

2027-29 Evaluation, Measurement, and Verification Planning Framework and Plan

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.

This section provides the framework Rhode Island Energy intends to use for EM&V planning for the 2027-29 term. Because it covers the three-year term, it is different from prior annual evaluation plans. It begins with guiding principles Rhode Island has adopted as the foundation of its Evaluation Plan. It provides themes and priorities Rhode Island Energy has identified for the coming term, consistent with those principles. Together, the principles and themes provide the foundation for Rhode Island Energy's framework for 2027-29. This plan includes a preliminary list of studies or study area needs, identified by Rhode Island Energy, which meet its criteria. This list of studies is not complete or final; it is intended to illustrate current thinking for the evaluation plan. The document concludes with details on historic studies that Rhode Island Energy analyzed to determine its needs as well as summaries of evaluation studies completed since the last Plan filing.¹

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 evaluations may include (but are 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. Other quantitative parameters, which are inputs into savings or benefits calculations, such as net-to-gross, non-energy impacts, and load shapes, are also included in the impact evaluation category, and will be periodically refreshed.
- **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.

¹ The summaries will be included in the second draft of the Plan.

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, study workplan development, and review of interim work products, study results, and study reports.

Rhode Island Energy intends for this EM&V framework and the studies that are conducted to provide confidence among all stakeholders (including ratepayers, regulators, and others) that programs are effective and EM&V activities are independent and objective.

2. GUIDING PRINCIPLES

In developing ideas for the 2027-29 Evaluation Plan, Rhode Island Energy has considered and uses the following guiding principles.

- **Rhode Island Energy will create an evaluation plan that identifies general areas of focus for the three-year period with detailed study recommendations for the first year.** Rhode Island Energy believes this framework is appropriate in that it is easier to identify near-term needs, and more difficult to predict specific evaluation needs two or three years in advance. Adhering to the general areas of focus, combined with EERMC Evaluation oversight, will give confidence about Rhode Island Energy's ability to choose studies that will provide the most value over the three-year period. This is the model that is used in Massachusetts.
- **As it identifies and develops study ideas, Rhode Island Energy will prioritize them and develop explanations for those priorities.** Prioritization is necessary because Rhode Island Energy does not expect to be able to fund all worthy evaluation studies; therefore, this will facilitate selection and execution of the highest value studies.
- **Rhode Island Energy is open to the use and application of innovative evaluation techniques or tools, and leveraging them to the greatest extent feasible, particularly in the interest of leveraging the most effective use of the evaluation budget, but it will not plan a study simply for the sake of using these techniques.** Innovative methods could include real-time (embedded) evaluation, artificial intelligence for automation and validation of study components, virtual tools, or use of advanced metering functionality data, to give a few examples.
- **Identification of studies independent of evaluation contractors.** At the time of the development of this Plan, Rhode Island Energy expects to be in active negotiation with one or more firm(s) to be its evaluation contractor(s) for the 2027-29 period. It expects that any firm(s) it selects will be able to perform the specified studies; in other words, capabilities of the contractors will not bear on the selection of studies to be planned.

3. EVALUATION AREAS OF FOCUS FOR THE THREE-YEAR PLAN

Rhode Island Energy notes several dynamics that will shape evaluation activities in 2027-2029. Legislative changes, affordability concerns, decarbonization objectives, workforce constraints, maturation of markets, and budgetary decisions will shape the policy direction in unknown ways over the three-year period. Having a three-year evaluation framework should give Rhode Island Energy the ability to respond as needed to the policy dynamics in the selection of particular studies to commission. In that context, Rhode Island Energy expects the following areas of focus related to the various study categories to also shape the selection of studies to be performed over the three-year period:

