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Process Evaluation

Large C&I Retrofit Program (Custom Pathway)
Rhode Island Energy

Developed For

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Executive Summary

RI Energy's retrofit program offers financial incentives to encourage large C&I customers to replace existing equipment with energy-efficient equipment. The retrofit program includes three distinct pathways for customers: Prescriptive, Upstream, and Custom. This evaluation study focused solely on the Retrofit Custom Pathway, which was intended to support projects that included energy-efficient upgrades beyond those included in the Prescriptive and Upstream pathways, and that generally required individualized energy savings calculations.

Why Evaluation?

RI Energy uses evaluation to retrospectively assess the performance of its programs and estimate savings for future program years. As part of its 2024 Annual Plan, RI Energy identified Retrofit Custom Pathway program that would benefit from evaluation support. RI Energy requested that Cadeo conduct a process evaluation to assess program activities and performance and to identify opportunities for program enhancement. Overall, RI Energy's goal was to develop recommendations for custom measure process improvements that could lead to greater participation and energy savings.

Key Process Findings

As part of the evaluation, Cadeo conducted a comprehensive analysis of program tracking data to summarize program activity, surveyed recent program participants, interviewed program staff and project implementation partners, and reviewed comparable programs in other states.

Customer Engagement

Participants consistently reported high satisfaction, especially with personal interactions. RI Energy staff played a central role in project initiation and support, with 90% of survey respondents rating their experience at least 4 out of 5. Direct engagement—through inspections, on-site visits, and project coordination—was a key factor in customer satisfaction and program awareness.

Financial Incentives

The availability and adequacy of financial incentives were pivotal in participants' decisions to pursue energy-efficiency upgrades. While some participants desired more funding, 81% were satisfied with current incentive levels. However, budget constraints remain the primary barrier to deeper or more comprehensive project implementation.

Scoping Studies

Scoping studies proved highly effective: 75% of participants who received one implemented all recommended measures. Participants also found the application and documentation requirements manageable, with satisfaction ratings above 4.0. These findings highlight the value of structured guidance and streamlined administrative processes in achieving energy savings.

Conclusions

The evaluation validates RI Energy's Retrofit Custom Pathway program as a well-regarded program that delivers tangible financial and operational benefits to participants. Continued focus on improving program tracking data, streamlining program access, and supporting deeper energy-saving projects could further enhance program performance and customer satisfaction.

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Executive Summary

This report details the findings of Cadeo's process evaluation of Rhode Island (RI) Energy's Large Commercial and Industrial (C&I) Retrofit Custom Pathway program (the program). The process evaluation's scope included program participants that completed their projects between 2021-2023.[1]

Key Findings

Overall program satisfaction among participants runs high. Among participants responding to the survey, 90% rated their satisfaction at least 4 out of 5. Project implementation partners also seemed satisfied with the program offering.

Participants report high satisfaction levels overall with each element of their program experiences. Respondents rated all 17 program experience elements with an average satisfaction score of at least 4.1 out of 5.

The highest rated components are post-installation inspections by RI Energy staff (4.6) and on-site visits of RI Energy staff and vendors (4.5). This finding suggests that, while customers were generally satisfied with all program elements, they were especially satisfied with direct engagement they had with RI Energy staff and vendors.

Direct interaction with RI Energy staff serves as a key driver of program participation. Participants reported that RI Energy staff commonly served as the source of project initiation. In other words, projects were less likely to happen if not for proactive RI Energy staff. This program dynamic has been adopted successfully by similar programs implemented by other utilities and agencies.

Project timelines and rebate processing times are reasonable. Although a few participants suggested shortening project timelines and expediting rebate processing, 77% of participants who responded to the survey rated their satisfaction with project timelines at least 4 out of 5.

Program administration and documentation requirements are satisfactory and not overly burdensome. Participants did not identify participation process aspects that they considered onerous, unnecessary, or redundant. On average, participants reported satisfaction scores of 4.3 and 4.2 out of 5 for the application process and documentation requirements, respectively. Survey results did not indicate whether administrative requirements were perceived differently between repeat and new participants. Despite general satisfaction with program processes, 21% of participants said "yes" in response to a question in the survey about whether there were program aspects they would change said "yes." Responses were heterogeneous, suggesting

[1] RI Energy completed a concurrent but separate process evaluation of the C&I New Construction program; therefore, new construction projects were not included in the scope of this evaluation.

program pain points were unique to individual experiences and not universal for all program participants.

Financial assistance is an important factor in decisions to make energy-efficiency investments. Measure cost was the most common criteria participants considered when making energy-efficiency investments, and lack of internal budgeting posed the most common constraint they face. An opportunity might exist for alternative financing models, such as enhanced incentives for measure bundles.

Incentive amounts are adequate and beneficial to program participation. Some participants reported that more incentive money would be better, but 81% of surveyed participants rated their satisfaction with incentive amounts at least 4 out of 5. Additionally, about one-third of respondents reported the availability of financial incentives as a consideration when making energy-efficiency investments.

Although monetary benefits still serve as the primary project driver, organizations emphasized the importance of RI Energy in helping them achieve their sustainability goals. Participants reported undertaking their projects and engaging with RI Energy primarily to save money on energy, equipment, and maintenance costs. However, 10% of respondents reported that the program helped them advance their organization's long-term energy management and sustainability goals. Relatedly, 13% of respondents cited this as their reason for engaging RI Energy in their project, more so than obtaining an incentive (9%).

RI Energy completed significant outreach to and is actively engaged with its C&I customer base. During discussions, program staff indicated program participants most often were repeat participants. Program staff actively engaged with their customers and often supported project development. About a year ago, RI Energy completed a comprehensive outreach effort to nonparticipating C&I customers. For new participants, program staff met with the customer, set up a scoping study, and discussed the study results with the customer. Upon customer interest, RI Energy staff facilitated investigation into measures of interest, coordinated project implementation partners, and helped with incentive paperwork. This finding corroborates participant survey data where RI Energy staff was the most commonly selected mode for the way participants became aware of the program.

Indirect marketing and word of mouth are the most common vectors for customer awareness of the program. Specifically, RI Energy staff served as by far the most selected option for how participants learned about the program. Contractors and industry peers were tied for the second most common option. The survey findings show direct marketing efforts were not primary vectors for program awareness and participation. Direct-to-customer marketing options (e.g., mailings, emails, website, social media, online ads, and trade shows/conferences) had lower response rates from surveyed participants than indirect marketing. However, to the extent that direct marketing efforts reached contractors and industry peers, those marketing efforts could prove fruitful and encourage participation.

Most program participants who receive a scoping study follow through with project implementation. According to our program participant survey, 75% of those receiving a scoping study stated their organization implemented all measures presented in the study. The finding illustrates the importance of encouraging as many participants as possible to have scoping studies completed for their facilities.

Recommendations

In response to key findings and other findings detailed later in the report, Cadeo developed the following recommendations for RI Energy to consider as part of future program delivery.

Table 1. Summary of Recommendations

#	Recommendation	Details
1	**Improve categorization of building types**	We recommend that the program continue to improve categorization of projects into building types. Our assessment of the tracking data showed that many projects were classified as "Other" over the evaluation period. RI Energy has made positive progress as the proportion of projects classified as "Other" decreased in 2023. Additionally, we recommend categorizing projects into building types consistently across fuel types and program years. Our assessment showed some businesses were categorized into more than one building type. For C&I projects, this was not uncommon (e.g., a school campus with office space), but we recommend including consistency checks in the data entry process. More comprehensive and more accurate categorization will facilitate future research into and analysis of specific business segments.
2	**Make nonresidential web pages easier to find on the RI Energy website**	We recommend reviewing the website design to make navigation to RI Energy's C&I energy-efficiency programs easier and more intuitive. While reviewing the RI Energy website, our team determined that finding the appropriate web pages for nonresidential energy-efficiency programs was not intuitive. The "Ways to Save" dropdown menu was designed more for residential customers than C&I customers. For example, the "Savings for Your Business' option on the "Ways to Save" dropdown menu was at the bottom of the list while options above it all related to residential customers. Websites for peer programs, such as Mass Save, Wisconsin's Focus on Energy, and SMUD, had discrete menus for nonresidential customers to navigate to the correct pages.
3	**Consider utilizing alternatives to on-site post-installation verification methods**	RI Energy staff indicated that on-site post-installation verification can be expensive and all projects are verified prior to incentive payouts. Although this practice remained critical to managing risk and supporting program growth, some peer programs offered varying levels of post-installation verification rigor, such as virtual verification (e.g., using smartphones or tablets with back-facing cameras to virtually walk through customer facilities) or allowing certain projects (based on energy savings thresholds, incentive amounts, etc.) to bypass onsite post-installation verification. Another opportunity would be to offer alternatives to onsite post-installation verification to customers in good standing, repeat program participants, or project implementation partners in good standing.

Introduction

This report details the findings from Cadeo's process evaluation of RI Energy's Retrofit Custom Pathway program.

Background

As part of its 2024 Annual Plan, RI Energy identified that the program, specifically the Retrofit Custom Pathway, would benefit from evaluation support. RI Energy requested that Cadeo conduct a process evaluation to assess program activities and identify opportunities for program enhancement.

About the Large C&I Retrofit Program

RI Energy's retrofit program offers financial incentives to encourage large C&I customers to replace existing equipment with energy-efficient equipment. The retrofit program includes three distinct pathways for customers: Prescriptive, Upstream, and Custom. This evaluation study focused solely on the Retrofit Custom Pathway,[2] which was intended to support projects that included energy-efficient upgrades beyond those included in the Prescriptive and Upstream pathways, and that generally required individualized energy savings calculations.

Study Objectives

Overall, RI Energy's goal is to develop recommendations for custom measure process improvements that could lead to greater participation and energy savings. In addition to this overarching study goal, initial planning discussions with RI Energy stakeholders identified the following specific research objectives:

1 | Understand how long the custom process takes, which steps take the most time, and what options exist for expediting the process.
2 | Examine what aspects of the process work well and which aspects pose bottlenecks or pain points for participants.
3 | Determine if other custom measure types might be well-suited for the custom express pathway or the prescriptive pathway.[3,4]
4 | Compare RI Energy's custom offering to custom programs in other states, with the goal of providing context for RI Energy's offering and identifying best practices that may be applicable in Rhode Island.

[2] For this study, New Construction projects were not included.
[3] The original evaluation scope of work included an assessment of the effectiveness of existing custom express tools in streamlining the program process. Upon discussions with RI Energy, it was determined that this research objective could be better addressed through an impact evaluation.
[4] At the time of this report, sufficient data on Custom Express tools were unavailable. RI Energy has started the process of collecting all current tools.

5 | Explore why some customers do not complete the full scope of identified opportunities.

6 | Understand the value that participants and vendors see in the custom offering beyond energy and/or financial savings.

Methodology

This section describes activities Cadeo used to investigate the research objectives and the data sources referenced.

Research Activities

The team completed five research activities to evaluate the program, as summarized briefly in Table 2.

