The Narragansett Electric Company
d/b/a/ Rhode Island Energy
Docket No. 24-XX-EE
2026 Annual Plan Attachment 3

2026 Evaluation, Measurement, and Verification Plan

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1. INTRODUCTION

Evaluation, Measurement, and Verification (EM&V) is an integral and required part of Rhode Island Energy's energy efficiency program planning process. EM&V provides independent verification of impacts to ensure that savings and benefits claimed by Rhode Island Energy through its energy efficiency programs are accurate and credible. EM&V also provides insight into market characteristics and guidance on energy efficiency program design to improve the delivery of cost-effective programs.

Rhode Island Energy's EM&V Plan continues to focus on evaluating Rhode Island projects, markets, and energy efficiency programs while leveraging as many resources as possible from evaluation studies in other jurisdictions to maximize value for ratepayers while minimizing costs. These studies are commissioned by Rhode Island Energy. They are conducted by independent evaluation firms, whose goal is to produce an accurate, complete, and transparent review of Rhode Island's energy efficiency programs and markets. The types of evaluation may include (but not limited to) the following:

- **Impact Evaluations:** Comparisons of claimed savings against actual realized savings using methods such as literature review, billing analyses, engineering methods and onsite data logging as a means of verification.
- **Process Evaluations:** Broad examinations of existing practices, such as program delivery methods, for the purpose of gathering information to draw conclusions about effectiveness of existing processes, highlight best practices, and offer suggestions for future improvements.
- **Market Assessment Studies:** Broad studies aimed at assessing changes in market conditions, such as evolving adoption rates of current energy efficiency technologies.
- **Net-to-Gross Evaluations:** Studies aimed at quantifying the rate of free-ridership and spillover associated with energy efficiency participants and non-participants.

  The free-ridership rate is the percentage of savings attributable to participants who would have installed the measures in the absence of program intervention while spillover includes the effects of two components:

  1. Participants in the program who install additional energy efficient measures outside of the program as a result of participating in the program, and
  2. Non-participants who install energy efficient measures as a result of being aware of the program

The study methodologies and savings assumptions from evaluation studies are documented in the Rhode Island Technical Reference Manual (TRM). The TRM is reviewed and updated annually to reflect changes in technology, baselines, and evaluation results.

The entire evaluation process is managed by Rhode Island Energy in consultation with the Rhode Island Energy Efficiency Resource Management Council (EERMC) and the Office of Energy Resources (OER). The

EERMC and OER follow each study closely and are involved in planning, work plan development, and review of interim work products and study results.

Rhode Island Energy's EM&V framework provides confidence among ratepayers and stakeholders that programs are effective and EM&V activities are independent and objective.

2. Evaluation Studies Applicable to 2026

2.1 Overview

Rhode Island Energy, with input from EERMC and OER, expects to complete thirteen new (since the 2025 Annual Plan) Rhode Island-specific evaluation studies that will be applied beginning in 2026; see Section 2.2 below for a list of these studies.[1] The research studies include impact evaluations, process evaluations, and market studies in the residential and commercial and industrial (C&I) sectors, as well as studies that are considered cross-cutting.

A complete list of historical research studies is provided in Section 4 along with a brief summary of the impact of those results in planning Rhode Island Energy's programs. Most of these studies are posted on the EERMC website.[2] Prior year studies that have been superseded by studies completed since the filing of the 2025 Energy Efficiency Plan have been removed from this list.

Section 5 provides detailed descriptions, findings, and recommendations of each of the Rhode Island-specific studies listed in the next section. In addition, selected research studies completed in other regions and/or other jurisdictions, most commonly Massachusetts,[3] are periodically reviewed for applicability to Rhode Island due to similarity with ~~RI~~Rhode Island Energy's programs, either in the measures offered, or program structure or delivery. In some instances, the results of these other evaluations have been judged by Rhode Island Energy, in consultation with EERMC and OER, to be applicable to Rhode Island Energy's efficiency programs. Rhode Island Energy is adopting the results of these studies in 2026 program planning due to similarity, either in the measures offered, or program structure or delivery

2.2 Recent Rhode Island-Specific studies

The following studies have been completed since the 2025 Annual Plan filing or are expected to be completed before the end of 2025.

Commercial

- Process Evaluation of C&I New Construction Program (RI-24-CX-CINCProcess)
- Process Evaluation of C&I Custom Approach (RI-24-CX-CustProcessEval)

[1] Quantitative studies expected to be completed after approximately August 15, 2025, will not be used in program planning

[2] https://eec.ri.gov/data-and-publications/ then scroll to "Program Evaluation Studies."

[3] Prior to May 2022, Narragansett Electric Company was part of National Grid, which has affiliates in Massachusetts, and which facilitated the leveraging of evaluation studies.

- C&I New Construction Baseline Study (RI-22-CX-Codes)
- Market Characterization and Impact Evaluation of C&I Lighting Controls (RI-24-CE-Lighting)
- Impact Evaluation of PY2023 Custom Gas Installations (RI-24-CG-CustGasPY23)
- Impact Evaluation of PY2023 Custom Electric Installations (RI-24-CE-CustElecPY23)
- C&I Lighting Impact Evaluation (RI-25-CE-CommLighting)
- Process Evaluation of Existing Building Commissioning Program (RI-25-CX-ExistCommissioning)

Residential and Income-Eligible

- Residential Market Research - Moderate Income Study (RI-24-RX-MarketResearch)
- Income Eligible Single Family Impact Evaluation (RI-24-RX-IncEligible)
- Multifamily Custom Measure Impact Evaluation (RI-24-XX-MultiFamCustom)
- Residential Products Impact and Market Effects Evaluation (RI-25-RE-Products)
- EnergyWise & Income-Eligible Multifamily Impact Evaluation -Prescriptive-focus (RI-25-RX-MultiFam)
- Residential & Income-Eligible QA/QC Process Evaluation (RI-25-RX-QAQCProc)

Cross-cutting

- None

2.3 Recent Studies Adopted from Other Jurisdiction

Residential

- Massachusetts and Connecticut Heat Pump Metering Study[4]
- Residential Heat Pump Invoice Cost Analysis[5]
- Massachusetts Heat Pump Incremental Cost Research[6]
-

3. 2026 Planned Evaluation Studies

3.1 Overview

This section describes planned studies that focus on areas of interest to Rhode Island Energy's energy efficiency programs and build on the deep history of evaluation studies commissioned by Rhode Island Energy over numerous years. To optimize the use of evaluation resources, where programs are similar in

[4] https://ma-eeac.org/wp-content/uploads/MA-HPMS-CT-R2246-Heat-Pump-Metering-Study-Final-Report_April_2025.pdf

[5] MA23X14-B-RHPINV-Residential-Heat-Pump-Invoice-Cost-Study-Web.pdf

[6] Study-25-6a-MA22R51-B-HPMS-HP-Incremental-Cost-Research-Memo.pdf

program delivery and the population served with those offered in Massachusetts, and timing and budget permit, Rhode Island Energy will consider avenues to participate in Massachusetts studies.[7]

3.2 Summary

Table 2 lists evaluation studies that Rhode Island Energy plans to conduct in 2026 to inform the 2027 Annual Plan and future planning cycles. Barring changes to the 2027 Annual Plan schedule, studies that will be incorporated into the Annual Plan must be completed by August 2026. The proposed budget for evaluation study expenditures in 2026 is approximately $2.~~5~~4 million ($~~2.0~~1.8 million for electric and $0.5 million for gas), including staffing costs. The proposed budget for EM&V comprises approximately 2.~~7~~5% of the total portfolio budget in 2026.

Study labeling codes take the general form shown in Table 1. For example, RI-~~25~~24-CG-CustGas refers to the Custom Gas Evaluation Study that started in ~~2025~~2024 in the commercial sector for gas, while RI-~~24~~25-RX-~~IESF~~MultiFam refers to the evaluation study started in ~~2024~~2025 of the ~~income eligible single-family program~~Multifamily Programs for electric and gas.

Table 1. Study Labeling Code Format

[State]	–	[Year Study Initiated]	–	[Sector]	[Fuel]	–	[Keyword]
RI		24 25 26		R = residential C = commercial X = cross sector	E = electric G = gas X = electric & gas		

Table 2. Planned Evaluation Studies in 2026[8]

	(a)	(b)	(c)	(d)	(e)
	Sector	**Study Code**	**Type**	**Affected Programs**	**Study Name**
1	C&I	RI-25-CE-CustElecPY24 ~~RI-26-CE-CustElecPY25~~	Impact	C&I Elec	Impact Evaluation of Custom Electric Installations (continuing~~ & starting~~)
2	C&I	RI-25-CX-ISPResearch	Impact	C&I	Commercial and Industrial Industry Standard Practice Research (continuing)
3	C&I	RI-26-CE-CINonLtgPresc	Impact	Large C&I Electric	Large C&I Electric Non-Lighting Prescriptive Impact Evaluation

[7] Despite no longer being part of National Grid, Rhode Island Energy plans to stay abreast of Massachusetts evaluation activities that may be beneficial and applicable in Rhode Island and follow through as appropriate.