- Impact evaluation studies will be the primary focus of evaluation efforts. Since impact evaluations review the savings performance of installed projects relative to planning, periodic updates are necessary.
 - The cadence of savings impact evaluations will be influenced by the size (magnitude of savings) of the program, the recency of the last evaluation, the observed variation of realization rates over recent studies, ISO-NE evaluation requirements, and the funding for evaluation in any given year.
 - Other quantitative parameters are frequently reviewed and will be periodically refreshed.
- Process evaluations are typically conducted on an as needed basis rather than following a specific cadence. They may be of particular value for new or evolving programs; process evaluations may provide insights to help improve underperforming programs.
- Market or exploratory research will be conducted as needed and will respond to strategy or implementation requests. Evaluation of market transformation initiatives will be supported, if an MTI emerges, and Rhode Island Energy will continue to leverage industry standard practice research. Pilot evaluations will be conducted, as necessary.
- Other evaluation-related activities are also supported by the evaluation budget:
 - An avoided cost refresh is expected to be largely conducted in 2029.
 - Review and coordination of evaluation studies with other jurisdictions. Annually, Rhode Island Energy will scan completed studies from Massachusetts, identify ones that might be applicable, and develop recommendations for adoption to discuss with the EERMC's Consulting Team. Where possible, Rhode Island Energy will seek to participate and co-fund relevant studies with other jurisdictions.
 - Documentation of compliance of EM&V activities with ISO-New England's Forward Capacity Market requirements.
 - Ongoing internal TRM review/refresh activities
 - Analysis of historic participation, programmatic, or market segment characteristics to support program design and targeting.

4. EVALUATION PLANNING AND EXECUTION OVER THE THREE-YEAR TERM

Under annual energy efficiency plans, proposed studies for the plan year were included in the Plan filing and targeted for completion by mid-August, if possible, to inform the development of the next Annual Plan. Similar to prior years' annual plans, Rhode Island Energy has identified studies that it plans to commission at the beginning of 2027. Unlike in prior years, a three-year plan allows flexibility in scheduling evaluations as well as in applying their results. As a result, we have identified potential areas

of study for 2028 and 2029 but have not identified specific evaluations to conduct. As studies are completed, Rhode Island Energy will work with its evaluation contractors and the EERMC Consulting Team to identify new studies to be launched, subject to the criteria and constraints described previously.

Rhode Island Energy anticipates using the following procedures to apply study results:

- Final study reports will be posted on the EERMC website.
- Lessons learned will be digested and shared with implementation personnel during scheduled meetings as soon as possible. In this way, implementation personnel will have the ability to modify programs, if necessary, for the duration of the term. With a three-year term, the motivation to wait to apply results to the next Annual Plan is removed. This will provide a strong linkage between evaluation and planning and execution.
- Adjustments will be made to tracking systems record of savings for the following program year. This is consistent with current practice of making prospective changes to savings assumptions. These changes will be logged in a set of revisions to the Technical Reference Manual. However, annual illustrative targets will not be changed.
- End-of-term results will be reported using updated savings assumptions for both planned and actual savings, as detailed in the proposed revisions to the Least Cost Procurement Standards submitted in Docket 26-15-EE Section 3.4.E(b)(2): “When comparing planned performance to actual performance, the distribution company shall use the most up-to-date ... approved claimable savings estimates.”
- In addition, all studies completed before the next planning cycle will inform program design changes for the next three-year period.

5. LIST OF POTENTIAL EVALUATION STUDIES

Table 1 below provides a list of specific studies that are being considered for the upcoming three-year term, consistent with the identified themes. The first table contains a tentative list of 2027 evaluation studies for this first draft of the three-year plan. The second table contains a list of potential research areas that will be monitored during the three-year term and considered for studies in 2028 or 2029.

Table 1. Potential Evaluation Studies, 2027

2027 Studies	Rationale/Expected Use
<i>C&I Net-to-Gross Study</i>	Assess the effectiveness and net impact of C&I programs; last studied for PY 2022.
<i>C&I Prescriptive Gas Impact Evaluation</i>	Update C&I Gas Program impacts; scope and depth of study would depend on amount of savings.
<i>Impact Evaluation of C&I Custom Electric Installations</i>	Update realization rates for C&I custom projects; realization rates have demonstrated volatility over past recent studies.
<i>Impact Evaluation of C&I Custom Gas Installations</i>	Update realization rates for C&I custom projects; realization rates have demonstrated volatility over past recent studies.
<i>C&I Load Shapes Review & Update</i>	Update and consolidate sources for C&I savings load shapes where possible. Leverage studies from other jurisdictions, where available and applicable.