Table 2. Summary of Evaluation Activities

Task	Summary
Program Staff Interviews	Completed three separate in-depth interviews by telephone with RI Energy program implementation staff to understand the current program processes, delivery, planned changes, program strengths, and perceived participant experience. The interview guide can be found in Appendix C.
Project Implementation Partner Interviews	Conducted five in-depth interviews with technical assistance study providers, technical reviewers, and installation contractors to understand their perspectives regarding program processes, market conditions, and customer barriers. RI Energy staff provided a list of participating project implementation partners, which Cadeo supplemented with a list generated through online research. The interview guide can be found in Appendix D
Program Data Review	Reviewed three years of tracking data provided by RI Energy. The analysis focused on overall savings, savings by measures category, and savings by building type. The team reviewed metrics by year to assess trends among the categories.
Peer Program Comparisons	Reviewed several similar program offerings, relying on existing, recently completed research as well as primary data collected from peer program implementation staff. These reviews sought to provide insights into current practices of peer and high-performing programs with similar delivery models for comparison to and potential adoption by RI Energy's program. The interview guide can be found in Appendix E.
Participant Survey	Completed a web-based survey with 40 customers who participated in the program's Retrofit Custom Pathway during PY2021-2023. The survey focused on the participant experience, including program awareness, decision making, satisfaction with program elements, and potential program enhancements. The participant survey can be found in Appendix F.

Data Sources

RI Energy provided the following datasets (extracts from the program tracking system), which our team used as the basis for the process evaluation activities:

- Electric Custom Detail Report for projects completed in PY2021-2023
- Natural Gas Custom Detail Report for projects completed in PY2021-2023
- List of project implementation partners with program activity in PY2021-2023

Other sources of data included:

- RI Energy's program website[5]
- RI Energy Annual Plans and Three-Year Plans[6]
- RI Energy's National Grid Rhode Island HVAC Approved Contractor List[7]
- Comparable program data and findings from Process Evaluation of Mass Save C&I Custom Pathway[8]

Literature Review

Cadeo identified seven programs targeting similar large C&I customer populations, as shown in Table 3.[9] The team reviewed all program descriptions, evaluation reports when available, and attempted telephone interviews with program representatives from three programs.

The literature review involved searching publicly available information to obtain a program overview. The team sought information on eligibility requirements and financing options among other program elements. Cadeo also reached out to a subset of program contacts for additional information. These follow-up interviews primarily focused on confirming our understanding of the programs from the literature review, assessing program administration best practices, and learning effective strategies for engaging large C&I customers.

[5] Accessed October-December 2024 and available here: https://www.rienergy.com/site/ways-to-save/save-money-with-rebates-and-incentives/savings-for-your-business/retrofit-program

[6] Available here: https://eec.ri.gov/data-and-publications/

[7] Published in March 2022. Available here: https://www.nationalgridus.com/media/pdfs/resi-ways-to-save/rhode-island-electric-mshp-contractors.pdf

[8] Published in April 2024. Available here: https://ma-eeac.org/wp-content/uploads/MA23C04-B-CUSTPRPR-Custom-Pathway-Process-Study-Final-Report-2024-4-10.pdf

[9] Cadeo relied on existing research recently completed in Massachusetts. After discussions with RI Energy staff, the team excluded some programs from the Massachusetts study as they were deemed dissimilar from RI Energy's program. Cadeo added in three programs from Vermont, Connecticut, and Sacramento that were more comparable to RI Energy's program.

Table 3. Peer Program Literature Review Sources

Program Sponsor	Location	Level of Detail Obtained	
		Review Program Description and Website	Review Evaluation Reports/ Program Plans
Mass Save	Massachusetts	✓	✓
Consolidated Edison	New York	✓	✓
Efficiency Maine	Maine	✓	✓
Sacramento Municipal Utility District	California	✓	
Efficiency Vermont	Vermont	✓	
Energize Connecticut	Connecticut	✓	✓
Focus on Energy	Wisconsin	✓	✓

Participant Survey Disposition

Cadeo deployed the participant survey via Qualtrics® between September 30, 2024, and October 11, 2024, to large C&I customers who participated in the program between 2021 and 2023. We distributed the survey via email to 280 participants with valid email addresses (86% of total participants). All participants with email addresses received a minimum of three survey invitation emails. The team additionally conducted telephone outreach to all participants with valid phone numbers (312 or 95% of total participants), including those with nonresponsive email addresses. In total, Cadeo received 40 completed surveys (a 12% response rate).

Program Participation Assessment

Cadeo analyzed program participation data from 2021, 2022, and 2023 to characterize recent project trends. The following sections are divided into Retrofit Custom Pathway retrofit projects with electric energy savings and projects with natural gas energy savings.[10] Each section includes overall metrics, metrics by measure categories, and metrics by building type.

Defining a project

For this study, we defined a project as a unique Application ID in RI Energy's tracking data. Projects could include multiple measures and measure categories, and one or more fuel types.

Electric Projects

Program-Level Participation and Energy Savings

Table 4 shows overall participation, energy savings, and incentives for projects that included electric energy-savings measures.[11] Reported energy savings decreased over the three years, though the number of projects remained relatively consistent. This shows that, although RI Energy completed similar number of projects, average energy savings from each project decreased. As discussed further in this section, an analysis by measure category shows that the decrease in lighting and streetlighting projects served as a key factor in this trend.

Table 4. Program-Level Participation and Energy Savings (MWh)

Year	Number of Projects	Reported Energy Savings	Mean Energy Savings	Median Energy Savings	Total Incentive ($000)	Mean Incentive ($000)	Median Incentive ($000)
2021	167	14,911	89.3	19.1	$7,516	$45.0	$7.38
2022	153	9,521	62.2	17.7	$4,778	$31.2	$8.07
2023	147	8,266	56.2	18.2	$3,063	$20.8	$1.92
Total	**467**	**32,699**	**70.0**	**18.2**	**$15,357**	**$32.9**	**$5.21**

[10] Energy savings presented in this report are for gross energy savings.

[11] Cadeo received program tracking data from RI Energy in individual files by program year and fuel type. Datasets included Large Commercial Retrofit and Large Commercial New Construction projects. For this study, we excluded all projects listed as Large Commercial New Construction.

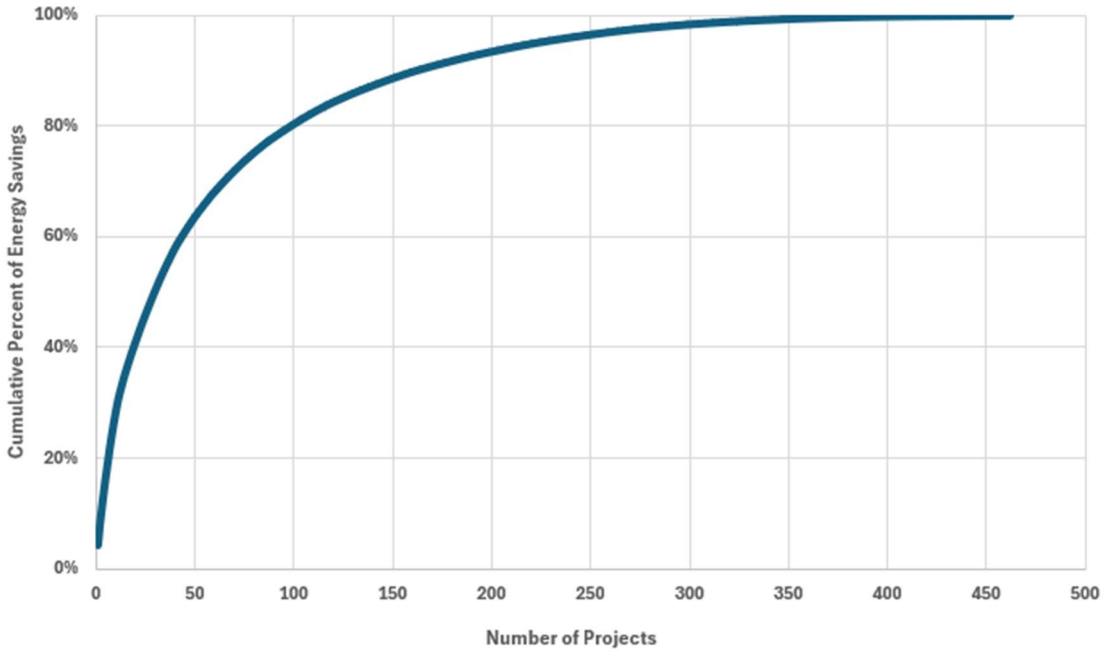
Table 5 shows the distribution of projects by energy savings for each year included in the study. Over all three years, most projects fell into the <50,000 kWh range. Notably, the number of projects above 50,000 kWh and the number of projects above 250,000 kWh decreased by roughly half over the period. This trend helped explain lower overall energy savings in 2022 and 2023, as a few very large projects could have significantly influenced total savings. The primary contributor to this shift was the decrease in lighting projects. In 2021, RI Energy reported 22 lighting projects with savings greater than 50,000 kWh. In 2022 and 2023, RI Energy reported 11 and 4 projects above 50,000 kWh, respectively.

Table 5. Projects by Size, Electric

Program Year	<9,999 kWh	10,000 to 49,999 kWh	50,000 to 249,999 kWh	250,000 to 499,999 kWh	>500,000 kWh
2021	62	46	40	11	8
2022	54	52	35	8	4
2023	57	62	20	4	4
Total	**173**	**160**	**95**	**23**	**16**

Figure 1 shows the cumulative distribution of energy savings by project count across the three years. About 20% of projects (98 out of 467) generated 80% of total savings, while only 19 projects generated 40% of total savings. This is a common distribution among large C&I retrofit programs with a high volume of smaller projects and several very large projects driving program-level energy savings.

Figure 1. Cumulative Distribution of Energy Savings by Project Count, Electric



Measure Category Participation and Energy Savings

Table 6 shows a breakdown of electric projects by measure category over the three-year evaluation period. LED Lighting projects represented the highest proportion of energy savings (28.3%) with mean energy savings over 126,000 kWh. Lighting projects in buildings combined (LED Lighting and Lighting Systems) represented over 36% of reported savings. Streetlight projects generally were the largest projects by total energy savings, averaging over 245,000 kWh per project and representing 15% of reported savings.

Following lighting projects, O&M projects (42,200 kWh) and Process projects (78,900 kWh) generated the highest average savings per project. By volume of projects, participants completed 151 O&M projects, over double the volume in any other category. The tracking data also included five strategic energy management (SEM) projects with average energy savings of 229,300 kWh.

"All Other" Measures

Cadeo grouped measure categories with relatively low energy savings contributions to the program into an "All Other" measure category.

For electric projects, this category included Energy Management Systems, Drives, Motors, Building Shell, Lighting Controls, Compressed Air, and Food Service.

Table 6. Measure Category Statistics, Electric (MWh)

Measure Category	Number of Projects	Reported Energy Savings	Percent of Reported Savings	Mean Project Energy Savings	Median Project Energy Savings
LED Lighting	74	9,259	28.3%	126.4	39.9
O&M	151	6,368	19.5%	42.2	10.1
Streetlights	20	4,902	15.0%	245.1	116.3
Lighting Systems	27	2,696	8.2%	99.9	10.3
Process	33	2,603	8.0%	78.9	44.8
Other (Categorized as)	23	1,553	4.7%	67.5	12.6
Refrigeration	44	1,491	4.6%	33.9	21.4
SEM	5	1,147	3.5%	229.3	301.6
HVAC	41	1,054	3.2%	25.7	11.2
All Other Categories	64	1,627	5.0%	25.4	16.4
Total	**482**	**32,699**	**100%**	**68.0**	**17.8**

The team analyzed program participation by year to assess any trends specific to measure categories. Table 7 shows the proportion of total program energy savings for the measure categories, and Figure 2 shows project counts that include each measure category for each year. The relative energy savings and volume of LED Lighting projects trended downward, while the proportion and volume of Lighting Systems projects increased. Savings from O&M and Process projects trended upward over the evaluation period.[12] Conversely, after high savings in 2021 and 2022, no Streetlight projects were completed in 2023.