[8] NOTE: Table 2 contain a list of possible studies for 2026 that are very preliminary and have not been fully vetted yet. Budget constraints and other considerations will likely reduce the number and/or scope of studies listed here that make it into the final 2026 EM&V Plan.

4	C&I	RI-26-CG-CustGasPY24/25	Impact	Large C&I Gas	Impact Evaluation of PY2024/2025 Custom Gas Installations (Starting)
5	Residential	RI-25-RX-RMSS	Market	Residential	Residential Mechanical Systems Study (continuing)
6	Residential	RI-26-RE-AppRecycImpact	Impact	Appliance Recycling	Residential Appliance Recycling Impact Evaluation
7	Residential	RI-26-RX-Language Access	Market	Income Eligible	Language Access Needs Assessment Study
8	Residential	RI-26-RX-EquityAnalysis	Market	Income Eligible	Equity Analysis and Outreach Evaluation
9	Cross Cutting	RI-26-XX-CodeComp	Impact	All	Code Compliance Initiative
10	C&I	RI-26-~~DE~~CE-RefrigDemo	Demonstration	C&I	Refrigerant Swap Demonstration Evaluation

The EM&V team will follow Rhode Island Energy's standard procurement policy that cuts across programs to achieve the lowest cost procurement of required external services while enabling Rhode Island Energy to minimize administrative costs, deliver on program commitments, and meet time-sensitive regulatory deadlines. Rhode Island Energy's standard procurement policy is supported and enforced by a stand-alone internal procurement function. Contract characteristics below certain thresholds are eligible for sole sourcing while contract characteristics above thresholds require competitive procurement - unless it can be demonstrated to the procurement organization that securing multiple bids is not possible or practical.

Final reports along with graphical executive summaries will be made publicly available upon completion of the evaluation studies. All complete graphical executive summaries will be provided as a handout at EERMC meetings and posted on the EERMC website.[9]

The evaluation pathway for demonstrations, pilots, and assessments (DPA) is based on each effort's scale, budget, scope, and the availability of external data. Rhode Island Energy's EM&V team will provide guidance beginning at the Plan stage for all demonstrations, pilots, and assessments to ensure design and data collection are suitable to allow for effective evaluation. In cases where an independent evaluation is appropriate, the EM&V team will run the evaluation. For guidelines on the stakeholder review process and which pilots, demonstrations, and assessments will receive an independent evaluation, please see Attachment 7. The evaluation will follow the same established evaluation framework used in evaluations of established programs. This includes management of the independent

[9] https://EERMC.ri.gov/data-and-publications/ scroll down to Program Evaluation Studies

evaluation vendor by Rhode Island Energy's EM&V team in consultation with the EERMC and OER. See Attachment 7 for further details on pilots, demonstrations, and assessments. Funds for PDA evaluations are included as part of the PDA budget, as opposed to the evaluation budget.

3.3 Commercial and Industrial Planned Studies

RI-25-CE-CustElecPY24 – Impact Evaluation of PY2024 Custom Electric Installations (continuing)

~~**RI-26-CE-CustElecPY25 – Impact Evaluation of PY2025 Custom Electric Installations (starting)**~~

The objective of this impact evaluation is to provide verification of electric energy savings estimates for a sample of non-lighting custom electric projects through site-specific inspection, metering, and analysis. The results of this study will be used to determine the realization rates for custom electric energy efficiency offerings based on installations from 2024. This will continue 'rolling' evaluation efforts, where each year will evaluate roughly 1/3 of the number of sites needed for a full sample and results will be combined with results from the previous two years, which will keep the realization rates updated yearly. This study began in summer 2025 and will continue into 2026~~, at which time a new cohort from 2025 will be studied.~~

. Next year, we will be skipping the stand-alone evaluation of the PY2025 participants and will instead, in 2027, evaluate two years of participants for program years 2025 and 2026. These results will then be combined with the PY2024 analysis completed in 2026.**RI-25-CX-ISPResearch - Commercial and Industrial Industry Standard Practice Research (continuing)**

The objective of this study is to better understand what the baseline or industry standard practice (ISP) is for certain technologies. There are a few potential areas of investigation: One area is air compressors, where many projects use load/no load as the baseline, but VFD (variable frequency drive) compressors are ever more common and could be standard practice. We are studying compressor ISP jointly with Massachusetts. Other areas under consideration are variable frequency drives and changes related to adoption of the IECC 2024 building code. Rhode Island Energy will determine the specific area(s) for investigation in 2025/26.

RI-26-CE-CINonLtgPresc – Large C&I Electric Non-Lighting Prescriptive Impact Evaluation

Non-lighting prescriptive measures have not been studied since 2016, and this category of measures provide an appreciable amount of savings after the custom and lighting categories. Therefore, an impact evaluation to verify the savings achieved and to update measure savings parameters and/or the realization rates is timely and warranted.

RRI-26-CG-CustGasPY24/25 - Impact Evaluation of PY2024/2025 Custom Gas Installations (Starting)

The objective of this impact evaluation is to provide verification of natural gas energy savings estimates for a sample of custom gas projects through site-specific inspection, metering, and analysis. The results

of this study will be used to determine the realization rates for custom gas energy efficiency offerings based on installations from 2024 and 2025. For the first time we are skipping the stand-alone evaluation of the PY2024 participants and will instead evaluate two years of participants for program years 2024 and 2025. These results will then be combined with the PY2023 analysis completed in 2025.

This study will begin in summer 2026 and will continue into 2027. After that, the next cohort for gas will not begin until 2028 for the 2026 and 2027 program years.

RI-26-~~DE~~CE-RefrigDemo - Refrigerant Swap Demonstration Evaluation

This will be an evaluation of the proposed C&I refrigerant swap demonstration. It is currently anticipated to be a pre/post metering study of commercial refrigeration (grocery stores) swap outs from R404a to R448a, and new construction projects involving CO2 as refrigerant.

C&I Opportunities Study

The goal of this study is to identify non-lighting measures, delivery channels, organizational changes and / or changes to budgets and savings targets for Rhode Island Energy's Commercial and Industrial Sector for the 2027-2029 term with the ultimate objective of increasing non-lighting savings. The primary focus is electric savings; a secondary focus is natural gas savings. Rhode Island Energy seeks to significantly increase its non-lighting savings by the end of 2029 relative to achievements in 2024.

The analysis could include assessments of new or undersubscribed technologies and their savings potential, new applications of efficient technologies (e.g., extended motors) savings potential, market assessments, and review of delivery channels (custom, direct install, midstream, retrofit, trade allies and vendors).

This study is included in the evaluation budget and will be managed by the Company outside of the EERMC oversight process. Periodic updates and results will be shared with the EERMC.

3.4 Residential and Income-Eligible Planned Studies

RI-25-RX-RMSS – Residential Mechanical Systems Study (continuing)

This study began in 2025 but will be finalized in 2026. The study will provide Rhode Island Energy with an updated characterization of the heating, cooling, and water heating equipment (mechanical systems) in the state's housing stock. In addition, this study aims to assess the home types and characteristics of electrically heated homes and provide Rhode Island Energy with tools to identify and target such homes for energy efficient upgrades. The study will also assess readiness for heat pump water heaters for a subset of respondents.

RI-26-RE-AppRecycImpact – Residential Appliance Recycling Impact Evaluation

~~This study~~An Impact evaluation for this program was last completed in 2021, and refrigerator recycling continues to be a significant component of the portfolio. ~~Since~~In addition, a new vendor was introduced in late 2024. For these reasons, it is a good time to update the impact evaluation for savings parameters and/or realization rates.

RI-26-~~RE~~RX-LanguageAccess~~– RI-26-RX-~~ – Language Access Needs Assessment

This research would benchmark Rhode Island Energy's language access in the Income Eligible Single Family Program against best practices in language access to identify what's working well and where there are opportunities to improve. The evaluation team's experience with language access studies in other states ~~like~~, such as Massachusetts, equips the team with a pre-existing baseline for comparison to Rhode Island Energy's ~~programs~~Program. Research activities may include a benchmarking assessment ~~and either a~~as well as focus ~~group~~groups, surveys, or ~~individual~~ interviews with program leads and other market actors.

Although there can be language access needs that are similar across programs, it is important to focus on one program at a time in order to fully understand the language needs of that program's market actors using that program's delivery mechanisms. The Income Eligible Single Family Program was chosen for the 2026 Plan as we theorize that language access needs may be greater for this sector. We will consider studying additional programs in this way as part of future energy efficiency plans.

RI-26-RE-EquityAnalysis – Equity Analysis and Outreach Evaluation

Rhode Island Energy has established metrics centered on equity as described in Section 2.6.1 of the Main Text. As data on these metrics is collected, such as related to participation or effectiveness in Environmental Justice communities, Rhode Island Energy anticipates that, pending analysis of results, it may be desirable to pair data analysis with customer interviews or focus groups to facilitate an adjustment of strategies. To enable a full analysis of the program year 2025 data, this study would not launch sooner than the middle of 2026.