2027 Studies	Rationale/Expected Use
<i>EnergyWise Single Family Impact & Process Evaluation</i>	Assess the effectiveness and net impact of EnergyWise programs; last studied for PY 2019 with focused update for PY2021.
<i>Residential HVAC Impact Evaluation</i>	Update savings assumptions for Residential HVAC measures, excluding heat pumps for HVAC but potentially including heat pump water heaters; scope and depth of study would depend on amount of savings.
<i>Market Characterization & Research for the Multifamily & Income Eligible Markets</i>	Support program implementation efforts by conducting market scoping, database construction, potential and saturation analysis for multifamily and income-eligible segments to address recurring uncertainty around achievable savings.
<i>Implementation Benchmarking</i>	For heat pumps and other selected measures, understand what is working for other program administrators and how it can be applied to Rhode Island Energy's programs.
<i>Moderate Income Market Assessment</i>	Conduct a detailed assessment of the moderate-income population to support a moderate-income incentive and/or program offering. Include an assessment of rate assignment and investigate challenges with the delivery of efficiency programs and services to subsegments such as renters and immigrants.
<i>Residential Mechanical Systems Study - Revised Modeling with AMI Data</i>	Use AMI interval data to increase the accuracy of the model that predicts inefficient heating system customers.
<i>Equity Analysis and Outreach Evaluation</i>	Align equity-focused customer experience with equity goals through customer interviews, focus groups, and/or analysis; was planned for late 2026, but was deferred because of funding limitations.

C&I Net to Gross Study

Use customer and other market actor surveys and interviews to estimate free ridership and spillover values in order to calculate net-to-gross (NTG) factors for Rhode Island Energy's C&I Programs.

C&I Prescriptive Gas Impact Evaluation

This study will verify the savings achieved by prescriptive gas measures and update measure savings parameters and/or realization rates to ensure the accuracy of tracked savings.

Impact Evaluation of C&I Custom Electric Installations

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 2025 and 2026. This study will begin in summer 2027 and will continue into 2028. These results will be combined with the PY2024 analysis that will be completed in August of 2026.

Impact Evaluation of C&I Custom Gas Installations

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 Q2 and Q3 of 2025 and all of 2026. This study will begin in summer 2027 and will continue into 2028. These results will be combined with the PY2024/PY2025 Q1/Q2 analysis that will be completed in August of 2026.

Energy Wise Single-Family Impact & Process Evaluation

This study will evaluate the savings achieved by the electric and gas Energy Wise Single Family Programs to update measure savings parameters and/or realization rates. It will also evaluate the effectiveness of program implementation in order to recommend program improvements.

Residential HVAC Impact Evaluation

This study will update savings assumptions for Residential HVAC measures (excluding heat pumps); measures to be studied will be determined based on their contribution to program savings.

Market Characterization & Research for the Multifamily & Income Eligible Markets

This study will characterize the multifamily and income-eligible markets through primary and secondary research in order to assist the program in documenting achievable savings.

Implementation Benchmarking

This study will research best practices used by other program administrators for heat pumps and other selected measures for their applicability to Rhode Island Energy's programs.

Moderate Income Market Assessment

This study will conduct research to support the implementation of a moderate-income program, with an emphasis on hard-to-reach markets such as renters and immigrants.

C&I Load Shapes Review & Update

Research the availability of revised load shapes and their applicability to Rhode Island Energy's C&I Programs.

Residential Mechanical Systems Study - Revised Modeling with AMI Data

Update the model that predicts homes heated with inefficient electric heat using Advance Metering Infrastructure (AMI) interval data; interval data is expected to increase the accuracy of the model which currently uses monthly billing data.

Equity Analysis and Outreach Evaluation

Rhode Island Energy has established metrics centered on equity. As data on these metrics is collected and analyzed, Rhode Island Energy anticipates that it may be desirable to conduct customer and/or other market actor interviews or focus groups to facilitate an adjustment of strategies.