[12] The increase in O&M savings is primarily a result of an increase in very large projects (i.e., >250,000 kWh saved) in 2023, 1.3 million kWh of which were for the same customer across three different projects.

Table 7. Measure Category Savings by Year, Electric

Measure Category	Program Year		
	2021	2022	2023
LED Lighting	5,053 MWh 33.9%	2,220 MWh 23.3%	1,986 MWh 24.0%
O&M	1,569 10.5%	1,212 12.7%	3,587 43.4%
Streetlights	3,269 21.9%	1,633 17.2%	0 0%
Lighting Systems	1,255 8.4%	1,230 12.9%	211 2.5%
Process	880 5.9%	522 5.5%	1,201 14.5%
Other (Categorized as)	1,425 9.6%	7 0.1%	121 1.5%
Refrigeration	295 2.0%	882 9.3%	314 3.8%
SEM	510 3.4%	637 6.7%	0 0%
HVAC	248 1.7%	417 4.4%	390 4.7%
All Other Categories	407 2.7%	763 8.0%	457 5.5%
Total	**14,911** **100%**	**9,521** **100%**	**8,266** **100%**

Figure 2. Measure Category Project Counts by Year, Electric

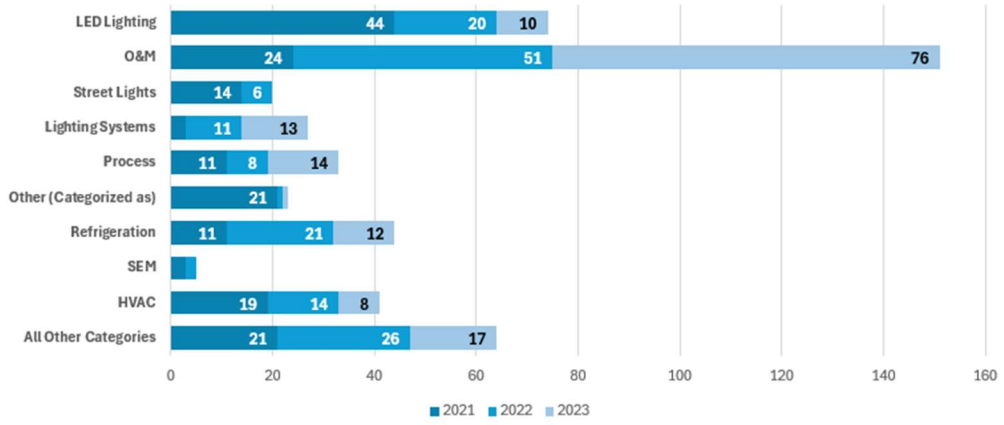


Table 8 shows the distribution of projects by energy savings size for each measure category. Lighting projects for buildings were among the largest energy savers, representing a high proportion of projects with savings between 250,000 and 499,999 kWh (11 of 25) and projects with savings above 500,000 kWh (6 of 10). Though O&M projects were relatively small compared to most other measure categories, those projects represented nearly one-third (31%) of total projects completed over the evaluation period.

Table 8. Measure Category Projects by Size, Electric (MWh)

Measure Category	<9,999	10,000 to 49,999	50,000 to 249,999	250,000 to 499,999	>500,000
LED Lighting	21	19	20	11	3
O&M	74	58	12	6	1
Streetlights	3	2	9	3	3
Lighting Systems	13	7	5	0	2
Process	5	13	13	2	0
Other (Categorized as)	10	6	6	0	1
Refrigeration	15	15	14	0	0
SEM	0	1	1	3	0
HVAC	18	18	5	0	0
All Other Categories	27	29	8	0	0
Total	**186**	**168**	**93**	**25**	**10**

Building Type Participation and Energy Savings

Table 9 shows the breakdown of electric projects by building type over the three-year evaluation period. Over one-quarter (26.7%) of reported energy savings were assigned "Other" in the tracking data. Cadeo recategorized as many of these as possible by matching to related projects and customers in the tracking data. Notably, of projects in the "Other" category, over half of the energy savings came from Streetlight projects and over 90% came from Streetlights, LED Lighting, and Lighting Systems projects combined.

"Other" projects were also among the highest energy savers per project, only behind University/Community College and Office/Professional projects.

Recategorizing "Other"

Cadeo checked for consistency of building type classifications across fuel types, program years, and application IDs. Using a combination of Premise ID, Account ID, Business Name, and Application ID fields, we recategorized as many "Other" and missing building types into one of the specific types.

The program completed the highest volume of projects in Food Sales or Services building types, though the segment represented a relatively low proportion of total program savings. This primarily resulted from the number of franchises participating in the program (i.e., a high volume of small food sales establishments through a single parent organization).

Recommendation 1:
Improve categorization of building types.

We recommend that the program continue to improve categorization of projects into building types. Our assessment of the tracking data showed that many projects were classified as "Other" over the evaluation period. RI Energy has made positive progress as the proportion of projects classified as "Other" decreased in 2023. Additionally, we recommend categorizing projects into building types consistently across fuel types and program years. Our assessment showed some businesses were categorized into more than one building type. For C&I projects, this was not uncommon (e.g., a school campus with office space), but we recommend including consistency checks in the data entry process. More comprehensive and more accurate categorization will facilitate future research into and analysis of specific business segments.

Table 9. Building Type Statistics, Electric (MWh)

Building Type	Number of Projects	Percent of Reported Savings	Mean Project Energy Savings	Median Project Energy Savings
Other (Categorized as)	54	26.7%	161.8	54.8
Industrial/Manufacturing	80	25.6%	104.5	45.8
University/Community College	25	14.7%	192.3	82.7
Food Sales or Service	169	10.4%	20.2	8.5
Office/Professional	11	9.3%	275.0	42.5
Primary/Secondary Schools	60	6.6%	37.6	10.8
Retail	45	2.3%	16.6	7.5
Health Care	8	2.0%	80.0	101.8
Lodging	5	1.8%	117.6	43.5
Public Assembly	2	0.3%	56.4	56.4
Multifamily	3	0.3%	35.0	18.0
Total	**462**	**100%**	**71.0**	**18.7**

Cadeo analyzed program participation by year to assess any trends specific to building types. Table 10 shows the proportion of total program energy savings per building types, and Figure 3 shows each building type's project counts for each year. The proportion of projects categorized as "Other" building types decreased over the evaluation period. This decrease most likely resulted from the absence of Streetlight projects in 2023.

Table 10. Building Type Savings by Year, Electric

Building Type	Program Year		
	2021	2022	2023
Other (Categorized as)	4,244 MWh 28.5%	3,257 MWh 34.2%	1,236 MWh 15.0%
Industrial/Manufacturing	3,671 24.6%	2,771 29.1%	1,920 23.2%
University/Community College	2,841 19.1%	643 6.7%	1,324 16.0%
Food Sales or Service	429 2.9%	1,623 17.0%	1,359 16.4%
Office/Professional	1,246 8.4%	402 4.2%	1,376 16.7%
Primary/Secondary Schools	1,557 10.4%	257 2.7%	352 4.3%
Retail	491 3.3%	68 0.7%	186 2.3%
Health Care	153 1.0%	159 1.7%	328 4.0%
Lodging	279 1.9%	124 1.3%	185 2.2%
Public Assembly	0.00 0.0%	112 1.2%	0.34 0.0%
Multifamily	0.00 0.0%	105 1.1%	0.00 0.0%
Total	**14,911** **100%**	**9,521** **100%**	**8,266** **100%**

Figure 3. Building Type Project Counts by Year, Electric

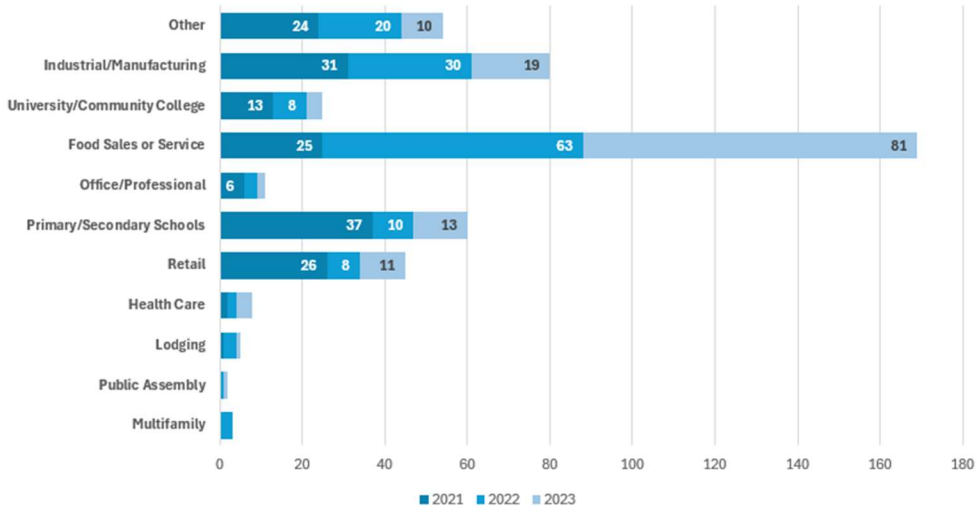


Table 11 shows the distribution of projects by size in energy savings for each building type. Industrial/Manufacturing projects generally were some of the highest energy savers. Conversely, though there were many Food Sales or Service projects, they were relatively low energy savers.

Table 11. Building Type Projects by Size, Electric (MWh)

Building Type	<9,999	10,000 to 49,999	50,000 to 249,999	250,000 to 499,999	>500,000
Other (Categorized as)	14	11	19	5	5
Industrial/Manufacturing	6	35	28	11	0
University/Community College	6	5	7	4	3
Food Sales or Service	89	60	19	1	0
Office/Professional	1	5	2	1	2
Primary/Secondary Schools	29	20	10	0	1
Retail	25	18	2	0	0
Health Care	2	1	5	0	0
Lodging	0	3	1	1	0
Public Assembly	1	0	1	0	0
Multifamily	0	2	1	0	0
Total	**173**	**160**	**95**	**23**	**11**

Natural Gas Projects

Program-Level Participation and Energy Savings

Table 12 shows overall participation, energy savings, and incentives for projects that included natural gas energy-savings measures. Reported energy savings and project volumes were high in 2022 compared to 2021 and 2023, though mean energy savings per project remained consistent across the evaluation period. Generally, RI Energy completed similarly sized projects over time, but at varying volumes by year. Additionally in 2023, the median energy savings decreased compared to 2021 and 2022, showing RI Energy completed fewer large projects during that year.