3.5 Cross-sector or Other Planned Studies

RI-26-XX-CodeComp - Code Compliance Initiative

The last Code Compliance Study was conducted in 2017, so an updated study of compliance and possible savings is warranted, for both C&I and Residential. This study involves reviewing code compliance official actions in a sample set of towns to determine the impact of Rhode Island Energy's code official training efforts.

4. Historic Evaluation Studies

This section contains a list of all historic studies still being used by Rhode Island Energy as the basis of claimed savings in the 2025 Program Plan and in the Technical Reference Manual. An at-a-glance summary in

Table 3 shows the studies by program, followed by the more detailed *Table 4* summarizing the relevant studies. These studies are available through the EEC, the PUC, and Rhode Island Energy. Table 3 also highlights in blue the studies that are included in the 2026 evaluation plan.

Table 3. Historic Evaluation Studies

	~~(a)~~	~~(b)~~	~~(c)~~	~~(d)~~	~~(e)~~	~~(f)~~
	(a) Sector/Program	(b) Impact	(c) Market	(d) Process	(e) Policy	(f) For 2026 studies, year of prior study
1	**Residential**					
2	**EnergyWise Multifamily**			2020		
3	*Custom*	2025				
4	*Prescriptive*	2025*	2025			
5	**EnergyWise Single Family**	2020		2020		
6	*Weatherization*	2023				
7	**Home Energy Reports**	2020		2017		
8	**Residential Consumer Products**		2025~~*~~			
9	*Appliance Recycling*	2026				2021
10	*Non-Recycling and Refrigeration*	2025~~*~~				
11	**Residential HVAC**					
12	*Heat Pumps*	2025~~*~~	2024			
13	**Residential New Construction**	2023				

14	*Code Compliance*	2017				
15	**Income Eligible**					
16	*Equity*		2026			
17	*Language Access*		2026			
18	**Income Eligible Multifamily**			2020		
19	*Custom*	2025				
20	*Prescriptive*	2025*				
21	**Income Eligible Single Family**	2025				
22	**Commercial & Industrial**					
23	**Large C&I New Construction**			2025		
24	*Code Compliance*	2017				
25	*Baseline/ ISP*		2025			
26	**Large C&I Retrofit**					
27	*Commissioning*			2025*		
28	**Large C&I Custom**			2024		
29	*C&I Custom Electric*	2026		2025		2025
30	*C&I Custom Gas*	2026		2025		2025
31	*C&I Custom CDA*	2018				
32	**Large C&I ISP**	2025				
33	**Large C&I Prescriptive**					
34	*C&I Lighting Controls*	2025*	2025*			
35	*C&I Lighting*	2025*	2024			
36	*C&I Non-Lighting*	2026				
37	*C&I Other*	2023				
38	**Small Business Direct Install**			2023		

39	*Electric*	2020				
40	*Gas*	2019				
41	**C&I Multifamily**					
42	*Custom*	2025				
43	*Prescriptive*	2025*	2025			
44	**Cross Cutting/Other**					
45	*Avoided Cost*				2024	
46	*C&I Free Ridership/Spillover*		2024			
47	*Code Compliance*	2026				
48	*Economic Impacts*	2023				
49	*Measure Life*	2024				
50	*Non-Participant*		2022			
51	*Piggybacking*			2020		
52	*Potential Study*		2020			
53	*RMSS*		2025*			
54	*Resi & Income Eligible QA/QC*			2025*		
55	*Resi Participation*		2022			
~~56~~	~~*TMY3 to TMYx*~~	~~2025~~				
~~57~~5 6	*Workforce Analysis*		2023			

** These studies are on-going and expected to be completed in 2025*

Table 4. Completed Evaluation Studies Applicable in 2025

2025		
(a) **Study**	(b) Impact Descriptions	**(c) Sector**

Deleted Cells

1	Resource Innovation (Cadeo) and Illume, Weatherization Motivations: Moderate Income, January 2025	The objective of this study was to understand the motivations, barriers, and willingness to pay for weatherization. Study recommended setting out-of-pocket cost to below $300 for weatherization.	Res
2	Resource Innovation (Cadeo), Residential Products Impact Evaluation, August 2025	The objective of this study was to quantify the gross savings and NTG of select measures.	Res
3	Resource Innovation (Cadeo), Multifamily Impact Evaluation, August 2025	The objective of this study was to evaluate the gross savings and NTG of a range of measures from the Multifamily program.	Cross-Cutting
~~2~~4	Resource Innovation (Cadeo) Multifamily Custom Programs Impact Evaluation, March 2025	The objective of this study was to assess and review the electric and gas energy savings multifamily programs. Study recommended adjusted realization rate.	**Cross-Cutting**
~~3~~5	Cadeo, Income Eligible Single Family Impact Evaluation, January 2025	Updated and reviewed the gross per-unit energy savings for all measures in Rhode Island Energy's Income Eligible Single Family (IESF) Program using data from 2021–2023.	**IE**
~~4~~6	Resource Innovation (Cadeo) and NMR Group, C&I New Construction Program Process Evaluation, January 2025	This study evaluated RIE's C&I New Construction Program to assess its design, operations, and customer experience.	**C&I**
~~5~~7	DNV, Rhode Island Non-Residential New Construction Industry Standard Practice Study, March 2025	This study aimed to assess standard building practices and energy code compliance for selected measures in buildings permitted under IECC 2015. Study updated adjusted ISP factor.	**C&I**
~~6~~8	Cadeo, Large C&I Retrofit Program (Custom Pathway) Process Evaluation, May 2025	The evaluation aimed to assess program performance, identify improvement opportunities, and support future program planning.	**C&I**
9	DNV, Impact Evaluation of PY2023 Custom Gas Installation, September 2025	The study updated realization rates for custom gas projects, as part of a rolling effort that incorporated results from PY 2021, PY2022, PY2023.	**C&I**
10	DNV, Impact Evaluation of PY2023 Custom Electric Installation, September 2025	The study updated realization rates for custom electric projects, as part of a rolling effort that incorporated results from PY 2021, PY2022, PY2023.	**C&I**

2024			
	(a) **Study**	(b) **Impact Descriptions**	(c) **Sector**
~~7~~11	Cadeo, Comprehensive Measure Life Review II, September 2024	The study reviewed prescriptive measure life assumptions and ensured they aligned with recent research, Rhode Island evaluation studies, and industry best practices. The study also recommended measure life updates when appropriate.	Cross-Cutting
~~8~~12	Illume, Electric Resistance Heat Characterization Study, December 2024	The study identified the needs of homeowners and landlords with electric resistance heat and ways to overcome barriers heat pump adoption.	Res
~~9~~13	Guidehouse, Incremental Cost Research Memo-Massachusetts Heat Pump, August 2024~~DNV, Rhode Island Swarm Thermostats – Technology Evaluation Pilot, March 2024~~	The ~~evaluation calculated~~study aimed to estimate the ~~impacts~~incremental cost of installing ~~the Swarm Logic control technology at four sites equipped with HVAC units controlled by Wi-Fi thermostats.~~ a heat pump.	~~C&I~~Res
~~10~~14	Guidehouse, Massachusetts and Connecticut 2024 Heat Pump Study, August 2024/ 2025 Heat Pump Study Review and Application to Rhode Island Memo, September 2025~~Synapse Energy Economics, Avoided Energy Supply Components in New England 2024 Report, February 2024~~	The study aimed to quantify residential heat pump usage, peak demand, and performance through EE programs. Guidehouse adopted the Heat Pump Study and applied baseline adjustments to the various heat pump measures to align with the baseline used in Rhode Island.~~The study developed new estimates of avoided costs associated with energy efficiency measures for program administrators throughout New England States. Rhode Island used the avoided costs of energy, capacity, natural gas, fuel oil, environmental costs and demand reduction induced price effects resulting from this study for 2025 program planning.~~	~~All~~Res
~~11~~15	NMR, Residential Heat Pump Invoice Cost Study~~Tetra Tech, 2022 Commercial and Industrial Programs Free-Ridership and Spillover Study, January 2024~~	The study ~~updated free-ridership and spillover rates for~~analyzed heat pump data to estimate the	Res~~C&I~~