Table 2. Potential Evaluation Study Areas of Focus, 2028-29

Area	Rationale/Expected Use
<i>Residential New Construction Impact and Process</i>	Assess the effectiveness and net impact of Residential New Construction Programs; Last studied for homes built between 2019-2022.
<i>Residential Multi-Family Participation Study</i>	Assess drivers for participation and non-participation; last conducted in 2022.
<i>Market segment research, for MTI</i>	Establish a roadmap (baseline and progress) for market transformation initiatives (MTI), should one be launched during the term; could include research on applicability of other state/regional MTIs, such as NEEA extended motor initiative, to Rhode Island.
<i>Code Compliance Impact Evaluation</i>	Used to update savings related to Rhode Island Energy's code compliance training efforts; was deferred from 2026 due to data limitations and could be conducted after data becomes available.
<i>NEI Reviews</i>	Update assumptions used for non-energy impacts (NEI) based on a review of recent research from other states.
<i>C&I Lighting Impact</i>	Assess the effectiveness and net impacts of C&I lighting offerings after launch of modified program offerings.
<i>C&I-Specific Initiative Process Evaluation</i>	Assess the effectiveness of specific initiatives in the C&I Programs, such as the Grocer, Industrial, and/or Schools initiatives.
<i>Workforce Capacity Analysis</i>	Assess workforce and contractor capacity for equity and weatherization delivery, including trade-specific bottlenecks, if any, and implications for program performance.
<i>C&I Small Business Impact & Process</i>	Assess the effectiveness and net impact of C&I Small Business Electric and Gas Programs; last studied for PY 2016 and of increased importance as the program moves away from reliance on lighting measures.
<i>Residential Behavior Impact & Process Evaluation</i>	Assess the effectiveness and net impact of the Residential Behavior Program; last studied for PY 2016 and, while results have been stable, would be relevant for re-study after program pause in 2027.

5.1 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 2026 Program Plan and in the Technical Reference Manual. An at-a-glance summary in [Table 3](#) shows the studies by program where rows designate the Program and any relevant program area and column headers designate the type of study. The entry in the cell indicates the year in which the study was published (not the program year studied) and gives the cross reference to the more detailed [Table 3](#), which contains summaries of the relevant studies². These studies are available through the EERMC, the PUC, and Rhode Island Energy. Table 2 also highlights in blue the studies that were included in the 2026 evaluation plan.

This table demonstrates how Rhode Island Energy has effectively been deploying its evaluation budget to, for the most part, keep savings assumptions current and address other areas of need. It supports the identification of potential areas of study for 2027-29 included in Tables 1 and 2, above, to continue to keep savings assumptions up-to-date and address other programmatic areas of need.

² Note that Rhode Island Energy is considering renumbering the studies in both tables to facilitate easy updating as new studies are completed.

Table 3. Historic Evaluation Studies

	(a) Sector/Program	(b) Impact	(b) NEI	(b) Other Quantitative	(c) Market	(d) Process	(e) Policy	(f) For 2026 studies, year of prior study
1	Residential				2022 (35, 36)	2025*		
2	EnergyWise Multifamily			2018 (load shapes 69)		2020 (54)		
3	<i>Custom</i>	2025 (4)	2018 (70)	2021 (NTG, 52)				
4	<i>Prescriptive</i>	2025 (3)	2018 (70)		2025 (1)			
5	EnergyWise Single Family	2020 (44, 53)		2021 (HVAC NTG, 52)		2020 (53)		
6	<i>Weatherization</i>	2023 (24)						
7	Home Energy Reports	2020 (56)				2017 (73)		
8	Residential Consumer Products		2011 (80)	2023 (load shapes, 22)	2025			
9	<i>Appliance Recycling</i>	2026						2021 (43)
10	<i>Non-Recycling and Refrigeration</i>	2025 (2, 61)		2022 (NTG, 48)				
11	Residential HVAC		2011 (80)	2023 (load shapes, 22; 69) 2021 (NTG, 52)				
12	<i>Heat Pumps</i>	2025 (13, 14, 15)	2023 (21)		2024 (12)			
	<i>Saturation</i>				2026			2018 (68)
	<i>WiFi Thermostats</i>	2021 (51, 64)						
13	Residential New Construction	2023 (20, 49, 50)	2021 (47)					
14	<i>Code Compliance</i>	2017 (71)						
15	Income Eligible					2025*		
18	Income Eligible Multifamily		2021 (46)		2026	2020 (55)		
19	<i>Custom</i>	2025 (4)						
20	<i>Prescriptive</i>	2025 (3)						
21	Income Eligible Single Family	2025 (5)			2026			
22	Commercial & Industrial			2024 (NTG, 18)				
23	Large C&I New Construction		2016 (76)			2025 (6)		
24	<i>Code Compliance</i>	2017 (71)						
25	<i>Baseline/ ISP</i>	Many (7, 26, 28, 34, 42)						
26	Large C&I Retrofit		2012 (78)	2024 (NTG, 18)				
27	<i>Commissioning</i>					2025*		
28	Large C&I Custom		2012 (78)	2024 (NTG, 18)		2024		
29	<i>C&I Custom Electric</i>	2026				2025 (8)		2025 (10)
30	<i>C&I Custom Gas</i>	2026				2025 (8)		2025 (9)
31	<i>C&I Custom CDA</i>	2018 (66)						
	<i>Prescriptive Gas</i>	Many (33, 63, 72, 77)						