Table 12. Program-Level Participation and Energy Savings (Therms)

Year	Number of Projects	Reported Energy Savings	Mean Energy Savings	Median Energy Savings	Total Incentive ($000)	Mean Incentive ($000)	Median Incentive ($000)
2021	102	960,334	9,415	4,626	$1,580	$15.5	$4.86
2022	154	1,561,730	10,141	4,359	$3,340	$21.7	$7.75
2023	81	692,615	8,551	3,499	$1.617	$20.0	$7.30
Total	**337**	**3,214,678**	**9,539**	**4,216**	**$6,536**	**$19.4**	**$6.82**

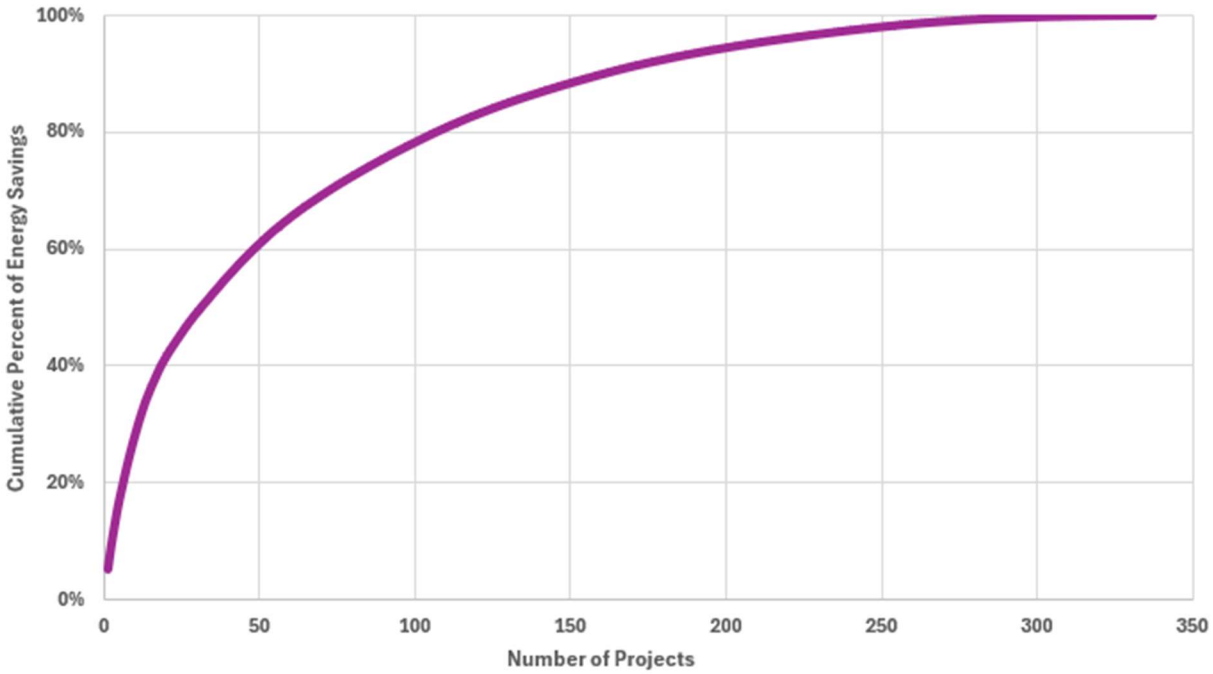
Table 13 shows the distribution of projects by energy savings for each year included in the study. Over the evaluation period, most projects saved less than 10,000 therms with only a few very large projects above 100,000 therms.

Table 13. Projects by Size, Natural Gas (Therms)

Program Year	<2,499	2,500 to 9,999	10,000 to 24,999	25,000 to 99,999	>100,000
2021	39	38	17	8	0
2022	50	67	26	9	2
2023	35	28	13	4	1
Total	**124**	**133**	**56**	**21**	**3**

Figure 4 shows the cumulative distribution of energy savings by project count across the three years. As shown, about 30% of the projects (106 out of 337) generated 80% of total savings, while only 18 projects generated 40% of total savings. This is a common distribution among large C&I retrofit programs with a high volume of smaller projects and several very large projects driving program-level energy savings.

Figure 4. Cumulative Distribution of Energy Savings by Project Count, Natural Gas



Measure Category Participation and Energy Savings

Table 14 shows a breakdown of natural gas projects by measure category over the evaluation period. Stream Trap projects represented the highest proportion of energy savings (26.8%) with mean energy savings of over 9,000 therms. RI Energy completed Steam Trap projects consistently in all education, health care, and industrial building types.

Process and SEM projects contributed the highest savings per project (over 42,000 therms and over 23,000 therms, respectively). By volume, HVAC projects represented the most frequent measure category (112 projects), though relative energy savings were lower than in nearly all other categories.

"All Other" Measures

Cadeo grouped measure categories that contributed relatively low energy savings to the program into an "All Other" measure category.

For natural gas projects, this category included Insulation, Boilers, Heat Recovery Ventilation, Kitchen Equipment, Air Sealing, and Domestic Water Heating measure categories.

Table 14. Measure Category Savings Statistics, Natural Gas (Therms)

Measure Category	Number of Projects	Percent of Reported Savings	Mean Project Energy Savings	Median Project Energy Savings
Steam Traps	92	26.8%	9,361	5,886
O&M	41	19.4%	15,238	4,064
HVAC	112	17.0%	4,879	2,355
Insulation Duct & Pipe	45	15.3%	10,931	5,332
Process	8	10.6%	42,527	10,391
Other (Categorized as)	26	6.0%	7,467	2,320
SEM	3	2.2%	23,394	20,496
All Other Categories	24	2.7%	3,574	2,349
Total	**351**	**100%**	**9,159**	**4,020**

The team analyzed program participation by year to assess any trends specific to measure categories. Table 15 shows the proportion of total program energy savings for the measure categories, and Figure 5 shows project counts including each measures category for each year. As noted, energy savings and project volumes generally increased from 2021 to 2022 and decreased from 2022 to 2023.

Table 15. Measure Category Savings by Year, Natural Gas

Measure Category	Program Year		
	2021	2022	2023
Steam Traps	324,471 therms 33.3%	350,601 therms 22.7%	186,176 therms 26.9%
O&M	133,468 13.7%	362,955 23.4%	128,340 18.5%
HVAC	194,424 20.0%	274,730 17.7%	77,310 11.2%
Insulation Duct & Pipe	89,407 9.2%	293,608 19.0%	108,883 15.7%
Process	32,781 3.4%	165,935 10.7%	141,498 20.4%
Other (Categorized as)	136,539 14.0%	47,779 3.1%	9,827 1.4%
SEM	49,685 5.1%	20,496 1.3%	0 0.0%
All Other Categories	13,461 1.4%	31,724 2.0%	40,581 5.9%
Total	**974,235** **100%**	**1,547,828** **100%**	**692,615** **100%**

Figure 5. Measure Category Project Counts by Year, Natural Gas

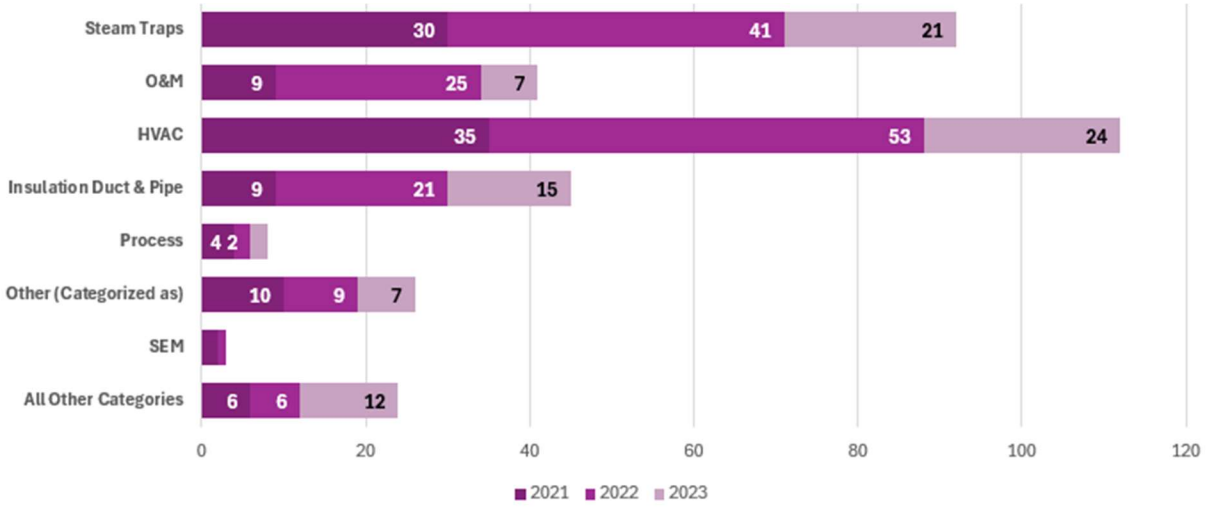


Table 16 shows the distribution of projects by energy savings size for each measure category. While most categories remained relatively consistent across the size categories, HVAC projects stood out as a measure category relying more on volume than on project-level energy savings to accumulate savings.

Table 16. Measure Category Projects by Size, Natural Gas (Therms)

Measure Category	<2,499	2,500 to 9,999	10,000 to 24,999	25,000 to 99,999	>100,000
Steam Traps	20	43	24	5	0
O&M	13	12	9	6	1
HVAC	59	43	8	2	0
Insulation Duct & Pipe	14	16	11	4	0
Process	0	4	1	1	2
Other (Categorized as)	15	8	2	1	0
SEM	0	0	2	1	0
All Other Categories	15	7	2	0	0
Total	**136**	**133**	**59**	**20**	**3**

Building Type Participation and Energy Savings

Table 17 shows the breakdown of natural gas projects by building type over the evaluation period. Nearly half (45.7%) of reported energy savings came from Industrial/Manufacturing projects. Education facilities also represented a high proportion of energy savings (35.2% combined in University/Community Colleges and Primary/Secondary Schools).

Notably, only four projects were categorized as "Other," a finding in salient contrast with electric projects.

Table 17. Building Type Statistics, Natural Gas (Therms)

Building Type	Number of Projects	Percent of Reported Savings	Mean Project Energy Savings	Median Project Energy Savings
Industrial/Manufacturing	80	45.7%	15,992	8,032
University/Community College	47	22.2%	13,204	4,869
Primary/Secondary Schools	74	13.0%	4,917	2,711
Health Care	29	12.4%	11,991	5,884
Food Sales or Service	31	4.1%	3,718	2,805
Other	4	1.2%	8,337	7,471
Office/Professional	8	0.5%	1,766	875
Multifamily	3	0.3%	2,804	2,140
Retail	12	0.3%	693	144
Lodging	2	0.2%	3,415	3,415
Public Assembly	0	0.0%	n/a	n/a
Total	**290**	**100%**	**9,539**	**4,216**

Cadeo analyzed program participation by year to assess trends specific to building types. Table 18 shows the proportion of total program energy savings by building type, and Figure 6 shows project counts for each building type for each year. Again, the 2022 project volume was higher than in 2021 and 2023 for most building types. Particularly, RI Energy completed more projects in Primary/Secondary Schools in 2022 (49 projects), but completed projects in that category decreased substantially in 2023 to only eight projects.

