

Cost-Effectiveness Report:

Rhode Island Energy's 2024 Energy Efficiency Plan and Rhode Island Energy's 2024-2026 Energy Efficiency Three Year Plan

An Assessment and Report by

EERMC Consultant Team

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Working on Behalf of the



STATE OF RHODE ISLAND

**ENERGY EFFICIENCY &
RESOURCE MANAGEMENT COUNCIL**

Submitted to the Rhode Island Public Utilities Commission

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Summary of Consultant Team Findings

The Energy Efficiency and Resource Management Council (EERMC) Consultant Team finds that the *Annual Energy Efficiency Plan for 2024* (the "2024 EE Plan") and the *2024-2026 Energy Efficiency Three Year Plan* (the "Three Year Plan"), reviewed and endorsed by the Council on September 28, 2023, and filed October 2, 2023 by Rhode Island Energy ("the Company"), is cost-effective according to the "Rhode Island Test" (RI Test) and the historically referenced Total Resource Cost (TRC) test.

The EERMC submits these findings in compliance with the Least Cost Procurement (LCP) Standards adopted on July 27, 2023 by the Rhode Island Public Utilities Commission (PUC):

"The Council shall prepare memos on its assessment of the cost effectiveness of the EE Plans, pursuant to R.I. Gen. Laws §39-1-27.7(c)(5), and submit them to the PUC no later than three weeks following the filing of the respective EE Plans with the PUC, or in accordance with the procedural schedule set in the applicable docket."

These findings and the remainder of this report were distributed to the EERMC on October 12, 2023 and presented to the EERMC by the EERMC Consultant Team at its October 19, 2023 meeting, where they were approved and adopted in a vote of the EERMC.

I. Introduction

This report was prepared by the EERMC to help fulfill the requirements of R.I.G.L. § 39-1-27.7(c)(5) related to the PUC's approval of the Company's three-year procurement plan and related annual energy efficiency plans. Since 2010, the EERMC has directed the Consultant Team to prepare this report for all three-year and annual plans filed with the PUC. This version addresses the Company's proposed *Annual Energy Efficiency Plan for 2024* (the "2024 EE Plan") and the *2024-2026 Energy Efficiency Three Year Plan* (the "Three Year Plan"), reviewed and endorsed by the Council on September 28, 2023. This report submits our finding that the 2024 EE Plan and Three Year Plan (collectively, the "EE Plans") are cost-effective as evidence to the PUC. It also describes the nature and process of the review.

In order to assess the cost-effectiveness of the EE Plans, the EERMC Consultant Team reviewed the details of the Company's Benefit-Cost Models ("BC Models") for each draft of the EE Plans to ensure that they accurately reflect the proposed program designs described in the Plans' narratives, recent evaluation results, and relevant TRM inputs. For the Three Year Plan, the Consultant Team reviewed and provided detailed comments on the first draft narrative on June 30th, and provided technical comments on the first draft BC Models on July 28th. For the 2024 EE Plan, the Consultant Team reviewed and provided detailed comments on the first draft narrative on August 24th and provided technical comments on the first draft BC Models on August 30th. The

Consultant Team also engaged in a detailed review of the second and final drafts of the EE Plans BC Models upon receipt from the Company on September 8th and 27th, respectively. The Consultant Team provided content on its findings to help inform the EERMC ahead of its September 28th vote to endorse the EE Plans.

II. Cost-Effectiveness Review

The Consultant Team reviewed the draft and final EE Plans to assess whether the cost-effectiveness analyses reflect recent evaluation results and relevant TRM inputs and are otherwise accurate.

As a result of these activities, the Consultant Team communicated with analysts and sector managers from the Company to address issues and questions related to program design and cost effectiveness. In numerous cases, this resulted in revisions to the EE Plans. Our key findings are that:

- The modeling and cost-effectiveness assumptions reviewed were sufficiently supported for the portfolio proposed by the Company, either in their original form or after iterating based on review provided during this process. Any issues identified in the BC Models or in the EE Plans related to cost-effectiveness analysis were addressed at the portfolio and program level by the Company's analyst team.
- The Company appropriately used new results from both Rhode Island and other relevant evaluations that were recently completed to update multiple measure baselines, net-to-gross ratios, measure lives, and other measure assumptions.