	(a) Sector/Program	(b) Impact	(b) NEI	(b) Other Quantitative	(c) Market	(d) Process	(e) Policy	(f) For 2026 studies, year of prior study
33	Large C&I Prescriptive		2012 (78)	2018 (load shapes, 67, 79)				
34	<i>C&I Lighting Controls</i>				2025			
35	<i>C&I Lighting</i>	2022 (37, 40, 65)			2024 (19)			
36	<i>C&I Non-Lighting</i>	2026						
37	<i>C&I Other</i>	2021 (38, 39, 74, 75)						
38	Small Business Direct Install			2024 (NTG, 18)		2023 (29)		
39	<i>Electric</i>	2020 (57)						
40	<i>Gas</i>	2019 (62)						
41	C&I Multifamily							
42	<i>Custom</i>	2025 (4)	2018 (70)					
43	<i>Prescriptive</i>	2025 (3)	2018 (70)		2025			
44	Cross Cutting/Other							
45	<i>Avoided Cost</i>	2026-27					2024 (17)	
48	<i>Economic Impacts</i>	2023						
49	<i>Measure Life</i>	2024 (11, 23, 31, 41, 58)						
50	<i>Non-Participant</i>				2022			
51	<i>Piggybacking</i>					2020 (60)		
56	<i>Workforce Analysis</i>				2023 (30)			
57	<i>Pilots</i>	2024 (16)						
	<i>TRM Review</i>	2022 (32, 45)						

Table 4. Completed Evaluation Studies Applicable in 2027-29

#	(a) Study	(b) Impact Descriptions	(c) Sector	(d) Year
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.	Res	2025
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	2025
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	2025
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	2025
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	2025
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	2025

#	(a) Study	(b) Impact Descriptions	(c) Sector	(d) Year
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	2025
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	2025
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	2025
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	2025
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	2024
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	2024
13	Guidehouse, Incremental Cost Research Memo- Massachusetts Heat Pump, August 2024	The study aimed to estimate the incremental cost of installing a heat pump.	Res	2024
14	Guidehouse, Massachusetts and Connecticut 2024 Heat Pump Study, August 2024/ 2025 Heat Pump Study Review and Application to Rhode Island Memo, September 2025	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.	Res	2025
15	NMR, Residential Heat Pump Invoice Cost Study	The study analyzed heat pump data to estimate the costs of various types of heat pump.	Res	2024
16	DNV, Rhode Island Swarm Thermostats – Technology Evaluation Pilot, March 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.	C&I	2024
17	Synapse Energy Economics, Avoided Energy Supply Components in New England 2024 Report, February 2024	The study developed new estimates of avoided costs associated with energy efficiency measures for program administrators throughout New England States.	Cross-Cutting	2024
18	Tetra Tech, 2022 Commercial and Industrial Programs Free-Ridership and Spillover Study, January 2024	The study updated free-ridership and spillover rates for the C&I program.	C&I	2024
19	DNV, LightingPLUS Market Characterization. A joint Program Administrator Study, December 2024	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	2024