Table 18. Building Type Savings by Year, Natural Gas

Building Type	Program Year		
	2021	2022	2023
Industrial/Manufacturing	318,997 therms 37.2%	648,934 therms 48.6%	311,408 therms 51.5%
University/Community College	312,123 36.4%	144,625 10.8%	163,821 27.1%
Primary/Secondary Schools	52,585 6.1%	269,148 20.2%	42,125 7.0%
Health Care	126,408 14.7%	170,295 12.8%	51,034 8.4%
Food Sales or Service	36,002 4.2%	72,632 5.4%	6,622 1.1%
Other	3,588 0.4%	11,354 0.9%	18,407 3.0%
Office/Professional	8,470 1.0%	2,146 0.2%	3,510 0.6%
Multifamily	0.00 0.0%	8,411 0.6%	0.00 0.0%
Retail	0.00 0.0%	59 0.0%	8,262 1.4%
Lodging	0.00 0.0%	6,829 0.5%	0.00 0.0%
Public Assembly	0.00 0.0%	0.00 0.0%	0.00 0.0%
Total	**858,173** **100%**	**1,334,433** **100%**	**605,188** **100%**

Figure 6. Building Type Project Counts by Year, Natural Gas

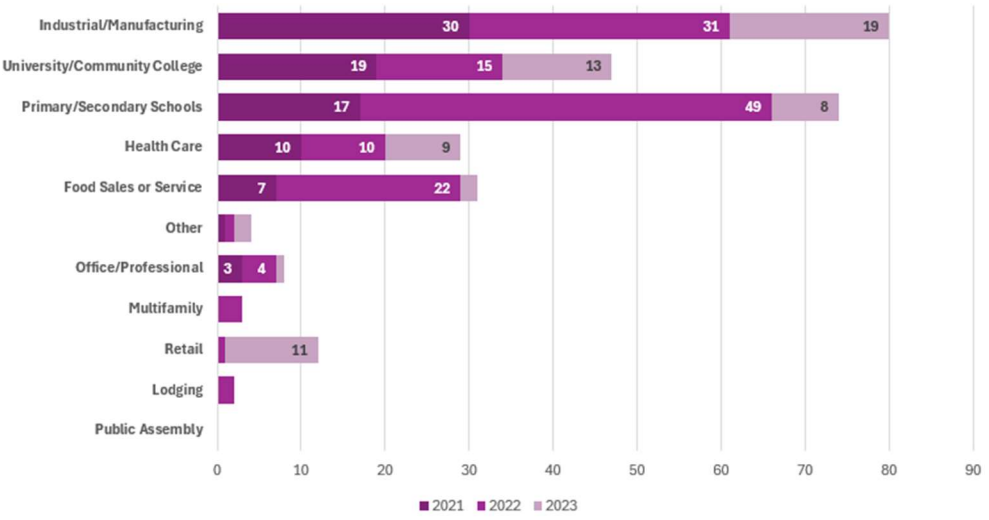


Table 19 shows the distribution of projects by energy savings size for each building type. Similarly to electric projects, Industrial/Manufacturing projects generally achieved some of the highest energy savings and were the only building type to include projects with over 100,000 therms saved.

Table 19. Measure Category Projects by Size, Natural Gas (Therms)

Building Type	<2,499	2,500 to 9,999	10,000 to 24,999	25,000 to 99,999	>100,000
Industrial/Manufacturing	19	27	23	8	3
University/Community College	11	23	6	7	0
Primary/Secondary Schools	34	41	8	1	0
Health Care	7	14	5	3	0
Food Sales or Service	13	16	2	0	0
Other	1	1	2	0	0
Office/Professional	6	2	0	0	0
Multifamily	2	1	0	0	0
Retail	11	1	0	0	0
Lodging	0	2	0	0	0
Public Assembly	0	0	0	0	0
Total	**104**	**118**	**46**	**19**	**3**

Project Timeline Analysis

Cadeo analyzed tracking data from 2021, 2022, and 2023 to assess the duration of projects implemented as Retrofit Custom Pathway projects. Electric tracking data and natural gas tracking data employ different field names for analogous milestones. As a result, we mapped the milestones as shown in Table 20.

Table 20. Project Milestone Mapping

Analysis Category	Electric	Natural Gas
Project Start Date	[CREATION_DATE]	[APPL_CREATED_DATE]
Technical Review	[PERFORM_TECH_REVIEW_DATE] – [CREATION_DATE]	[PERFORM_TECH_REVIEW_DATE] – [APPL_CREATED_DATE]
Customer Commitment	[COMMIT_DATE] - [PERFORM_TECH_REVIEW_DATE]	[OFFER_LETTER_ACCEPTED_DATE] - [PERFORM_TECH_REVIEW_DATE]
Time to Project Implementation Start	[LOG_START_OF_CONST_DATE] - [COMMIT_DATE]	[LOG_START_DATE] – [OFFER_LETTER_ACCEPTED_DATE]
Project Implementation	[ATTACH_INVOICES_DATE] - [LOG_START_OF_CONST_DATE]	[FINAL_PAYMENT_DATE] - [LOG_START_DATE]
Final Payment	[FINAL_PAYMENT_DATE] - [ATTACH_INVOICES_DATE]	[PAYT_COMPLETE_DATE] - [FINAL_PAYMENT_DATE]

Project Duration

Figure 7 and Figure 8 show the median length of time of individual project phases for electric and natural gas projects, respectively.[13] We calculated time lengths using the date in which the project was created in RI Energy's tracking system. The figures used milestone sequences found in each fuel type's tracking data.

Generally, natural gas projects took over twice as long as electric projects to complete the program cycle. Although technical reviews have often shorter timespans for electric projects than for natural gas projects, customers have a significantly longer amount of time to commit to natural gas projects than electric projects. Similarly, the median project implementation phase for natural gas projects was 108 days compared to 59 days for electric projects, likely due to the greater complexity in natural gas installations. Reasons for the longer customer commitment for

[13] The figures show the timeline if all phases were of median length, not the median length of individual projects.

natural gas projects remained unclear, hence we suggest an effective way to expedite projects could be achieved by RI Energy monitoring natural gas project timelines and engaging with customers regularly during the commitment phase to resolve issues.

Figure 7. Median Duration of Projects (Electric)

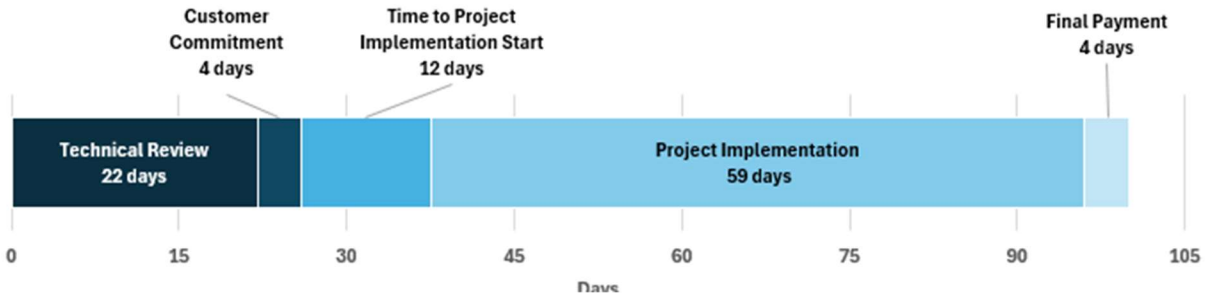
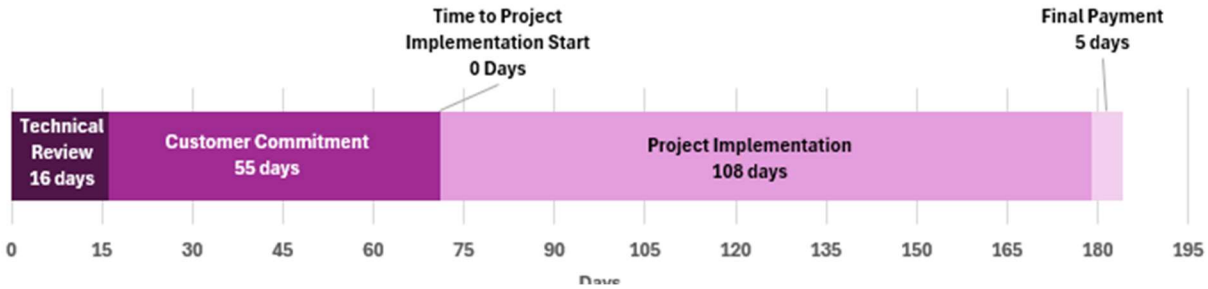


Figure 8. Median Duration of Projects (Natural Gas)



Project Duration Histograms

Figure 9 and Figure 10 show project length histograms from creation to final payment. Individual projects has a median length of 129 days for electric projects and 214 days for natural gas projects.[14] As shown in Table 21, 75% of electric projects were completed in under nine months (252 days), while 75% of natural gas projects were completed in about one year (373 days).

[14] These median times are calculated for holistic projects compared to individual phases as shown in Figure 7 and Figure 8.

Figure 9. Project Length Histogram (Electric)

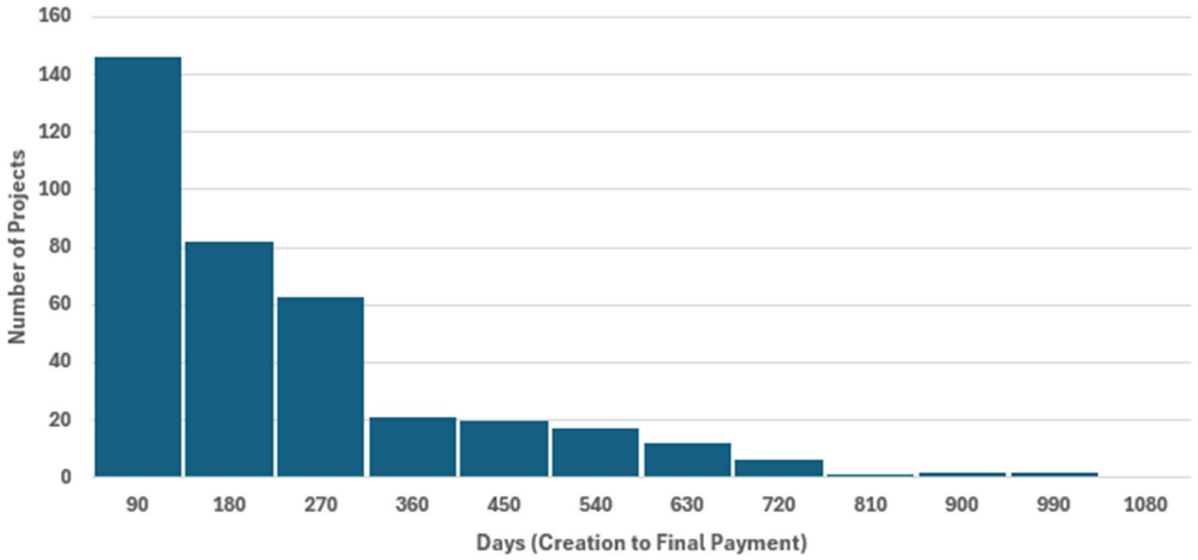


Figure 10. Project Length Histogram (Natural Gas)