		~~C&I program~~costs of various types of heat pump.	
~~12~~16	DNV, Rhode Island Swarm Thermostats – Technology Evaluation Pilot, March 2024~~DNV, LightingPLUS Market Characterization. A joint Program Administrator Study, December 2024~~	The evaluation calculated the impacts of installing the Swarm Logic control technology at four sites equipped with HVAC units controlled by Wi-Fi thermostats. ~~The study aimed to assess the remaining energy savings potential in the commercial and industrial lighting market and evaluate six emerging "NextGen" lighting technologies.~~	C&I
~~13~~17	Synapse Energy Economics, Avoided Energy Supply Components in New England 2024 Report, February 2024~~DNV, Impact Evaluation of PY2022 Custom Gas Installations, August 2024~~	The study developed new estimates of avoided costs associated with energy efficiency measures for program administrators throughout New England States. Rhode Island used the avoided costs of energy, capacity, natural gas, fuel oil, environmental costs and demand reduction induced price effects resulting from this study for ~~The study updated realization rates for custom electric projects, as part of a rolling effort that incorporated results from PY2020, PY2021, and PY2022.~~2025 program planning.	~~C&I~~Cross-Cutting
~~14~~18	Tetra Tech, 2022 Commercial and Industrial Programs Free-Ridership and Spillover Study, January 2024~~DNV, Impact Evaluation of PY2022 Custom Electric Installations, August 2024~~	The study updated ~~realization~~free-ridership and spillover rates for ~~custom gas projects, as part of a rolling effort that incorporated results from PY2020, PY2021, and PY2022~~the C&I program.	C&I
~~15~~19	DNV, LightingPLUS Market Characterization. A joint Program Administrator Study, December 2024 ~~DNV, MA Impact Shape Final, February 2024 (Leveraged from MA)~~	The study aimed to assess the remaining energy savings potential in the commercial and industrial lighting market and evaluate six emerging "NextGen" lighting technologies.	**C&I**

		~~The study updated commercial loadshapes for end uses such as refrigeration, compressed air, food service, water heating, etc.~~	
2023			
	(a) Study	(b) Impact Descriptions	**(c)** **Sector**
~~16~~20	Cadeo & NMR, Residential New Construction and Code Compliance Study, May 2023	The study updated the User Design Reference Home baseline measure level efficiencies, observed how building practices have changed over time, and identified the level of code compliance.	Res
~~17~~21	NMR Group, Residential Heat Pump NEIs Study, July 2023 (Leveraged from MA)	The study updated NEIs for heat pump related measures.	Res
~~18~~22	Guidehouse, MA Residential Building Use and Equipment Characterization – Phase 7, December 2023 (Leveraged from MA)	The study collected saturation, characterization, and usage behavior data for major appliances, HVAC equipment, and electronics in MA homes. The study updated residential load shapes based on the findings.	Res
~~19~~23	Cadeo, Comprehensive Measure Life Review, August 2023	The study reviewed prescriptive measure life assumptions and ensured they aligned with recent research, Rhode Island evaluation studies, and industry best practices. The study also recommended measure life updates when appropriate.	Cross-Cutting
~~20~~24	Cadeo, EnergyWise Single Family Weatherization Impact Evaluation, August 2023	The study updated the gross energy savings for EWSF's weatherization measures, for both primary and secondary heating and cooling. The evaluation accounted for energy savings associated with natural gas, electricity and/or delivered fuels (oil, propane, and wood).	Res
~~21~~25	DNV, Impact Evaluation of PY2021 Custom Gas Installations, August 2023	The study updated realization rates for custom gas projects, as	C&I

		part of a rolling effort that incorporated results from PY2019, PY2020, and PY2021.	
~~22~~26	DNV, ISP Recommendations: Ultra Low Temperature Freezers, September 2023 (Leveraged from MA)	The study investigated industry standard practice for ultra-low temperature freezers and updated the baseline from the results.	C&I
~~23~~27	DNV, Impact Evaluation of PY2021 Custom Electric Installations, August 2023	The study updated realization rates for custom electric projects, as part of a rolling effort that incorporated results from PY2019, PY2020, and PY2021.	C&I
~~24~~28	DNV, Rhode Island Commercial Food Service Equipment ISP, August 2023	The study characterized industry standard practice in RI for commercial kitchen equipment by incorporating the 2023 appliance standards and prevalence of used equipment in the marketplace.	C&I
~~25~~29	Cadeo, Small Business Program Process Evaluation, August 2023	The study assessed program activities and identified opportunities for program enhancement for the small business program.	C&I
~~26~~30	BW Research Partnership, Rhode Island Energy Workforce Development, August 2023	The study quantified the current energy efficiency workforce in RI, identified needs and opportunities for the future, highlighted workforce development gaps and potential solutions, and identified potential roles for RI Energy in supporting energy efficiency workforce development in RI.	Cross-Cutting
2022			
	(a) **Study**	(b) **Impact Descriptions**	(c) **Sector**
~~27~~31	DNV, C&I Lighting Market Characterization and Adjusted Measure Life Study, August 2022	The study calculated adjusted measure lives for non-residential custom and prescriptive lighting measures for RI.	C&I
~~28~~32	Cadeo, Non-Residential Technical Reference Manual Review,	The study performed a comprehensive review of the non-residential prescriptive measures in the MA TRM and recommended updates for key parameters.	C&I

	October 2022 (Leveraged from MA)		
~~29~~33	Steam Traps and Boiler Efficiency Research Phase II, November 2022 (Leveraged from MA)	The study conducted research of steam trap projects practices and boiler plant efficiency measurements to improve project accuracy.	C&I
~~30~~34	DNV, Rhode Island Cannabis Industry Standard Practice, August 2022	The study identified industry standard practices for the medical market cannabis industry with a focus on horticultural lighting, lighting controls, cultivation area HVAC, HVAC controls, and dehumidification.	Cross- Cutting
~~31~~35	Cadeo, Nonparticipant Market Barriers Study, June 2022	The study characterized the customer groups not participating in Rhode Island Energy's energy efficiency programs, determined barriers to participation, and identified opportunities to engage nonparticipants.	Cross- Cutting
~~32~~36	Cadeo, Participation and Multifamily Census Study, June 2022	The study identified trends and drivers in participation and the likelihood of nonparticipants opting into a residential program in the future. The study also developed an algorithm to identify multifamily buildings suitable for RIE's multifamily programs.	Cross- Cutting
2021			
	(a) **Study**	(b) **Impact Descriptions**	(c) **Sector**
~~33~~37	DNV, Impact Evaluation of PY2019 Upstream Lighting Program, July 2021	This study updated prospective realization rates and impact factors for the C&I Upstream lighting program. The values reflect decreasing ISR values for Screw-in products and increasing ISRs for linear products. These will be applicable for 2022, 2023, and beyond.	C&I
~~34~~38	DNV, Franchise Controls Deemed Savings Study, March 2021 (Leveraged study from MA)	This study recommended a deemed savings value of 5,344 kWh for a building automation system (BAS) measure that controls small individual food service appliances.	C&I
~~35~~39	DNV, O&M and Non-O&M NEI Study (MA20X10-B-CIOMNEI), October 2021	This study developed O&M and non-O&M non-energy impacts (NEIs) across all C&I measures and programs.	C&I
~~36~~40	DNV, Upstream Lighting NTG, June 2021 (Leveraged study from MA)	This study updated NTG values for upstream lighting technologies and adjusted the values down significantly due to heavy free ridership.	C&I
~~37~~41	DNV, Ground Source Heat Pump eTRM	This study recommended that GSHPs be broken out from ASHPs into their own category offering to allow the program	C&I

	Measure Review, March 2021 (Leveraged study from MA)	to attribute savings, baselines, and lifetimes in a more defensible way. It also recommended the GSHP lifetime be updated to 25 years.	
~~38~~42	DNV, Energy Management System ISP Study, 2021 (Leveraged study from MA)	This study identified industry standard practices for energy management systems, with a particular focus on criteria for determining when an existing system should be considered failed.	C&I
~~39~~43	NMR Group, Inc., Rhode Island Appliance Recycling, November 2021	This study updated the gross kWh savings, realization rates and NTG factors for refrigerator and freezer recycling measures.	Res
~~40~~44	Guidehouse, RCD Virtual Assessment Study, March 2021 (Leveraged study from MA)	This study found that in-service rates are lower for self-installed measures. Rhode Island leveraged results from this study to update the in-service rates for instant savings measures in the EnergyWise Single Family program.	Res
~~41~~45	Guidehouse, Comprehensive TRM Review, April 2021 (Leveraged study from MA)	This study updated savings assumptions and effective useful lives (EUL) of several residential measures in MA. Rhode Island adopted the results from this study to update savings and EUL assumptions for several measures in the residential programs.	Res
~~42~~46	NMR, Low Income Multifamily Health NEI (TXC 50), July 2021 (Leveraged study from MA)	This study produced NEI values associated with energy efficiency programs in Income Eligible, Multifamily buildings. A total of 4 health and safety NEIs were monetized as part of this study. Arthritis, Thermal Stress (cold), Home Productivity, and reduced fire risk were all found to have Annual Per unit values of $49, $1,426, $49, and $13, respectively, totaling $1536. These values are allocated to all applicable air sealing, insulation, and heating measures.	Res
~~43~~47	NMR, Residential New Construction Quick Hit NEI Study (MA20X14-RNCNEI), September 2021 (Leveraged study from MA)	The study produced updated NEI values for heating related measures offered through the Residential New Construction program. The total Heating NEIs for RNC went from an Annual Per Unit value of $117 to $142.33 due to increases in thermal comfort and noise reduction related impacts.	Res
~~44~~48	NMR, Residential Downstream/Upstream Products Net-to-Gross Study, June 2021 (Leveraged study from MA)	This study yielded prospective net-to-gross ratios and retrospective and prospective in-service rates for products supported by the Residential Retail or Residential Coordinated Delivery Initiatives. Rhode Island adopted the results from this study to update 2022 planning assumptions for ENERGY STAR Products program.	Res
~~45~~49	NMR, Low-rise Residential New Construction Net-to-Gross Study, July 2021 (Leveraged study from MA)	This study yielded prospective and retrospective net-to-gross ratios for measures supported by the Low Rise Residential New Construction offering. Rhode Island adopted the results from this study to update 2022 planning assumptions.	Res
~~46~~50	NMR, Renovations and Additions Net-to-Gross	This study yielded prospective and retrospective net-to-gross ratios for measures supported by the Renovations and	Res