#	(a) Study	(b) Impact Descriptions	(c) Sector	(d) Year
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	2023
21	NMR Group, Residential Heat Pump NEIs Study, July 2023 (Leveraged from MA)	The study updated NEIs for heat pump related measures.	Res	2023
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	2023
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	2023
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	2023
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	2023
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	2023
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	2023
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	2023
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	2022
32	Cadeo, Non-Residential Technical Reference Manual Review, October 2022 (Leveraged from MA)	The study performed a comprehensive review of the non-residential prescriptive measures in the MA TRM and recommended updates for key parameters.	C&I	2022

#	(a) Study	(b) Impact Descriptions	(c) Sector	(d) Year
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	2022
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	2022
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	2022
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	2022
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.	C&I	2021
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	2021
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	2021
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	2021
41	DNV, Ground Source Heat Pump eTRM Measure Review, March 2021 (Leveraged study from MA)	This study recommended that GSHPs be broken out from ASHPs into their own category offering to allow the program to attribute savings, baselines, and lifetimes in a more defensible way. It also recommended the GSHP lifetime be updated to 25 years. Used as a source for GSHP measure life.	C&I	2021
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	2021
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	2021
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	2021
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	2021
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	Res	2021

#	(a) Study	(b) Impact Descriptions	(c) Sector	(d) Year
		buildings. A total of 4 health and safety NEIs were monetized as part of this study.		
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.	Res	2021
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	2021
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	2021
50	NMR, Renovations and Additions 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 Renovations and Additions Residential New Construction offering. Rhode Island adopted the results from this study to update 2022 planning assumptions.	Res	2021
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	2021
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. This study is being used for the NTG of custom multifamily measures, HVAC measures in EWSF, and residential HVAC measures	Res	2021
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	2020
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	2020
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	2020
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	2020
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	2020
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	2020
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	2020

#	(a) Study	(b) Impact Descriptions	(c) Sector	(d) Year
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. This is being used for all smart strip measure savings and realization rates.	Res	2019
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	2019
63	Energy & Resource Solutions, Two-Tier Steam Trap Savings Study, April 2018.	This MA study recommends a two-tier approach for prescriptive steam traps.	C&I	2018
64	Navigant, Wi-Fi Thermostat Impact Evaluation Secondary Research Study. September 2018. (Leveraged study from MA)	This study recommended annual savings values for Wi-Fi thermostats differentiated by heating source. Rhode Island adopted these results to update savings assumptions for Wi-Fi thermostats in HVAC and residential retrofit programs. This study is being used for residential HVAC thermostats.	Res	2018
65	DNV GL, Impact Evaluation of PY 2015 Rhode Island Commercial and Industrial Upstream Lighting Initiative. September 2018.	The study updated impact factors for the Upstream Lighting initiative. This study is being used as the realization rates and gas savings factor source for midstream lighting. The RI study leveraged the MA study of the same initiative.	C&I	2018
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	2018
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	2018
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	2018
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. This study is being used as the source for multifamily coincidence factors and some residential HVAC coincidence factors	Res	2018
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	2018
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	C&I	2017

#	(a) Study	(b) Impact Descriptions	(c) Sector	(d) Year
72	DNV-GL, MA45 Prescriptive Programmable Thermostats, March 2017	This study updated programmable thermostat deemed gas savings for C&I programs.	C&I	2017
73	Illume, Rhode Island Home Energy Report Program Impact and Process Evaluation, 2017	The study found that the program is working effectively. The study recommended continued segmentation and message testing to further enhance program impact.	Res	2017
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	2016
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	2016
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	2016
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	2014
78	TetraTech, Final Report – Commercial and Industrial Non-Energy Impacts Study, (prepared for Massachusetts Program Administrators), June 29, 2012	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	2012
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. This source is being used as the coincidence factor source for prescriptive commercial heat pump and ac measures	C&I	2011
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	2011

6. STUDY SUMMARIES

These will be included in the final draft