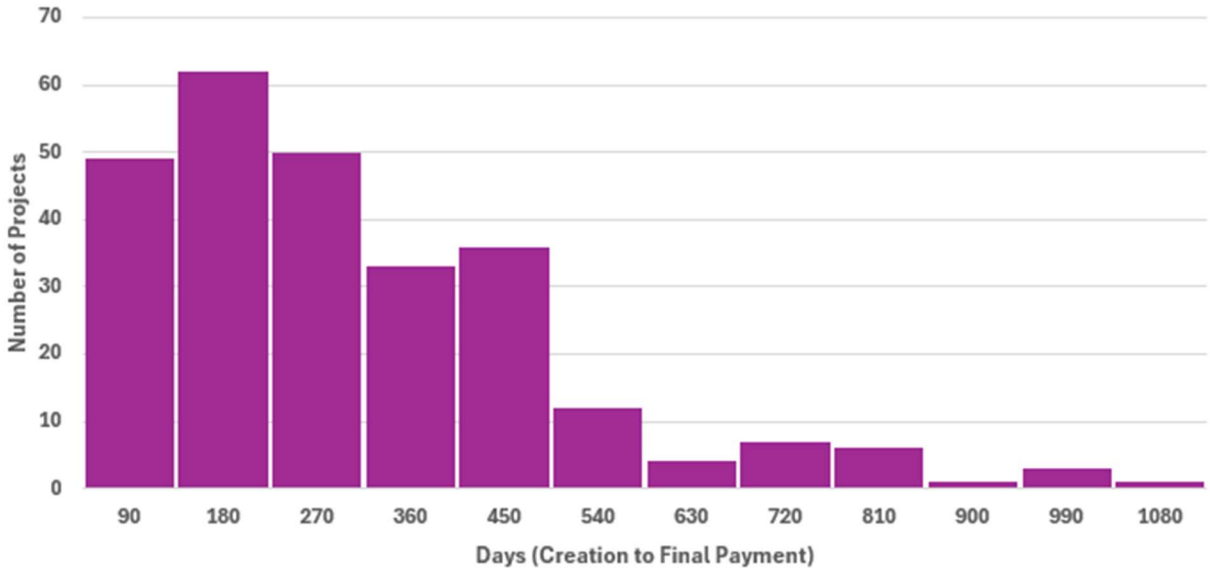


Table 21. Summary of Project Length Statistics (Days)

Fuel	Quartile 1	Median	Quartile 3	Average	Minimum	Maximum
Electric	69	129	252	187	3	953
Natural Gas	122	214	373	262	23	1,022

Figure 11 and Figure 12 show the median project length by project size in terms of energy savings. As expected, larger projects with higher savings had longer project lengths for both fuel types. Median electric project timelines were relatively consistent for projects less than 50,000 kWh, though they increased by more than double as savings increased above 50,000 kWh. Similarly for natural gas projects, median timelines were consistent for projects below 100,000 therms, but the three projects with savings greater than 100,000 therms were apparent outliers compared to all other natural gas projects.

Figure 11. Project Length by Project Size in Energy Savings (Electric)

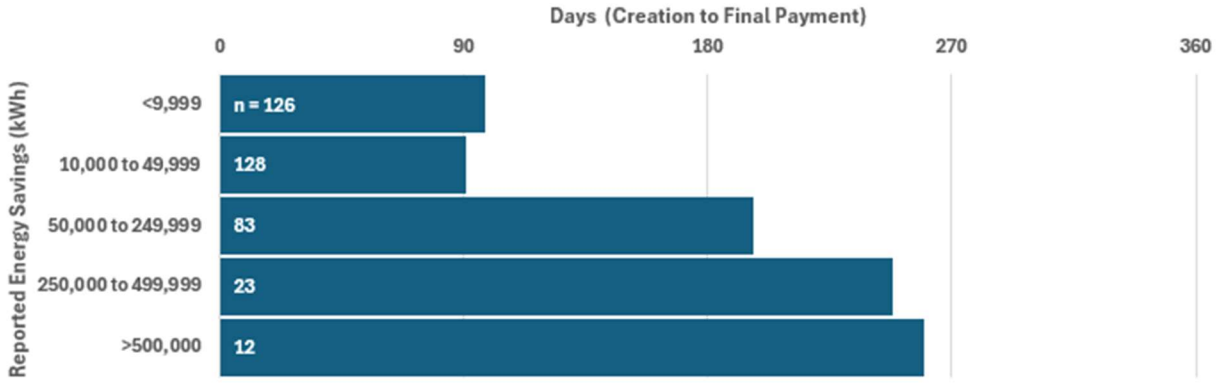
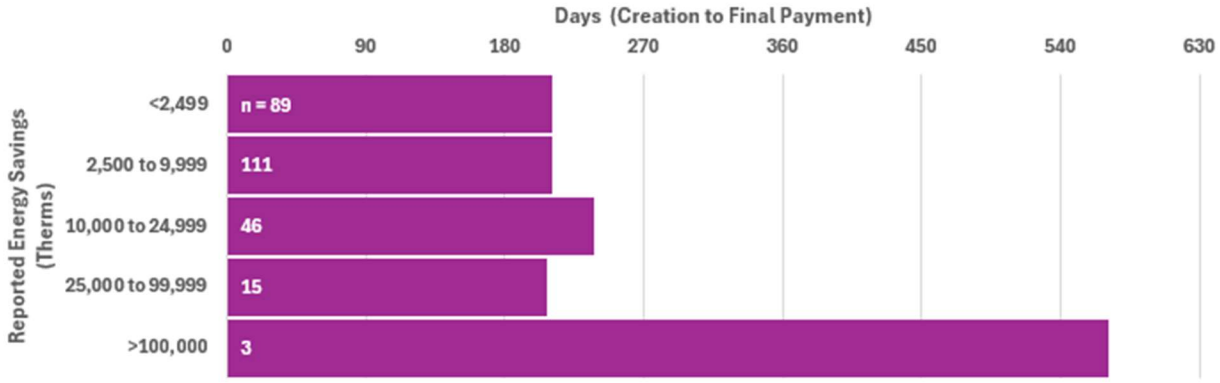


Figure 12. Project Length by Project Size in Energy Savings (Natural Gas)



Evaluation Findings

Our findings draw upon all evaluation activities and address the following key areas:

- Program Satisfaction
- Program Design and Delivery
- Customer Awareness, Engagement, and Decision Making
- Motivation for Participation
- Identified Opportunities for Improvement

Our program improvement recommendations appear in two places within this report: they are embedded this section alongside relevant findings, and they are summarized in the Executive Summary. Additionally, while Cadeo offers official recommendations in this report, our team encourages RI Energy to act on or explore any findings presented in this section that could result in Large C&I Retrofit program delivery improvements, regardless of whether or not our team offered an explicit recommendation.

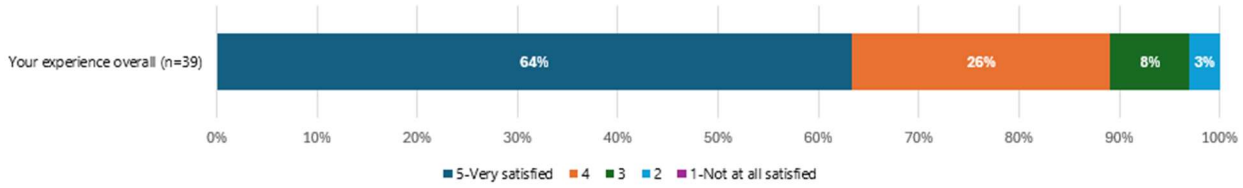
Participant Experience[15]

Overall Program Experience

In this section, we discuss participant program satisfaction. Descriptions follow of overall satisfaction and satisfaction with direct-install measures, installers, and the general program process.

Overall, participants responding to the survey reported a high level of overall satisfaction with the program experience, as shown in Figure 13. Survey respondents reported an average of 4.5 out of 5, where 5 represented "very satisfied" and 1 represented "not at all satisfied" with 90% reporting at least 4 out of 5. Only one respondent indicated overall satisfaction of less than 3.

Figure 13. Participant Satisfaction with Program Experience Overall

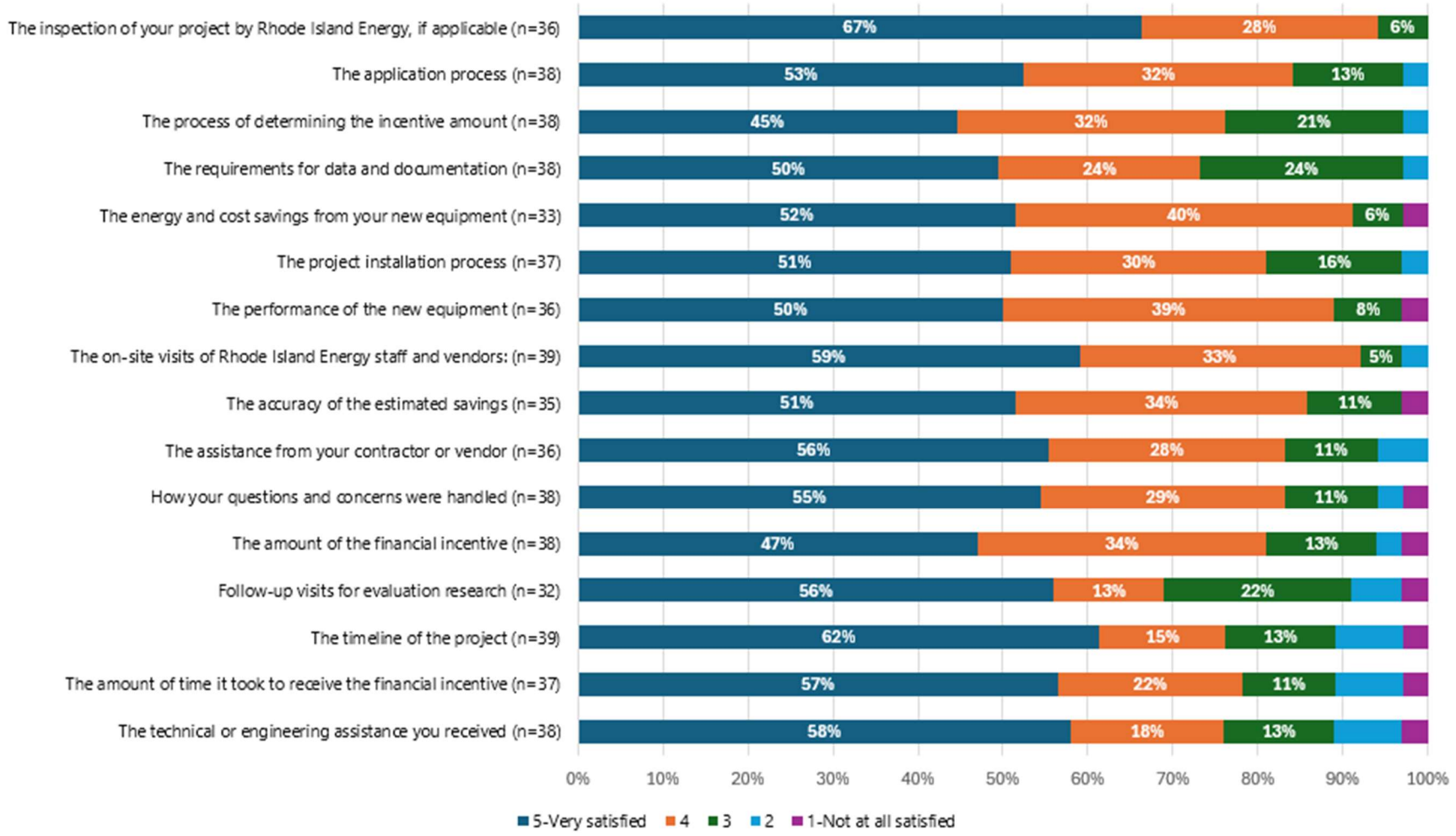


[15] As presented in the Data Sources section, the team reached out via email and telephone to program participant contacts in 2021, 2022, and 2023 via email and telephone. Cadeo received 40 complete surveys. For this survey population and disposition, 27 responses were needed to achieve 90% confidence with a 10% relative precision. The results included the number of responses for specific questions as "n."