	Study, July 2021 (Leveraged study from MA)	Additions Residential New Construction offering. Rhode Island adopted the results from this study to update 2022 planning assumptions.	
~~47~~51	Guidehouse, Impact Analysis of Residential Wi-Fi Thermostats, September 2021 (Leveraged study from MA)	This study updated savings assumptions for programmable and Wi-Fi thermostats delivered through retail and direct install channels. Rhode Island adopted the draft results from this study to update savings for programmable and Wi-Fi thermostat measures in the residential HVAC and retrofit programs.	Res
~~48~~52	Net-to-Gross Research of RCD and Select Products Measures (MA20R28) (Leveraged from MA)	For RI, the study applied new NTG results for the residential gas and electric HVAC programs.	Res
	2020		
	(a) **Study**	(b) **Impact Descriptions**	(c) **Sector**
~~49~~53	Cadeo, Impact and Process Evaluation of EnergyWise Single Family Program, September 2020.	This study updated gross savings, in-service rates, and net-to-gross ratios for the EnergyWise Single Family program.	Res
~~50~~54	Cadeo, Impact and Process Evaluation of EnergyWise Multi Family Program, September 2020.	This study updated gross savings, realization rates, in-service rates, and net-to-gross ratios for the EnergyWise Multi Family program.	Res
~~51~~55	Cadeo, Impact and Process Evaluation of Income Eligible Multi Family Program, September 2020.	This study updated gross savings, realization rates and in-service rates for the Income-Eligible Multi Family program.	Res
~~52~~56	Cadeo, Impact Evaluation of Home Energy Reports Program 2017-2019, September 2020.	This study updated realization rates for the Home Energy Reports program.	Res
~~53~~57	DNV GL, Impact Evaluation of 2017 Small Business Electric Installations, March 2020.	The study updated electric non-lighting impact factors for the Small Business initiative. RI leveraged the MA study of this initiative.	C&I
~~54~~58	DNV GL, C&I Measure Life Study, March 2020. (Leveraged Study from MA)	This study informed Effective Useful Lives and Remaining Useful Lives for key C&I energy efficiency measures, updating the commercial boiler EUL. RI leveraged the MA study of this initiative.	C&I

~~55~~59	The Brattle Group, The Road to 100% Renewable Energy by 2030 in Rhode Island, December 2020.	This study provided a high-level economic analysis of the key factors that will guide RI to meet 100% of the state's electricity demand by 2030 through renewable generation and efficiency. The study updated economic impact multipliers to quantify the benefits of future EE programs in the Rhode Island economy.	Cross-Cutting
~~56~~60	DNV, Rhode Island Piggybacking Diagnostic Study, January 2020	The study developed guidance on when it is appropriate to "piggyback" on MA studies.	Cross-Cutting

2019			
	(a) **Study**	(b) **Impact Descriptions**	(c) **Sector**
~~57~~61	NMR, RLPNC 17-3 Advanced Power Strip Metering Study (Revised). March 2019. (Leveraged study from MA)	This study yielded recommended gross electric savings and realization rates from advanced power strips offered through the Home Energy Services and upstream programs. Rhode Island adopted the result from this study to inform savings for Tier 1 and Tier 2 advanced power strips offered through its Retail Products program.	Res
~~58~~62	DNV GL, Impact Evaluation of PY2016 RI C&I Small Business Initiative: Phase I. June 2019.	The study updated impact factors for the Small Business initiative. The RI study leveraged the MA study of the same initiative.	C&I

2018			
	(a) **Study**	(b) **Impact Descriptions**	(c) **Sector**
~~59~~63	Energy & Resource Solutions, Two-Tier Steam Trap Savings Study, April 2018.	This MA study recommends a two-tier approach for prescriptive steam traps. It calculates deemed savings to be 8.4 MMBtu/yr. for system operating pressure ≤15 psig, and 35.6 MMBtu/yr. for system operating pressure is >15 psig.	C&I
~~60~~64	Navigant, Wi-Fi Thermostat Impact Evaluation Secondary Research Study. September 2018. (Leveraged study from MA)	This study recommended annual savings values of 31 therms for combustion heating, 97 kWh for electric resistance heating, and 64 kWh for central air conditioning for Wi-Fi thermostats. Rhode Island adopted these results to update savings assumptions for Wi-Fi thermostats in HVAC and residential retrofit programs.	Res
~~61~~65	DNV GL, Impact Evaluation of PY 2015 Rhode Island Commercial and Industrial Upstream	The study updated impact factors for the Upstream Lighting initiative. The RI study leveraged the MA study of the same initiative.	C&I

	Lighting Initiative. September 2018.		
~~62~~66	DNV GL, Rhode Island Commercial & Industrial Impact Evaluation of 2013-2015 Custom Comprehensive Design Approach. October 2018.	The study updated the realization rate for the CDA initiative. The RI study leveraged the MA study of the same initiative.	C&I
~~63~~67	DNV GL, Prescriptive C&I Loadshapes of Savings. March 2018.	This MA study pooled known sources of 8,760 savings loadshapes in an interactive tool to estimate general prescriptive measure loadshapes over customizable time periods.	C&I
~~64~~68	NMR, Rhode Island Residential Appliance Saturation Survey. October 2018	This study developed an inventory of residential end-uses, including appliances, consumer electronics, heating and cooling equipment, thermostats, water heating, and building characteristics. Findings from this study will be used to inform program planning and support future potential studies in Rhode Island.	Res
~~65~~69	Navigant, MA Residential Electric Loadshape and Baseline Study (Heating and Cooling Season report). July 2018. (Leveraged study from MA)	This study collected saturation, penetration, and usage behavior data for all major electric and gas appliances in Massachusetts. Rhode Island adopted the end use load shapes determined by this study.	Res
~~66~~70	NMR/DNV GL, TXC29 Market-Rate Rental Property NEI Study (Phase 1), March 2018	This study identified and analyzed NEIs associated with market-rate multifamily properties.	Res
	2017		
	(a) **Study**	(b) **Impact Descriptions**	(c) **Sector**
~~67~~71	NMR, 2017 Rhode Island Code Compliance Enhancement Initiative Attribution and Savings Study	The study found residential and commercial attribution factors of 23% and 46%, respectively, which were used along with study results on average savings as well as construction activity projections to calculate the CCEI's projected savings from 2018-2020.	C&I
~~68~~72	DNV-GL, MA45 Prescriptive Programmable Thermostats, March 2017	This study updated programmable thermostat deemed gas savings for C&I programs.	C&I
~~69~~73	Illume, Rhode Island Home Energy Report Program Impact and	The study found that the program is working effectively. The study recommended continued segmentation and message testing to further enhance program impact.	Res

	Process Evaluation, 2017		
		2016	
	(a) **Study**	(b) **Impact Descriptions**	(c) **Sector**
~~70~~74	DNV-GL, Impact Evaluation of 2014 RI Prescriptive Compressed Air Installations Final Report, July 2016	This study yielded an energy realization rate for prescriptive compressed air compressors, dryers, and EE accessories.	C&I
~~71~~75	DNV-GL, Impact Evaluation of 2012 National Grid-Rhode Island Prescriptive Chiller Program Final Report, July 2016	This study yielded an energy realization rate for prescriptive chillers.	C&I
~~72~~76	DNV GL, Stage 2 Results—Commercial and Industrial New Construction Non-Energy Impacts Study—Final Report, prepared for the Massachusetts Program Administrators, March 2016	The purpose of this study was to quantify the dollar value of participant NEIs for C&I NC projects completed in 2013, and to estimate gross NEIs per unit of energy savings resulting from NC electric and gas measures separately.	C&I
		2014	
	(a) **Study**	(b) **Impact Descriptions**	(c) **Sector**
~~73~~77	DNV GL, 2014, Impact Evaluation of National Grid Rhode Island C&I Prescriptive Gas Pre-Rinse Spray Valve Measure	The evaluation examined the gas and water savings associated with the installation of reduced-flow pre-rinse spray valves. The results are based on site measurements from MA and RI facilities. The final gross gas and water savings are 11.4 MMBtu and 6,410 gallons per spray valve respectively.	C&I
		2012	
	(a) **Study**	(b) **Impact Descriptions**	(c) **Sector**
~~74~~78	TetraTech, Final Report – Commercial and Industrial Non-Energy Impacts Study, (prepared for Massachusetts Program	This report provides a comprehensive set of statistically reliable non-energy impact (NEI) estimates across the range of C&I prescriptive and custom retrofit programs offered by the MA electric and gas Program Administrators (PAs). The analytical methods used allow this report's findings to be applicable to RI.	C&I