The filed EE Plans present the cost-effectiveness of the proposed programs using the RI Test. Table 1, below, summarizes the results in terms of benefit-cost ratio. Note that for these EE Plans, the Company is reporting the RI Test without economic benefits included. This is a result of deliberations that occurred during the hearings on the 2022 EE Plan in Docket 5189. The Company is also reporting the same RI Test noted above, but with benefits excluded for those that are not solely allocated to the Company. This is included to be responsive to the updated LCP Standards that were approved by the PUC on July 27th, 2023. Even when considering the RI Test without the economic benefits and benefits that are allocated to other jurisdictions, both the electric and gas portfolios are robustly cost-effective. Over the 2024-2026 period, electric portfolio benefits are approximately 149% of total costs of the investments, while gas portfolio benefits are 196% of costs.

Table 1. RI Test and TRC Test BCR Values

Portfolio	RI Test				RI Test (Intrastate)			
	2024	2025	2026	2024-2026	2024	2025	2026	2024-2026
Electric	1.70	1.75	1.76	1.73	1.46	1.50	1.52	1.49
Gas	1.96	1.96	1.99	1.97	1.95	1.95	1.99	1.96

The RI Test seeks to include a more complete set of benefits that better reflects state policy compared to the TRC. Importantly, the benefits associated with efficiency programs, including reductions in greenhouse gas (GHG) emissions, have been included by relying on the 2021 version of the *Avoided Energy Supply Costs in New England* report (AESC). Specifically, the EE Plans propose to utilize the New England Marginal Abatement Cost (MAC) based on a supplemental study to the 2021 AESC^{1,2}. As stated in the 2024 EE Plan³:

“the May re-release of the 2021 AESC study found that the New England MAC (electric sector) was \$124/short ton, leveled over a 15-year period, both values being in 2021 dollars.”

A small portion of this value – representing the near-term value of carbon reductions given current and likely future carbon regulation – is already included or “embedded” in the avoided energy costs. Therefore, the RI Test includes the remaining value of carbon emissions up to the full per-ton value. The 2021 AESC also quantified benefits for non-embedded nitrogen oxide (NOx) reduction benefits. These are much smaller than the non-embedded GHG reduction benefits, but they do appear on the figures below as an additional benefit under the RI Test.

Increased spending from installing energy efficiency measures creates jobs in the local economy. Participant and program spending on efficiency often has positive benefits to the local economy as a greater portion of total efficiency costs are spent locally than is the case for the costs of additional supply. Calculation of these benefits typically requires a regional economic model. Such a model was executed for the Company in 2014, and updated in 2019, the results of which

¹ The AESC 2021 Supplemental Study can be found at: https://www.synapse-energy.com/sites/default/files/AESC_2021_Supplemental_Study-Update_to_Social%20Cost_of_Carbon_Recommendation.pdf

² The Company has noted that it is actively involved in the Executive Climate Change Coordinating Council (EC4) and the Future of Gas Docket, which separately or in combination, may result in updated approaches or values in future plans.

³ This quote is drawn from the filed version of Rhode Island Energy’s 2024-2026 Energy Efficiency Three-Year Plan and 2024 Energy Efficiency Plan, Attachment 4, page 13. The filed version of the EE Plans can be found at: https://ripuc.ri.gov/sites/g/files/xkgbur841/files/2023-10/2335-RIE-Annual-ThreeYr-EEPlan_10-2-23-Bates.pdf

form the basis for the economic benefits historically included in the RI Test.⁴ During review of the economic development benefits in the 2022 EE Plan in Docket 5189, concerns were raised regarding whether the economic development benefits are capturing some of the benefits reflected in other RI Test categories. As a result, it was determined that economic development benefits should be reported separately from, rather than added together with, the other RI Test benefit and cost categories, to avoid any potential double counting. Consequently, economic development benefits are not part of the calculation of RI Test BCRs in this report.

The Consultant Team has reviewed the quantification of the GHG reduction and economic benefits calculated for the EE Plans. Figure 1 presents the results of the RI Test for the 2024 EE Plan in graphical form, and again demonstrates that both the electric and natural gas efficiency programs have a BCR greater than or equal to 1.0, as required by the PUC-approved LCP Standards and R.I.G.L. § 39-1-27.7 (c)(5)⁵.