Satisfaction with Program Elements

Cadeo asked participants to rank their satisfaction levels with various program components on a 1 to 5 scale, where 5 represented "very satisfied" and 1 represented "not at all satisfied." Figure 14 shows satisfaction ratings for program experience elements represented in the survey, ranked from highest to lowest satisfaction. Respondents rated all 17 program experience elements with an average satisfaction score of at least 4.1. The highest-rated components were the post-installation inspection by RI Energy staff (4.6) and on-site visits of RI Energy staff and vendors (4.5). This finding suggests that, while customers were generally satisfied with all program elements, they were especially satisfied with their direct engagement with RI Energy staff and vendors.

Figure 14. Participant Satisfaction with Program Experience Elements



Additionally, the team examined the number of low ratings received by each component. Only three program components received three or more responses below a 3 out of 5 score. Four participants indicated they were not completely satisfied with project timelines and incentive processing times, and three participants were not completely satisfied with evaluation research activities.

Despite general satisfaction with all program elements, about 1 in 5 (21%) respondents said they would change certain program aspects, as shown in Table 22. Notably, no respondents selected "rebate processing time" and only one respondent selected "level of financial support." "Other" covered a wide range of responses, including wishing the scoping study remained valid for a longer time, wanting a faster program process, describing how signatures required on paperwork proved cumbersome, expressing difficulty in tracing checks, and recommending the creation of a process to find the application on RI Energy's website.

Recommendation 2:
Make nonresidential web pages easier to find on the RI Energy website.

We recommend reviewing the website design to make navigation to RI Energy's C&I energy-efficiency programs easier and more intuitive. While reviewing the RI Energy website, our team determined that finding the appropriate web pages for nonresidential energy-efficiency programs was not intuitive. The "Ways to Save" dropdown menu was designed more for residential customers than C&I customers. For example, the "Savings for Your Business' option on the "Ways to Save" dropdown menu was at the bottom of the list while options above it all related to residential customers. Websites for peer programs, such as Mass Save, Wisconsin's Focus on Energy, and SMUD, had discrete menus for nonresidential customers to navigate to the correct pages.

Table 22. Program Elements Participants Would Change

Program Element	Count of Responses
Other	5
Communication from program and vendor staff	1
Program application process or paperwork	1
Technical assistance or education regarding energy-saving options	1
Assistance on equipment specifications	1
Equipment inspection process	1
Level of financial support	1
Rebate processing time	0
Information/data requirements for project approval	0
Project approval process	0
Web-based/online process	0
Instructions or examples on application/form	0
Accuracy of estimated incentive amounts	0
Assistance with identifying installation vendors	0
Flexibility in project timeline	0

> ***"It would be beneficial to have one point of contact throughout the process." – Program Participant***

Cadeo asked participants who responded that they would change a program aspect a follow-up question prompting them to describe their ideas on how the program should be changed. Participants were asked how RI Energy could simplify the application process or paperwork and were provided with an open-ended textbox in which to provide qualitative responses. One respondent said it would be beneficial to have one contact point throughout the process. When asked how RI Energy could improve technical assistance or education, again through an open-ended textbox, the same participant stated that contractors should be vetted regarding their commitment level to the client following the sale.

Lastly, the team asked participants how likely they would be to recommend someone undertake a RI Energy efficiency project. On a scale of 1 to 5, where 1 indicated "extremely unlikely" and 5 indicated "extremely likely," on average, respondents rated a 4.8, demonstrating a high likelihood of recommending the program to others and of corroborating overall satisfaction with the program and its elements.

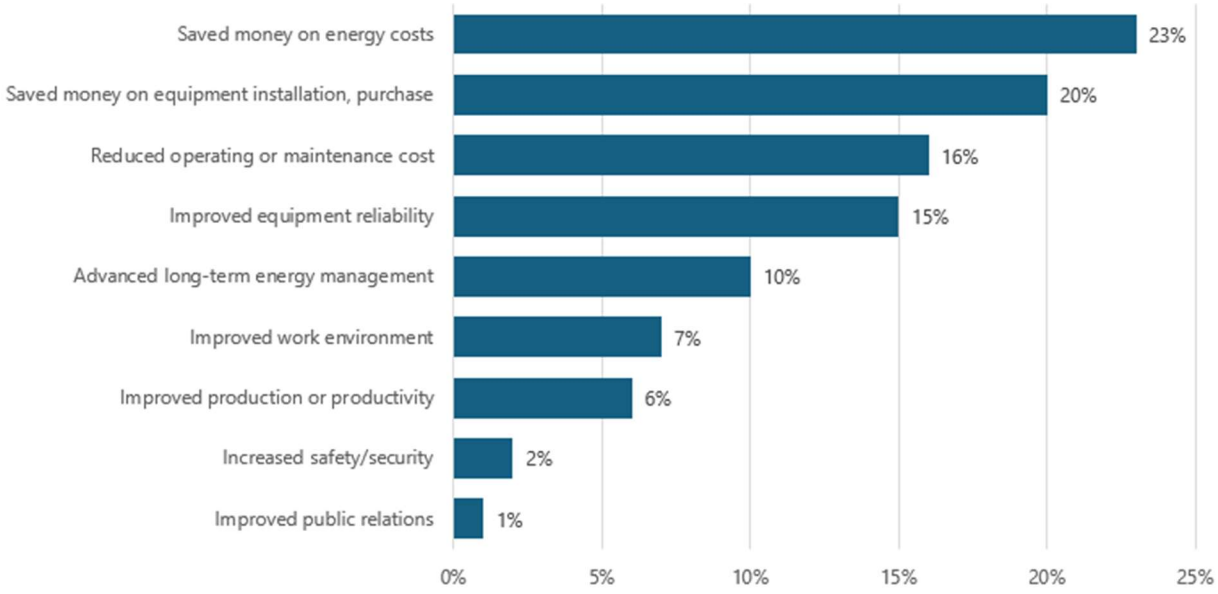
Participant Benefits

Cadeo asked participants about benefits their organization realized due to participation in the RI Energy program. As shown in Figure 15, the top three most-selected answers related to finances:

- Saved money on energy costs (23%)
- Saved money on equipment purchase and installation (20%)
- Reduced operating or maintenance costs (16%)

These findings are typical for C&I customers for whom finances and budgets drive many business decisions. Beyond the financial benefits, 10% of respondents indicated that program participation helped advance their organization's long-term energy management and sustainability goals.

Figure 15. Realized Benefits by Program Participants



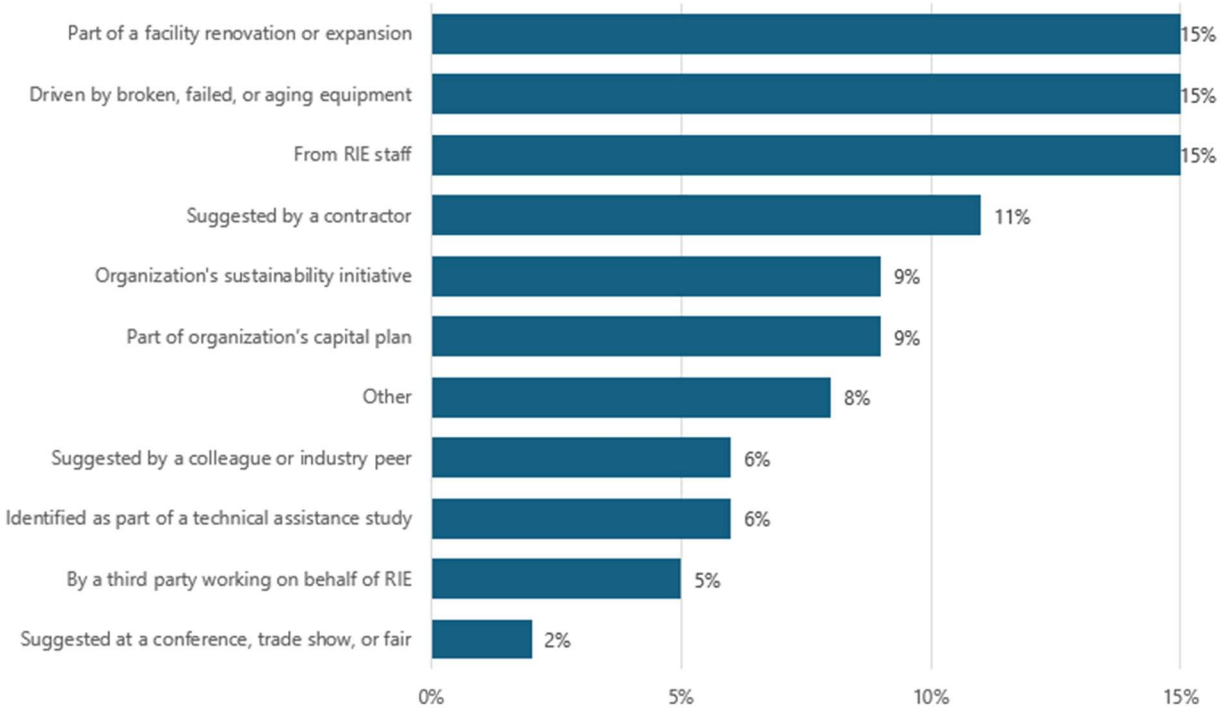
Program Awareness and Project Origin

The evaluation team asked about program awareness and modes through which projects originated.