	Administrators), June 29, 2012		
		2011	
	(a) **Study**	(b) **Impact Descriptions**	(c) **Sector**
~~75~~79	KEMA, Inc., C&I Unitary HVAC Loadshape Project Final Report, Prepared for the Regional Evaluation, Measurement, and Verification Forum, June 2011	This study produced updated diversity and equivalent full load hours for unitary HVAC measures using end use metering.	C&I
~~76~~80	NMR/TetraTech, MA Special and Cross Sectors Studies Area, Residential and Low-Income NEI Evaluation, August 2011	This study quantified NEIs that apply to residential and low-income programs.	Res

5. 2025 Evaluation Study Findings

5.1 Rhode Island-Specific Studies

RI-25-XX-Impact Evaluation- Multifamily

Type of Study: Impact Evaluation
Conducted by: Resource Innovations
Date Evaluation Conducted: August 2025

Evaluation Objective and High-Level Findings:
The primary objective of this study was to evaluate per-unit gross and net energy savings and demand reductions for a range of Multifamily program products incentivized by Rhode Island Energy. The evaluation used engineering analysis and participant surveys to determine gross savings and net-to-gross (NTG) ratios. High-level findings include finalized NTG values for key measures and updated gross savings estimates based on Rhode Island-specific data and federal standards.

Table 5. Multifamily measures NTG values

	(a)	(b)	(c)
	Measure	NTG	FR
1	Hot water fixtures	1.0	0.00
2	Weatherization	0.95	0.05
3	Smart power strips	N/A	N/A
4	Hot water pipe wraps	1.00	0.00
5	Thermostats	0.75	0.25
6	Common Area Lighting	N/A	N/A
7	Boiler Controls	N/A	N/A
7	Duct Insulation	N/A	N/A

Programs to which the Results of the Study Apply:
The results of this study are applicable to the customers in Multifamily programs in the Residential, Commercial and Income Eligible Sectors.

Evaluation Recommendations included in the Study:
The study recommends updating the NTG ratios for the evaluated measures

Explain Whether or Not Rhode Island Energy (RIE) Decided to Adopt Recommendations from the Study:
Rhode Island Energy has adopted the NTG values for all evaluated measures. The Gross Savings estimates are still being finalized and are not yet ready for inclusion in the 2026 Annual Plan. Once finalized, Rhode Island Energy will review the results and determine whether to adopt the gross savings estimates for future planning.

Savings Impact: The adopted recommendations provide a more accurate estimate of the Gross savings for the evaluated measures

RI-25-RX-ResProducts Residential Products Impact Evaluation

Type of Study: Impact Evaluation
Conducted by: Resource Innovations
Date Evaluation Conducted: August 2025

Evaluation Objective and High-Level Findings:
The primary objective of this study was to evaluate per-unit gross and net energy savings and demand reductions for a range of residential products incentivized by Rhode Island Energy. The evaluation used engineering analysis and participant surveys to determine gross savings and net-to-gross (NTG) ratios. High-level findings include finalized NTG values for key measures and updated gross savings estimates based on Rhode Island-specific data and federal standards.

Table 6. Residential Products Gross Savings and NTG values

	(a)	(b)	(c)	(d)	(e)	(f)	(g)
	Measure Name	kWh	NTG	Gas MMBtu	Oil MMBtu	Propane MMBtu	Water Savings (gal)
1	Smart Strip	105	0.84	-	-	-	-
2	Room AC	17	0.48	-	-	-	-
3	Energy Star Dryer	160	0.52	-	-	-	-
4	Most Efficient Dryer	213	0.75	-	-	-	-
5	Most Efficient Clothes Washer	49	0.75	0.2	0.2	0.2	1,649
	Most Efficient Refrigerator	57	0.75	-	-	-	-
7	Low-Flow Showerhead w/TSV	289	0.96	1.1	1.2	1.2	2,201

8	Variable Speed Pool Pump	625	0.78	-	-	-	-
9	Triple Pane Windows (Electric Resistance)	139	0.96	-	-	-	-
10	Triple Pane Window (Heat Pump)	49	0.96	-	-	-	-
11	Triple Pane Windows (Fossil Fuel Heating)	14	0.96	5.68	0.57	0.57	-

Programs to which the Results of the Study Apply:
The result of this study is application to the Residentials Programs (Residential Consumers Product and Residential HVAC)

Evaluation Recommendations included in the Study:
The study recommends updating both the NTG ratios and gross energy savings estimates for the evaluated residential products to reflect more recent data.

Explain Whether or Not Rhode Island Energy (RIE) Decided to Adopt Recommendations from the Study:
Rhode Island Energy has adopted the study's results for all evaluated measures except for the Dehumidifier and Room Air Cleaner, as these products are no longer included in the Residential program offerings.

Savings Impact: The recommendations could improve accuracy and slightly decrease overall savings

RI-24-RX-Market Research - Moderate Income Study: Weatherization Motivations

Type of Study: Market Research
Conducted by: Resource Innovations (Cadeo) and Illume
Date Evaluation Conducted: January 2025

Evaluation Objective and High-Level Findings:
The primary objective of this study was to understand the motivations, barriers, and willingness to pay for weatherization among Rhode Island Energy's moderate-income customers (60–80% of State Median Income). The study aimed to inform future program design by evaluating customer preferences, income verification comfort levels, and awareness of weatherization benefits. The research found that 70% of moderate-income customers would be willing to pay up to $300 out-of-pocket for weatherization services, making this the optimal price point for maximizing participation

Programs to which the Results of the Study Apply:
The results of this study are applicable to the moderate-income customers in Residential programs.

Evaluation Recommendations included in the Study:

The study recommends setting out-of-pocket costs at or below $300 for weatherization measures and expand eligibility criteria to include customers up to 110% of State Median Income.

Explain Whether or Not Rhode Island Energy (RIE) Decided to Adopt Recommendations from the Study:
Rhode Island Energy will consider applying the recommendations from the study when and if it develops a moderate income offering; this offering will not be part of the 2026 Annual Plan.

Savings Impact: If adopted, the recommendations could increase participation by making weatherization more accessible to moderate-income households.

RI-24-WW-MultiFamCustom - Multifamily Custom Programs Impact Evaluation

Type of Study: Impact Evaluation
Conducted by: Resource Innovation (Cadeo)
Date Evaluation Conducted: March 2025

Evaluation Objective and High-Level Findings:
The primary objective of this study was to assess the electric and natural gas energy savings attributable to Rhode Island Energy's 2022–2023 multifamily custom energy efficiency programs. These programs include five distinct pathways: Electric EnergyWise Multifamily (EWMF), Gas EWMF, Electric Income-Eligible Multifamily (IEMF), Gas IEMF, and Commercial & Industrial Multifamily (CIMF). The evaluation focused exclusively on custom, non-lighting measures. Verified realization rates were 100.1% for electric projects and 100.4% for natural gas projects, indicating that reported savings closely matched actual savings.

Table ~~5~~7. Electric Multifamily program impact savings in 2022 and 2023

	(a)	(b)	(c)
	Program Type and Delivery	**Evaluated Energy Savings (kWh)**	**Realization Rate**
1	Electric EnergyWise Multifamily	220,948	115.3%
2	Electric Income Eligible Multifamily	1,407,164	100.1%
3	**Total**	**1,628,112**	**101.9%**

Table ~~6~~8. Gas Multifamily program impact savings in 2022 and 2023

	(a)	(b)	(c)
	Program Type and Delivery	**Evaluated Energy Savings (Therms)**	**Realization Rate**
1	Gas EnergyWise Multifamily	7,092	100.0%

2	Gas Income Eligible Multifamily	166,804	101.3%
3	Gas Commercial and Industrial Multifamily	44,437	101.0%
4	**Total**	**218,332**	**100.4%**

Programs to which the Results of the Study Apply:
The results of this study are applicable to Multifamily Residential and Income Eligible programs.

Evaluation Recommendations included in the Study:
The study recommends applying adjusted realization rates, conducting cost-effectiveness, NTG research, and improving data entry and tracking practices for future evaluations.

Explain Whether or Not Rhode Island Energy (RIE) Decided to Adopt Recommendations from the Study:
Rhode Island Energy has adopted the adjusted realization rates and is looking into improvements to data entry and tracking practices for Multifamily Custom projects.

Savings Impact: The recommendations could improve reliability and slightly increase the reported savings and support more effective program planning and evaluation.