Figures 2 & 3, below, show the major components of both the costs and benefits of the portfolios for the 2024 EE Plan, reflecting the version of the RI Test that excludes economic development benefits. As noted in the table above, the electric and gas portfolios are both cost-effective using this version of the RI Test. On the cost side, note that the BCR calculation includes an allowance for the Company's shareholder incentive at the nominal or "target" value.

The Consultant Team also reviewed the Company's assessment of the cost of efficiency as compared to alternatives; the LCP standards require that efficiency be lower cost than acquisition of additional supply. The EE Plans use the RI Test as an appropriate starting point to determine which costs to include in this assessment. This test captures the aspects of the Docket 4600A Framework that pertain to energy efficiency programs. The source for many of these values is the aforementioned 2021 AESC Study. The benefits in the RI Test are associated with the cost savings to Rhode Island from investing in energy efficiency instead of investing in additional energy supply. For the purpose of the RI Test, these values are described as a benefit of energy efficiency in the form of avoided costs. It is reasonable to assume that these avoided cost values can also be applied as the costs of procuring additional energy supply for the purpose of this assessment. This test captures the aspects of the Docket 4600A Framework that pertain to energy efficiency programs. The source for many of these values is the aforementioned 2021 AESC Study. The benefits in the RI Test are associated with the cost savings to Rhode Island from investing in

⁴ *Macroeconomic Impacts of Rhode Island Energy Efficiency Investments: REMI Analysis of National Grid's Energy Efficiency Programs*, National Grid Customer Department, November, 2014.

⁵ While Figure 1 only presents the RI Test Benefit Cost Ratios by Program for the 2024 EE Plan, the EERMC reviewed and confirmed that all proposed programs for 2025 and 2026 in the Three Year Plan have a BCR greater than or equal to 1.0.

energy efficiency instead of investing in additional energy supply. For the purpose of the RI Test, these values are described as a benefit of energy efficiency in the form of avoided costs. It is reasonable to assume that these avoided cost values can also be applied as the costs of procuring additional energy supply for the purpose of this assessment. The RI Test also details what is considered a cost of energy efficiency. These are costs incurred by the utility to implement the EE Plans and the expense borne by the customer for its share of the energy efficiency measure cost.

Figure 1. RI Test Benefit Cost Ratios by Program (2024)

