an EV. A Smart Charger, pre-programmed to shift charging out of the peak period and installed at a residential customer's home or commercial customer's place of business, can reduce these impacts. To be conservative, the Trust assumed that on peak days, up to 20% of customers opt out of the managed charging schedule.
- **Lifetime:** The Trust gives an EV an 11 year lifetime for its reliable reduction in rates screen. The full lifetime of a new vehicle purchase is 14 years. The Trust may implement program rules to limit the age of vehicles that are eligible for the rebate, ensuring sufficient remaining measure life to reliably reduce rates. Therefore, the Trust assumed an average lifetime of 11 years, similar to that of a used vehicle coming off of a 3-year lease.

e. Heat pump water heaters in commercial applications

Commercial-grade Heat Pump Water Heaters (both 80 and 120+ gallon) offered through CIPI for commercial and multifamily spaces are cost effective and screen for RRR when those applications are screened for site specific conditions ensuring eligibility.

- **Incentive:** The incentive included in the RRR screen was based on the rebate offered by the CIPI program in FY2025.
- **Increase in kWh usage:** The kWh increase is based on specific high use scenarios that the CIPI team will screen for.
- **Summer Peak kW Impact:** There is an increase in the on-peak kW.
- **Lifetime:** The lifetime of a commercial heat pump water heater is 15 years.

f. Rooftop unit heat pumps

Rooftop unit (RTU) heat pumps offered through CIPI for commercial and multifamily spaces are cost effective and screen for RRR when those applications are screened for site specific conditions ensuring eligibility.

- **Incentive:** The incentive included in the RRR screen was based on the rebate offered by the CIPI program in FY2025.
- **Increase in kWh usage:** The kWh increase is based on modeled use.
- **Summer Peak kW Impact:** The baseline for this system is an inefficient air conditioning unit.
- **Lifetime:** The lifetime of a RTU heat pump is 20 years.

g. Variable refrigerant flow systems

Variable refrigerant flow (VRF) systems are large heat pump systems with complicated valving designed for larger commercial applications. These systems are cost effective, but do not screen for RRR due to the size of the incentive that is needed to consistently motivate customers.

h. Electric lawn equipment

The Trust assessed electric lawn equipment for cost effectiveness and potential for reliable reduction of electricity rates. The following measures were considered: residential push mowers, residential riding mowers, commercial riding mowers, and commercial leaf blowers.

If the Trust were to apply very favorable assumptions on cost and operating hours, it is conceivable that each of the lawn equipment measures could meet the cost effectiveness test, except for residential riding mowers. However, none of the electric lawn equipment measures that were analyzed screened positive for RRR. In analyzing whether these measures screened positive for RRR, the Trust employed the following assumptions:

- **Incentive:** Incentives were based on rebates found in other jurisdictions, including Xcel Energy (Minnesota) and Mass Save.
- **Increase in kWh usage:** The kWh increase is based on information from technical reference manuals (TRMs) from Minnesota and Vermont.
- **Summer Peak kW Impact:** For residential lawn equipment, the Trust could not find peak contribution information. Therefore, the Trust assumed constant use of annual kWh divided into a 6-month mowing season. For commercial measures, the Trust applied information from the Illinois and Vermont TRMs.
- **Lifetime:** Estimated lifetime assumptions are based on information in the TRMs from Minnesota, Vermont, and Illinois.

The usage of residential lawn mowers is generally predictable at around 26 hours/year, assuming one hour per week for a six-month mowing season. Residential push mowers are cost-effective under the assumption that most program participants would have purchased a new gasoline mower in a counterfactual scenario. Residential riding mowers, however, are not cost-effective, even under the most favorable assumption of $800 incremental cost.[16] Neither measure screened as reliably reducing rates due to low usage in residential applications.

There is considerable variability in the cost and usage of commercial-grade lawn equipment. In the lost opportunity scenario, the incremental cost of riding mowers over gasoline mowers ranges from $1,500[17] to $17,000.[18] In the retrofit scenario, the measure costs (full cost of the electric mower) are $5,000 to $35,000. For leaf blowers, incremental cost is estimated at $300 and retrofit at $570.[19] In all cases, these estimates exclude the need to purchase additional battery packs at $100 to $300 each to get a commercial crew through its workday so they don't have to wait to recharge. These extra batteries can add thousands of dollars to the measure cost

[16] State of Minnesota Technical Reference Manual 4.1. (31 Jan, 2024).
[17] Electric Lawn Mowers. (22 Aug, 2022). SEDAC (illinois.edu)
[18] Prospect of ban on gas-powered lawn equipment draws pushback in South Portland
[19] Vermont Act 56 Tier III Technical Advisory Group. 2022 Annual Report.