RI-24-RX-IncEligible: Income Eligible Single Family Impact Evaluation

Type of Study: Impact Evaluation
Evaluation Conducted by: Cadeo
Date Evaluation Conducted: January 2025

Evaluation Objective and High-Level Findings:

This impact evaluation updates the gross per-unit energy savings for all measures (refer to Table ES-2 in the study[10]) in Rhode Island Energy's Income Eligible Single Family (IESF) Program using data from 2021–2023. The study employed billing analysis, and TRM-based engineering algorithms. Key findings include a 25% decline in weatherization savings compared to the previous evaluation. Despite this, weatherization and heating system retrofits remain the dominant sources of energy savings.

Programs to which the Results of the Study Apply:
The results of this study are applicable to Income Eligible Residential programs.

[10] Table ES-2 can be found on page 7: https://eec.ri.gov/wp-content/uploads/2025/02/RI-IESF-Impact-Evaluation-Final-Report_FINAL_23JAN2025.pdf

Evaluation Recommendations included in the Study:
The study recommends updating gross per unit energy savings for measures, establishing reliable baseline HVAC efficiency value and standardize subcategories for weatherization measures.

Explain Whether or Not Rhode Island Energy (RIE) Decided to Adopt Recommendations from the Study:
Rhode Island Energy is adopting the gross per unit energy saving results, updating HVAC baseline value, and standardizing subcategories for weatherization measures.

Savings Impact: Income Eligible program savings has decreased with the adoption of gross per unit energy savings.

RI-24-CE-LightingPlusMarket - **LightingPLUS Market Characterization. A joint Program Administrator Study**

Type of Study: Market Research
Evaluation Conducted by: DNV
Date Evaluation Conducted: December 2024

Evaluation Objective and High-Level Findings:
The LightingPLUS study aimed to assess the remaining energy savings potential in the commercial and industrial lighting market and evaluate six emerging "NextGen" lighting technologies. It found that LED adoption has reached the late majority stage, with LEDs comprising about 60% of linear fixtures and 75% of national sales. Remaining legacy stock is concentrated in smaller buildings and underserved communities. While traditional retrofit opportunities are declining, the study identified viable NextGen options such as high-efficacy LEDs and advanced lighting controls. These offer meaningful savings but often at higher costs and with more complex delivery requirements.

Programs to which the Results of the Study Apply:
The results of this study are applicable to C&I programs.

Evaluation Recommendations included in the Study:
The study recommends program administrators to shift their focus from traditional low-cost LED retrofits to higher efficacy products and advanced lighting controls. It also advises prioritizing underserved markets. The study also provided a market model for the remaining lighting opportunities in Rhode Island as well as a next generation savings model.

Explain Whether or Not Rhode Island Energy (RIE) Decided to Adopt Recommendations from the Study:
Rhode Island Energy has shared the findings from the study with its program strategy and implementation teams~~; final action relating~~. Rhode Island Energy plans to ~~adoption of the study's recommendations is pending~~investigate low-cost LED retrofits to higher efficacy products and ~~will be related~~advanced lighting controls in ~~the final draft of the~~ 2026 ~~Annual Plan.~~. Rhode Island Energy continues to prioritize serving underserved markets through the Main Streets Initiative, W/MBE outreach, and SEMP programs.

Savings Impact: If adopted, the recommendations could increase energy savings for lighting measures.

RI-24-CX-CINCProcess: C&I New Construction Program Process Evaluation

Type of Study: Process Evaluation
Evaluation Conducted by: Resource Innovation (Cadeo) and NMR Group
Date Evaluation Conducted: January 2025

Evaluation Objective and High-Level Findings:

This study evaluated Rhode Island Energy's Commercial & Industrial (C&I) New Construction Program to assess its design, operations, and customer experience. Key findings show that participants were generally satisfied with project outcomes and communication but found the process complex and burdensome. Early engagement with the program led to deeper energy savings. The study cited administrative challenges and limited understanding of the program as barriers.

Programs to which the Results of the Study Apply:
The results of this study are applicable to C&I New Construction programs.

Evaluation Recommendations included in the Study:
The study recommends increasing program awareness, simplifying processes, enhancing support for design teams, revising incentive structures, and improving internal coordination and documentation to boost participation and energy savings.

Explain Whether or Not Rhode Island Energy (RIE) Decided to Adopt Recommendations from the Study:
Rhode Island Energy has shared the findings from the study with its program strategy and implementation teams~~; final action relating to adoption~~. Many of the ~~study's~~ recommendations ~~is pending and will be related~~outlined in the ~~final draft of~~ study are already being implemented, and the ~~2026 Annual Plan.~~teams will continue to enhance the program by increasing awareness, streamlining processes, and strengthening internal coordination and documentation.
Savings Impact: If adopted, the recommendations could capture missed project opportunities which could increase total program savings.

RI-25-RX-NonResISP - Rhode Island Non-Residential New Construction Industry Standard Practice Study

Type of Study: Industry Standard Practice (ISP) Study
Evaluation Conducted by: DNV
Date Evaluation Conducted: March 2025

Evaluation Objective and High-Level Findings:

This study aimed to assess standard building practices and energy code compliance for selected measures in buildings permitted under IECC 2015. The study found that standard practice in Rhode Island exceeds code requirements for several key measures, including interior and exterior lighting power density (LPD), above-grade wall insulation, hot water boilers, air-cooled air conditioning, and heat pump heating. These findings support updates to baseline assumptions for program planning and evaluation. The study also developed updated ISP adjustment factors for application relative to IECC 2024.

Table ~~7~~9. Recommended ISP Code adjustment factors to IECC 2024 Code

	(a)	(b)	(c)
	Equipment type	**Recommended Code adjustment factor**	**Notes**
1	Above-grade wall insulation	1.14	Fourteen percent better than Code.
2	Interior Lighting	0.42	Fifty-eight percent better than Code.
3	Exterior Lighting	0.27	Seventy-three percent better than Code.
4	Hot water boilers	1.20	Twenty percent better than Code. Observed boilers were all condensing, which appears to be standard practice in NC.
5	Heat pumps- heating	1.03	Three percent better than Code. Includes all heat pumps (air-source heat pumps, VRF heat pumps) except for packaged terminal heat pumps
4	Air conditioning	1.05	Five percent better than Code. Includes multiple sized systems.

Programs to which the Results of the Study Apply:
The results of this study are applicable to Commercial programs.

Evaluation Recommendations included in the Study:
The study recommends adopting new ISP adjustment factors for use in savings calculations and program planning under IECC 2024. It also advises targeted training, improved data collection, and further research into envelope and control system practices.

Explain Whether or Not Rhode Island Energy (RIE) Decided to Adopt Recommendations from the Study:
Rhode Island Energy is adopting the adjusted ISP factors.

Savings Impact: The savings decrease for the measures impacted by the new ISP adjusted factor.

RI-24-CX-CustProcessEval- **Large C&I Retrofit Program (Custom Pathway) Process Evaluation**

Type of Study: Process Evaluation
Evaluation Conducted by: Cadeo
Date Evaluation Conducted: May 2025

Evaluation Objective and High-Level Findings:

The evaluation aimed to assess program performance, identify improvement opportunities, and support future program planning. Findings confirm that the Custom Pathway is well-regarded and delivers meaningful financial and operational benefits. Key strengths include strong customer engagement, effective use of scoping studies, and positive perceptions of financial incentives. Opportunities remain to improve program tracking and support deeper energy savings.

Programs to which the Results of the Study Apply:
The results of this study are applicable to C&I Retrofit Custom projects.

Evaluation Recommendations included in the Study:
Recommendations include ~~enhancing customer engagement, maintaining strong financial incentives, simplifying administrative processes, and~~ improving ~~program tracking systems~~categorization of building types, making non-residential webpages easier to find on the RI Energy website, and consider utilizing alternatives to on-site post-installation verification methods.
Explain Whether or Not Rhode Island Energy (RIE) Decided to Adopt Recommendations from the Study:
~~Rhode Island Energy has shared the findings from the study with its program strategy and implementation teams; final action relating to adoption of the study's recommendations is pending and will be related in the final draft of the 2026 Annual Plan.~~
For improving categorization of building types, Rhode Island Energy is reviewing the project data used to develop this recommendation and identifying criteria and guidelines to assist vendors and staff to characterize buildings more consistently. Regarding the webpage, Rhode Island Energy is discussing the findings with the web team to determine what, if anything, can be done. Lastly, Rhode Island Energy will review and summarize the post inspection requirements and determine whether they can reduced in a manner that continues to manage risk.

Savings Impact: There is no savings impact from this study.

RI-24-CG-CustGasPY23 - Impact Evaluation of Custom Gas Installations

Type of Study: Impact
Evaluation Conducted by: DNV
Date Evaluation Conducted: September 2025

Evaluation Objective and High-Level Findings:

The objective of this impact evaluation was to provide verification or re-estimation of energy (therms) savings for a sample of custom gas projects through site-specific inspections, end-use monitoring, and analysis. The site-specific results were aggregated to determine realization rates for Rhode Island Energy's custom gas installations. As a three-year rolling scheme is used to determine custom realization rates, the overall realization rate from this study combines results from PY2021, PY2022, and PY2023.