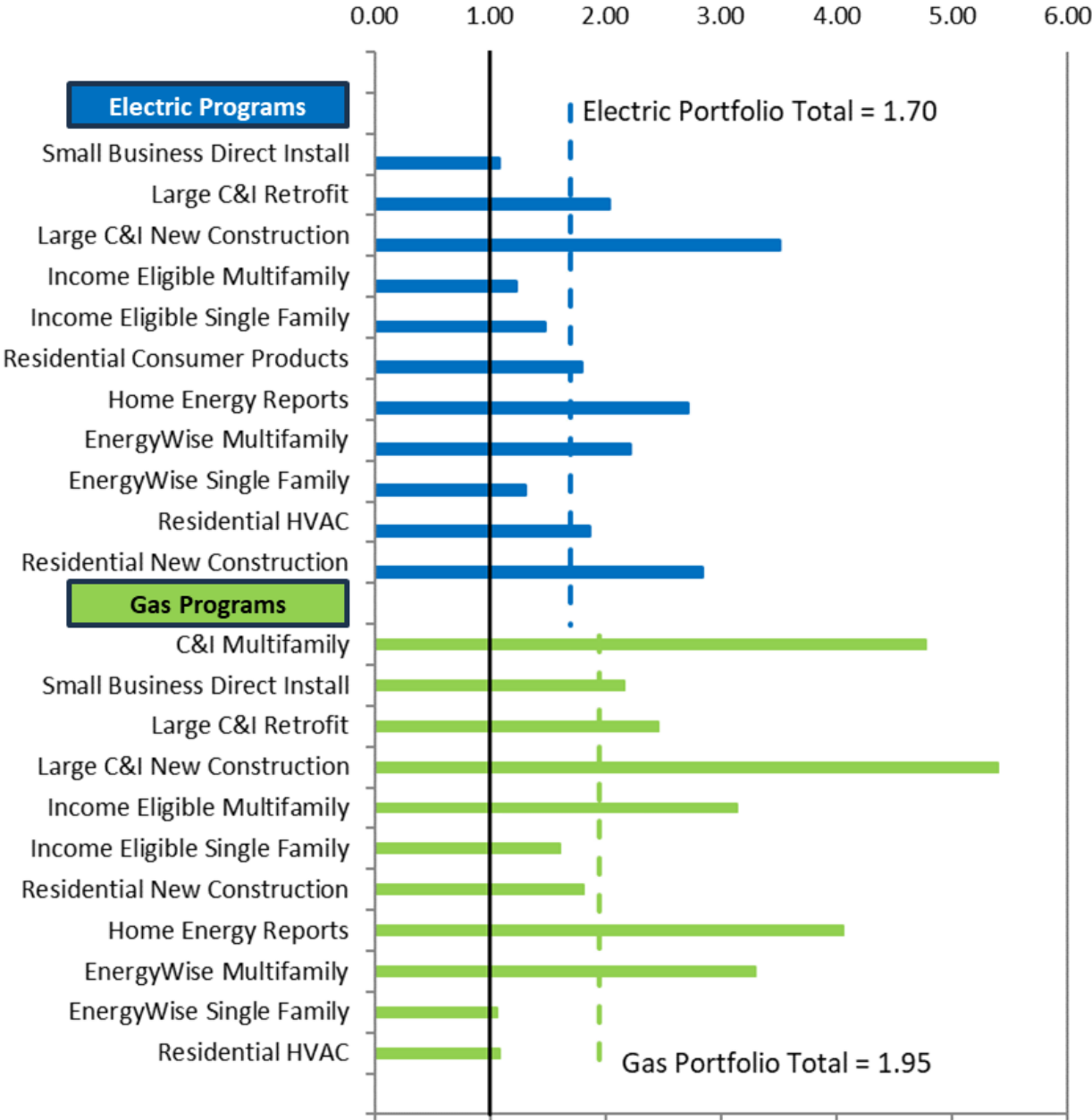


Figure 3. 2024 Planned Electric Costs and Benefits

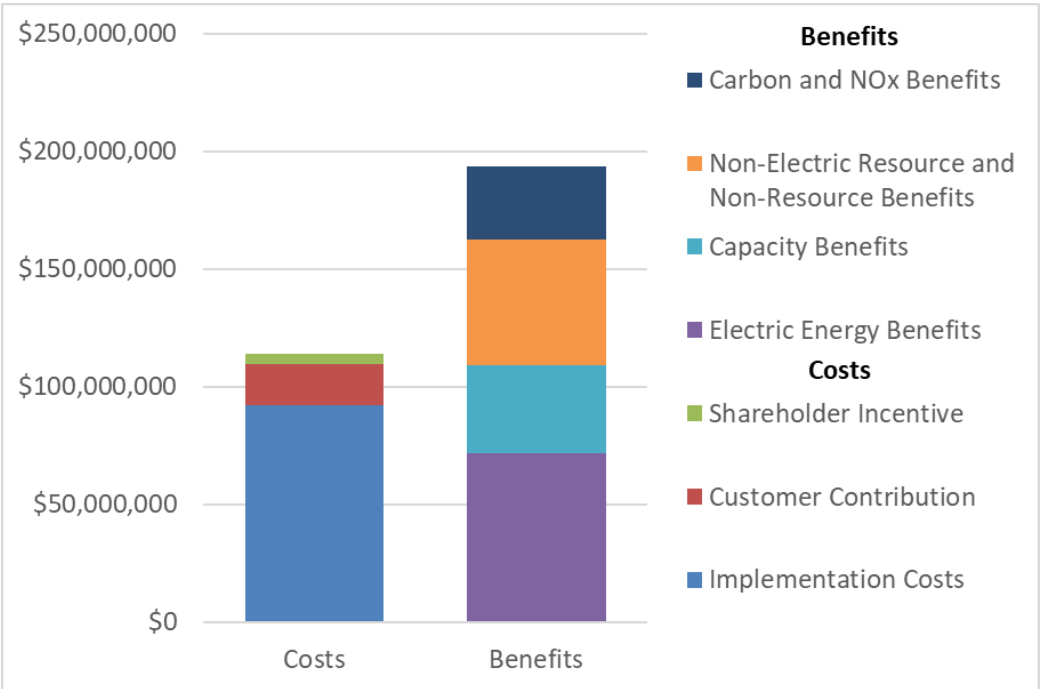
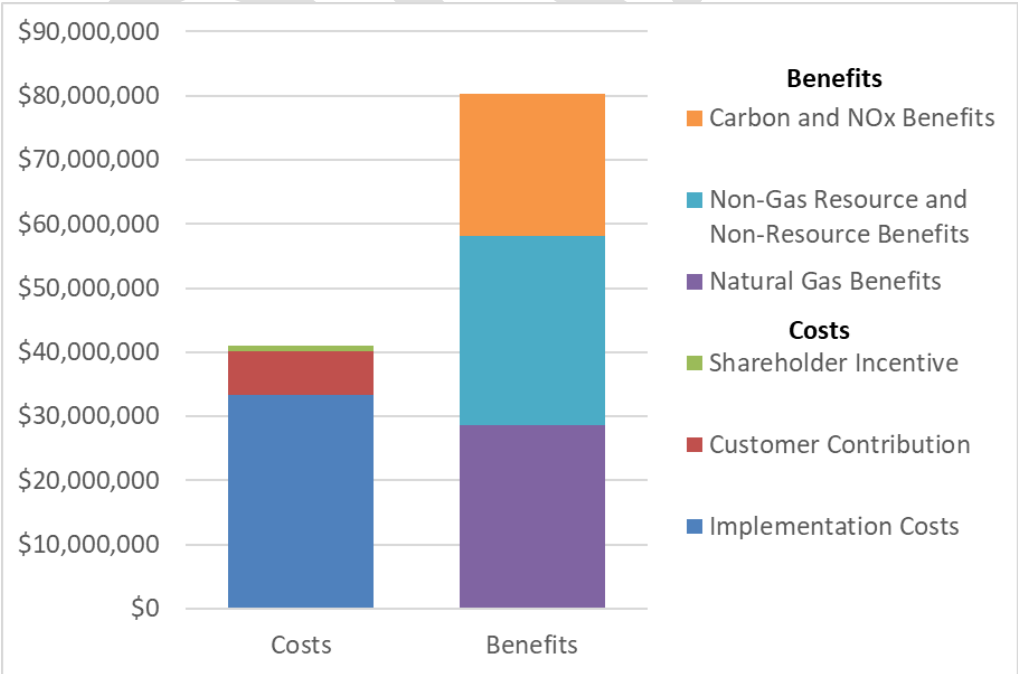