for larger equipment. To assess cost-effectiveness of commercial riding mowers, the Trust assumed 875 annual hours of use,[20] peak impact of 1.023 kW and measure life of 6 years.[21] For leaf blowers, the Trust assumed 282 annual hours of use, peak impact of 1.086 kW, and measure life of 5 years.[22]

Under the lowest cost assumptions, commercial riding mowers are cost effective, but under higher cost assumptions, they do not pass the primary cost test. Commercial leaf blowers are cost-effective; however, the need to purchase additional batteries to get a commercial crew through its workday can eliminate the cost-effectiveness for both leaf blowers and low-cost riding mowers.

Regardless of the measures' cost-effectiveness, they do not pass the screen for reliably reducing rates. Commercial riding mowers do not reliably reduce rates due to their estimated impact on summer peak. Commercial leaf blowers do not reliably reduce rates both because they consume minimal kWh from the grid and because they incur some costs associated with impact on summer peak.

i. Electric bikes

The Trust examined the cost effectiveness and potential for rate reduction of electric bicycles (e-bikes). To date, the available data of the best quality comes from an e-bike pilot in Vermont[23] and the Vermont TRM. Electric bicycles are not-cost-effective and do not reliably reduce rates. To reach these findings, the Trust relied on the following assumptions:

- **Incentive:** The incentive included in the RRR screen was based on a legacy rebate offered by the City of South Portland.
- **Increase in kWh usage:** The kWh increase is based on both displaced functional driving miles, as well as recreational miles and the standby power of the charger in the Vermont report.
- **Summer Peak kW Impact:** Because the Vermont pilot indicated that most load came from standby power of the charger, the Trust assumed the charger was plugged in across all hours of a year.
- **Lifetime:** The lifetime of an e-bike is 8 years.

On March 27, 2024, the Trust announced awards for a request for proposals (RFP) for a pilot of electric bicycles. The Trust will work with local housing authorities to collect Maine-specific data on the usage of the e-bikes for low-income residents. Upon conclusion of the pilot, the Trust will reassess the cost effectiveness and rate reduction of e-bikes.

[20] Vermont Act 56 Tier III Technical Advisory Group. 2019 Annual Report.
[21] 2024 Illinois Statewide Technical Reference Manual for Energy Efficiency Version 12.0 (22 Sept. 2023).
[22] Vermont Act 56 Tier III Technical Advisory Group

[23] Efficiency Vermont. (8 Mar, 2018). Electric Bikes: Survey and Energy Efficiency Analysis: DSS Tech Demo Report: 000-053.

5. Consideration of revenue decoupling mechanism

Insofar as the reliable reduction in rates analysis presupposes that activities which increase utility revenues without increasing costs will place downward pressure on rates, the analysis accounts for a revenue decoupling mechanism (RDM). In other words, the Trust's analysis assumes that when beneficial electrification measures drive increases in utility revenues in excess of increases in utility costs, the Commission will be able to allocate this benefit to ratepayers. The delivery of this benefit could occur via an RDM or via the rate-setting process of future rate cases.

As directed by statute, the Trust's analysis of reliable reduction in electricity rates considers the effect of a beneficial electrification measure over the useful life of that measure. In the case of a heat pump, this useful life is 18 years.[24] Recognizing the variety of factors that can influence rates over a period of this duration, the reliable reduction in rates analysis does not single out the operation of an RDM to adjust rates on a year-by-year basis. Rather, the Trust has employed assumptions that would tend to undercount, over the long term, any increase in utility revenues associated with the operation of the beneficial electrification measures under consideration in the reliable reduction in rates analysis.

6. Planned investments and benefits from the Beneficial Electrification Plan

Figure 1 shows planned investment in the Beneficial Electrification Plan during the Triennial Plan VI period. "EMT investment" shown in the figure includes investment from both ratepayer and non-ratepayer funding sources, rising from $66 million in FY2026 to $102 million in FY2028. This investment is projected to leverage an additional $69 million contribution from program participants in FY2026 rising to $107 million in FY2028. The lifetime societal benefit in excess of cost in Figure 1 shows the present value of total avoided costs, net of the investments, resulting from the installation and operation of the measures. It does not reflect the value of the "rate suppressive effect" shown in the subsequent figure. The lifetime societal benefits (net) from the resulting projects are estimated to be $383 million from investments made in FY2026, $476 million from investments made in FY2027, and $589 million from investments made in FY2028.