Table 10. Custom Gas Non-Steam Trap Results

	(a)	(b)	(c)	(d)	(e)
	Parameter	**PY2021**	**PY2022**	**PY2023**	**PYs 2021+2022+2023**
1	Tracking savings (therms)	752,277	1,056,259	419,065	2,227,601
2	Non-operational sample size	4	5	7	16
3	Realization Rate (RR)	87.6%	103.3%	40.2%	85.8%
4	Relative precision at 80% CI (%)	±21.9%	±14.0%	±52.7%	±14.6%

Programs to which the Results of the Study Apply:
The results of the study are applicable to the custom gas measures in the C&I Programs.

Evaluation Recommendations included in the Study:
The study recommends adopting the combined realization rate of 85.8% for non-steam trap projects.

Explain Whether or Not Rhode Island Energy (RI Energy) Decided to Adopt Recommendations from the Study:
RI Energy is adopting the combined result of 85.8% realization rate for custom gas and a 100% realization rate for steam trap projects.

Savings Impact:
The claimable savings for Large C&I custom gas projects will decrease as the realization rate decreased from the previous year.

RI-24-CE-CustElecPY23 - Impact Evaluation of Custom Electric Installations

Type of Study: Impact
Evaluation Conducted by: DNV
Date Evaluation Conducted: September 2025

Evaluation Objective and High-Level Findings:

The objective of this impact evaluation was to provide verification or re-estimation of energy (kWh) savings for a sample of custom electric projects through site-specific inspections, end-use monitoring, and analysis. The site-specific results were aggregated to determine realization rates for Rhode Island Energy's custom electric installations for non-lighting. As a three-year rolling scheme is used to determine custom realization rates, the overall realization rate from this study combines results from PY2021, PY2022, and PY2023.

Table 11. Custom Electric Installation Results

	(a)	(b)	(c)	(d)	(e)
	Parameter	**PY2021**	**PY2022**	**PY2023**	**PYs 2021+2022+2023**
1	Tracking savings (kWh)	26,073,183	13,916,893	6,091,338	46,081,414
2	Non-operational sample size	10	10	10	30
3	Realization Rate (RR)	88.37%	78.30%	89.6%	85.5%
4	Relative precision at 80% CI (%)	±7.1%	±14.4%	±9.7%	±5.8%

Programs to which the Results of the Study Apply:
The results of the study are applicable to the custom electric measures in the C&I Programs.

Evaluation Recommendations included in the Study:
The study recommends adopting the combined realization rate of 85.5% for custom electric projects.

Explain Whether or Not Rhode Island Energy (RI Energy) Decided to Adopt Recommendations from the Study:
RI Energy is adopting the combined result of 85.5% realization rate for custom electric projects and will consider adopting the other specific recommendations from the study.

Savings Impact:
The claimable savings for Large C&I custom electric projects will increase as the realization rate increased from the previous year.

5.2 Massachusetts Study Summaries

~~We are currently reviewing recent studies in Massachusetts for potential adoption.~~ **Study Title:** Massachusetts and Connecticut 2024 Heat Pump Study (Heat Pump Study)/ Massachusetts and Connecticut 2024 Heat Pump Study Review and Application to Rhode Island (Heat Pump Review and Applicability Memo)

Type of Study: Impact Evaluation

Evaluation Conducted by: Guidehouse

Date Evaluation Conducted: August 2024/September 2025

Evaluation Objective and High-Level Findings:

The primary objective of this study was to quantify and understand the usage, peak demand, and performance of residential heat pumps installed through MA and CT's energy efficiency programs. The study determined gross measure impacts for heat pump installations for full or partial displacement of pre-existing fuel-fired or electric resistance heating equipment; the study also made recommendations related to future program design.

Guidehouse (separate from those who completed the Heat Pump Study) on behalf of Rhode Island Energy reviewed the Heat Pump Study and adapted the results for Rhode Island adoption in the Heat Pump Review and Applicability Memo. Baseline adjustments were applied to the various heat pump measures to align with the appropriate baseline used in Rhode Island. Additionally, the savings were assumed to be an average of partial displacement and full displacement.

The following adjustments were made to the baselines:

For all heat pump measures, the heating baseline was normalized to include existing conditions only rather than including the alternative action of what the customer would have installed if they did not install a heat pump.

For the electric resistance to MSHP measures, the heating baseline was adjusted to only consider electric resistance heat only, whereas the Heat Pump Study found that homes with electric resistance heat may also heat with delivered fuels and natural gas.

For the mini-split heat pump measure, the heating and cooling baselines were normalized to reflect a baseline standard efficiency mini-split heat pump.

Table 12 shows the results with the baseline adjustments for the kWh/ton savings from the Heat Pump Review and Applicability Memo and the demand savings from the Heat Pump Study.

Table 12. Heat Pump Study and Heat Pump Memo Results

	(a)	(b)	(c)	(d)
	Program	Measure Name	Adjusted Savings (kWh/ton)*	Demand Savings (kW/ton)**
1	Residential HVAC	Central HP	1.443	-0.69
2	EnergyWise Single Family	Electric Resistance to MSHP	2.529	0.49
3	Income Eligible Single Family	Electric Resistance to MSHP	2.529	0.49
4	Residential HVAC	Electric Resistance to MSHP	2.529	0.49
5	Residential HVAC	Mini Split HP	911	0.17

*Results from the Heat Pump Review and Applicability Memo.

**Results from the Heat Pump Study.

Programs to which the Results of the Study Apply:

The results of this study are applicable to the residential single family program heat pump measures.

Evaluation Recommendations included in the Study:

The study recommends adopting the deemed savings estimates including the kWh/ton and kW/ton savings for heat pump measures. The Heat Pump Review and Applicability Memo recommends adopting the adjusted kWh/ton savings.

Explain Whether or Not Rhode Island Energy (RIE) Decided to Adopt Recommendations from the Study:

RI Energy is adopting the adjusted kWh/ton savings from the Heat Pump Review and Applicability Memo and the kW/ton savings from the Heat Pump Study. With this recommendation, Rhode Island Energy is adjusting the planning assumptions for these measures to be planned per tonnage rather than per home. **Savings**

Savings Impact:

The adoption of heat pump savings for the residential programs, including Residential HVAC, Energy Wise Single Family, and Income Eligible Single Family, will result in a decrease in gross kWh savings for electric resistance to MSHP measures and an increase in the gross kWh savings central heat pump and mini-split heat pump measures.

Study Title: MA23X14-B-RHPINV – Residential Heat Pump Invoice Cost Study

Type of Study: Cost Analysis

Evaluation Conducted by: NMR Group

Date Evaluation Conducted: October 2024

Evaluation Objective and High-Level Findings:

The primary objective of this study was to develop a repeatable methodology and baseline metrics for tracking trends in residential heat pump project costs over time, supporting the Massachusetts Program Administrators (PAs) and Energy Efficiency Advisory Council (EEAC). The study analyzed invoice data for centrally ducted air-source heat pumps (ASHP), ground-source heat pumps (GSHP), heat pump water heaters (HPWH), and mini-split heat pumps (MSHP) installed through the Mass Save program and MassCEC.

Programs to which the Results of the Study Apply:

The results of this study are applicable to the residential programs with heat pump measures.

Evaluation Recommendations included in the Study:

The study recommends updating costs for the evaluated heat pump measures.

Explain Whether or Not Rhode Island Energy (RIE) Decided to Adopt Recommendations from the Study:

Rhode Island Energy is adopting the recommended cost adjustments for applicable heat pump measures.

Savings Impact:

The adoption of heat pump cost for the residential programs will not affect savings.

Study Title: MA22R51-B-HPMS-HP-Incremental-Cost-Research-Memo: Massachusetts Heat Pump

Type of Study: Cost Analysis

Evaluation Conducted by: Guidehouse

Date Evaluation Conducted: August 2024

Evaluation Objective and High-Level Findings:

The primary objective of this study was to estimate the incremental costs of installing air and ground source heat pumps in Massachusetts, supporting Program Administrators (PAs) in their Three-Year Planning efforts. The study analyzed costs for market rate and income-eligible program participants, leveraging recent NMR research (2023–2024), MassCEC database invoice analysis, and webscraping of retailer data.

Programs to which the Results of the Study Apply:

The results of this study are applicable to the residential programs with heat pump measures.

Evaluation Recommendations included in the Study:

The study recommends updating costs for the evaluated heat pump measures.

Explain Whether or Not Rhode Island Energy (RIE) Decided to Adopt Recommendations from the Study:

Rhode Island Energy is adopting the recommended cost adjustments for applicable heat pump measures.

Savings Impact:

The adoption of heat pump cost for the residential programs will not affect savings.