Figure 2. 2024 Planned Gas Costs and Benefits



The EE Plans enumerate all of the cost and benefit categories included in the RI Test and indicates which are included as a cost of efficiency, which are included as a cost of supply, and which are excluded from this comparison. The major categories that are excluded are economic development benefits, non-energy resource impacts such as water and sewer cost reductions, and other non-energy impact benefits other than those associated with income eligible rate discounts and reductions in arrearages. Tables 2 reflects the discussion in section 6.5.2 of the 2024 EE Plan, and shows that both the electric and gas portfolios, as proposed, are less than the cost of supply. This is true even when comparing the cost of the programs with only the cost of supply for Rhode Island.

Table 2. Comparison of Cost of Energy Efficiency and Alternative Supply

	Electric Portfolio	Electric Portfolio (RI Only)	Gas Portfolio	Gas Portfolio (RI Only)
Cost of Supply (\$M)	\$161.9	\$134.8	\$52.0	\$51.7
Cost of EE Programs (\$M)	\$113.8	\$113.8	\$41.1	\$41.0
Difference	\$48.1	\$21.0	\$10.9	\$10.7

Based on our participation in the discussions regarding this comparison and our review of the 2024 EE Plan, we believe that the Company has appropriately assessed the cost of efficiency and the cost of supply and determined that the former is less than the latter. Furthermore, we agree with the Company’s assessment in the Three-Year Plan that significant deviations from this finding for 2024 is unlikely in 2025 and 2026.

In summary, the EERMC Consultant Team concludes that the 2024 EE Plan and the 2024-2026 Three Year EE Plan meet the cost-effectiveness requirements of R.I.G.L. § 39-1-27.7(c)(5) and of the LCP Standards guidance.

III. Conclusion

For the reasons stated herein, the EERMC and the EERMC’s Consultant Team find that Rhode Island Energy’s *Annual Energy Efficiency Plan for 2024* and the *2024-2026 Energy Efficiency Three Year Plan* are cost-effective and are lower cost than the acquisition of additional supply pursuant to R.I.G.L. § 39-1-27.7 (c)(5).