[24] EMT-TRM_Retail_Residential_v2025_1.pdf (efficiencymaine.com)

Figure 1: Planned Investments and Benefits

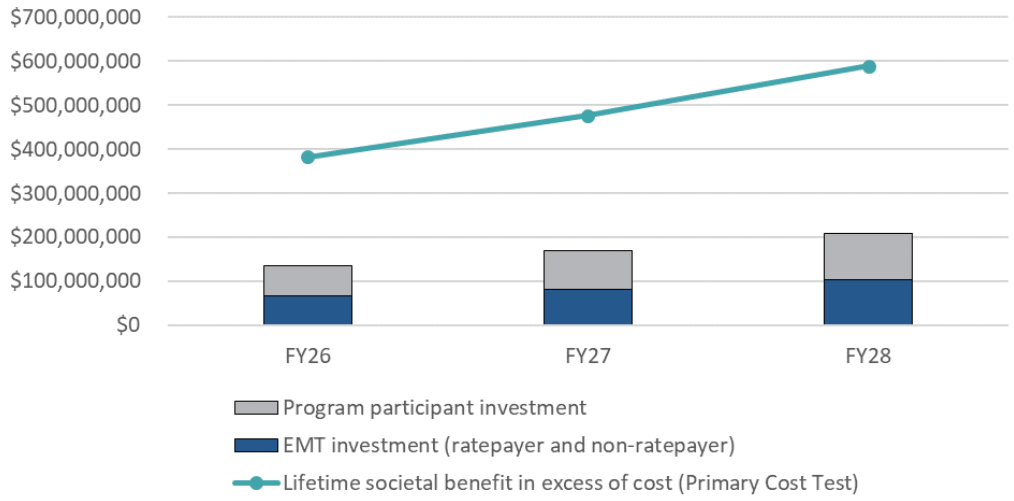
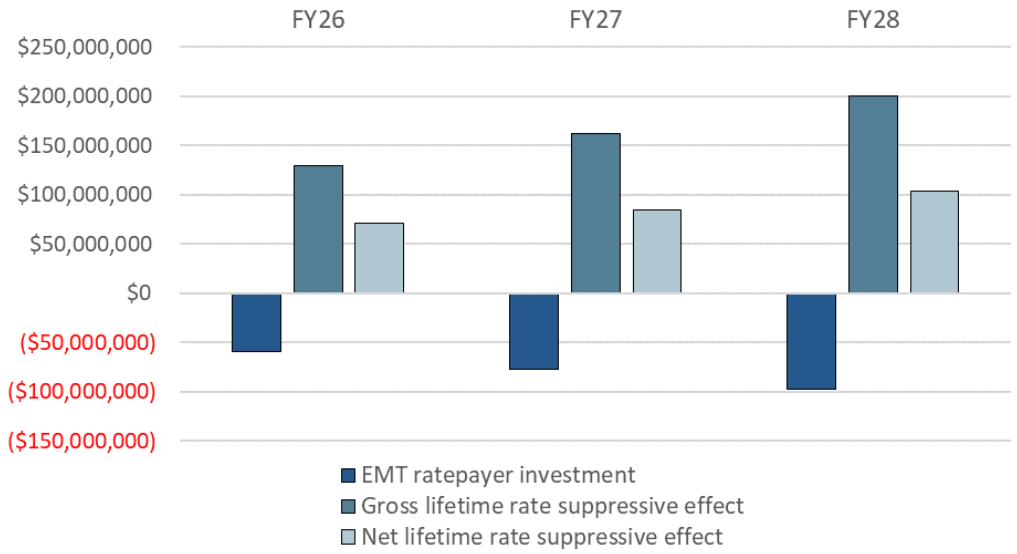


Figure 2 shows the estimated suppressive effect on electric rates due to investment in measures that "reliably reduce rates" from ratepayer dollars. The projections of ratepayer investment in this figure represent the costs of the Trust's programs (including costs for paying rebates, promoting measures, administration, and marginal cost impacts on the grid) for each year of the plan that are to be paid from the Electric Efficiency Procurement. The projections of rate suppressive effect reflect the lifetime impact on rates of each individual year of program activity, both at "gross" and "net" (i.e., gross minus EMT ratepayer investment).

Figure 2: Planned Investments and Rate Suppressive Effect



The cumulative investment of ratepayer funds needed to implement all three years of program activity in this Beneficial Electrification Plan is approximately $234 million. If the Trust receives future grants or

settlement proceeds that are allocated to fund the Beneficial Electrification Plan, this will reduce the size of the ratepayer investment that is needed. The Trust projects that full implementation of the plan will result in a gross suppression of electric rates by more than $490 million, and a net suppression of rates by more than $258 million, over the full lifetime of the measures installed.