Project Origin

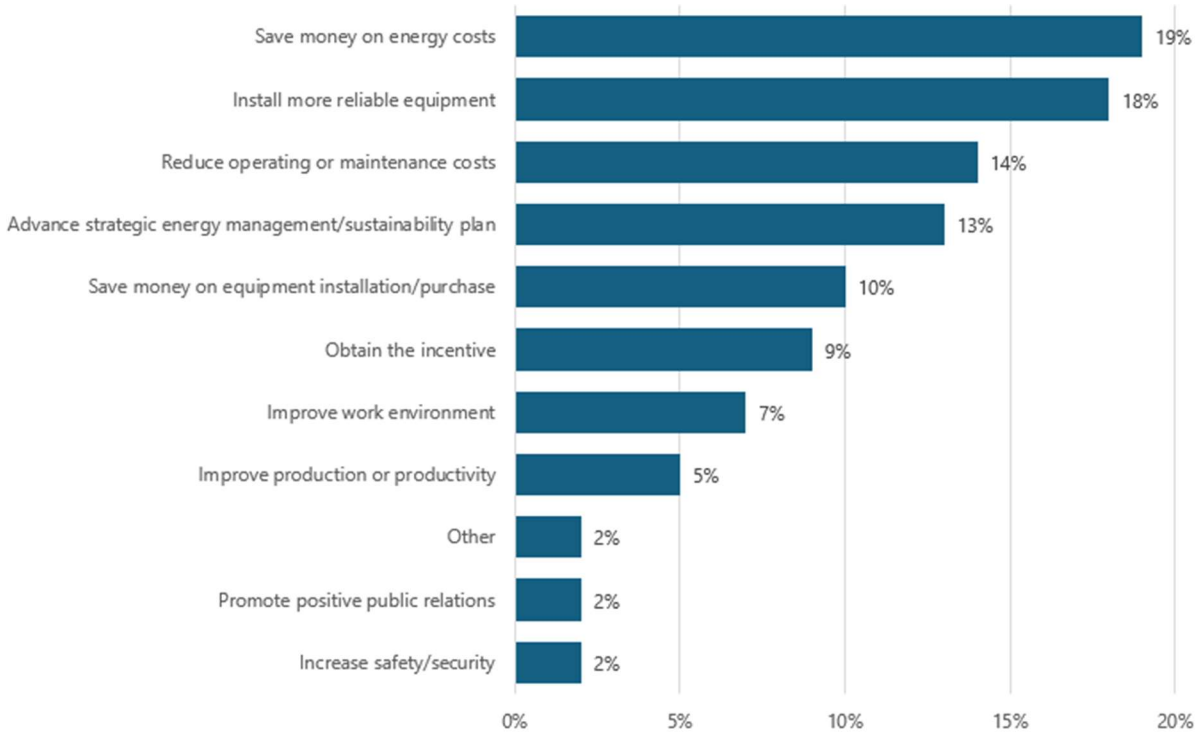
Figure 16 shows participants reported that RI Energy staff served as the most common origin source for their projects (15%), along with part of a facility renovation or expansion (15%); or broken, failed, or aging equipment (15%).

Figure 16. Sources of Origin for Energy-Efficiency Projects



Cadeo asked participants why they chose to undertake their projects. Respondents most commonly answered saving money on energy costs (19%), followed by installing more reliable equipment (18%) and reducing operating or maintenance costs (14%), as shown in Figure 17. When combining responses related to incentives and saving money on purchasing and installing equipment, over half (52%) of respondents indicated these as reasons for undertaking their projects. This indicates financial assistance served a primary driver of program participation.

Figure 17. Participant Reasons for Engaging RI Energy



Project Implementation Partner Perspectives

Project implementation partners corroborated the necessity of financial assistance. All interviewed partners indicated that incentives were a critical part of customer recruitment, specifically by reducing payback periods for energy-efficient equipment.

> ***"Most custom projects won't move forward until the customer finds out the rebate amount." – Project Implementation Partner***

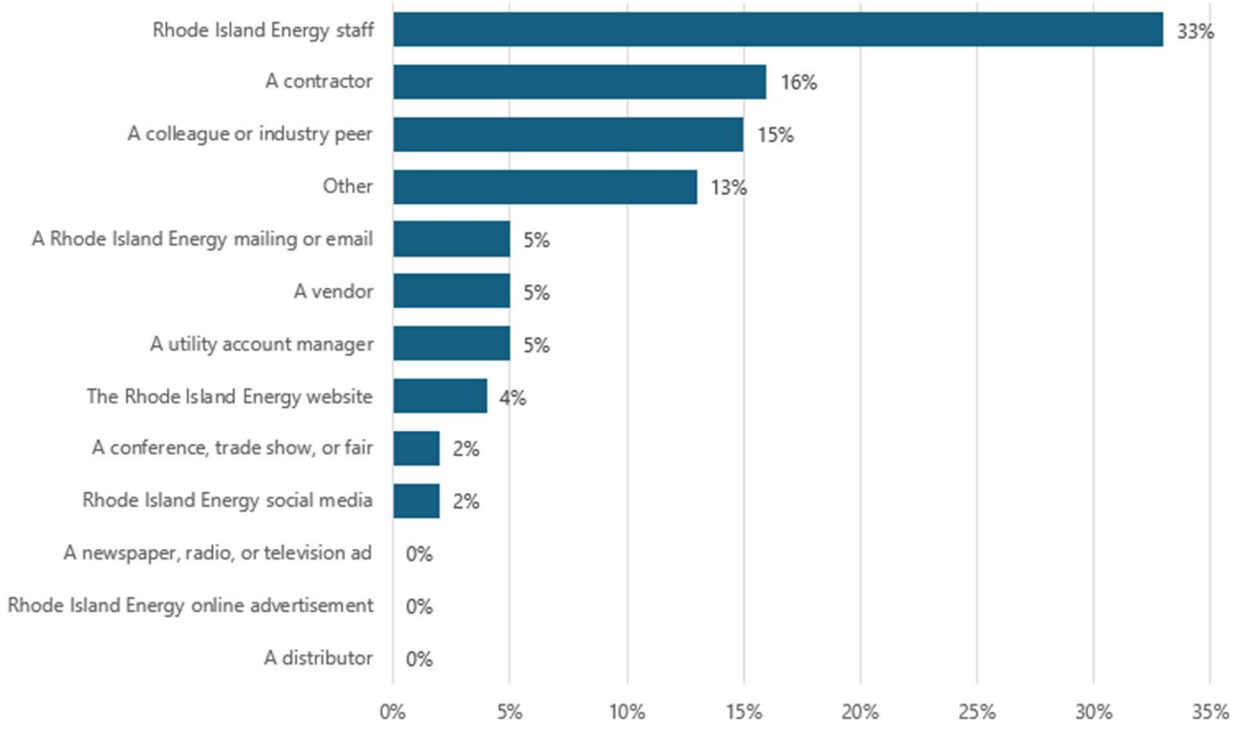
Program Awareness

As shown in Figure 18, most respondents reported learning about financial incentives or technical assistance from RI Energy staff (33%), followed by contractors (16%) or colleagues (15%). This demonstrates the importance of contractors and industry colleagues in regard to dispersing program information outside of RI Energy.

RI Energy marketing collateral had little effect on participation. Only two participants selected the RI Energy website, one participant selected social media, and participants did not select online or traditional media ads at all. The connection between this result and RI Energy staff serving as the most common channel for customers to learn about incentives suggests that RI Energy staff effectively draw in participation, primarily through direct contact with customers.

This finding agrees with considerable account representative involvement for large C&I customers.

Figure 18. How Participants Learned About the Program

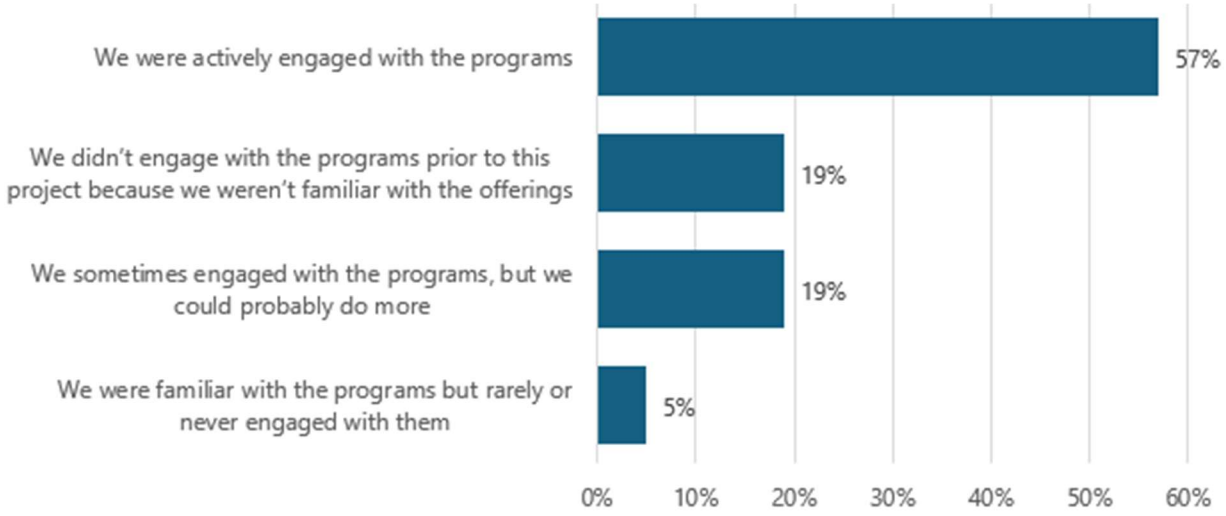


Prior Engagement with RI Energy

Cadeo asked participants to describe their engagement level with RI Energy and energy-efficiency programs prior to their custom project. As shown in Figure 19, over half (57%) of respondents stated they actively engaged with RI Energy programs prior to participating in the Large C&I Retrofit Custom Pathway program. These findings corroborate information from RI Energy program staff and suggest customers that have participated in RI Energy programs are more likely to participate again.

However, 19% of respondents said they did not engage with RI Energy programs prior to their engagement with the Large C&I Retrofit Custom Pathway program because they were not familiar with the offerings. RI Energy staff actively engaged with large C&I customers and effectively channeled customers into the program. According to RI Energy program staff, they undertook a significant outreach effort for large C&I customers within the last couple of years. As such, they have completed sufficient marketing, and most large C&I customers should now know about the programs. The marketing effort's success was validated by participants that reported RI Energy as the most common source for awareness of the program.

Figure 19. Prior Engagement with RI Energy



Project Implementation Partner Perspectives

Project implementation partners proved valuable in expanding customer knowledge and awareness of RI Energy programs. When asked how program awareness could be increased, partners indicated early discussions and presentations about the programs had the most impact as some customers remained unaware of program offerings or, despite familiarity, struggled to understand more technical program aspects. Having contractors or account managers on-site to explain site-specific opportunities could help alleviate misunderstandings or reluctance that customers may have about the program while increasing overall program knowledge.

Decision Making

The team asked participants to provide insights into how their organizations made decisions to invest in energy-efficiency equipment and improvements.[16]

Cadeo asked participants how often they tried to select an efficient option when purchasing energy-consuming equipment. All respondents reported they tried to choose efficient equipment "Always" (54%) or "Most of the time" (46%).

Table 23 shows the primary criteria that participants' organizations considered when deciding on investments to make related to energy-consuming equipment. Respondents could select more than one option. "Cost or price" (25 responses), "Improving equipment or facility quality" (22 responses), and "Longer useful life or lower maintenance costs" (18 responses) were the primary drivers of the decision-making process. Notably, "Environmental initiative or sustainability" (12 responses) was also relatively common. Along with "Improving equipment or facility quality," these responses suggested participants were also driven by non-financial criteria and that RI Energy can perhaps emphasize this in marketing and outreach efforts.

[16] When asked the role survey respondents played in the project, there were slight differences between web and phone respondents due to the qualitative nature of data collection via phone. Thirty percent of web respondents stated they were involved in all steps: making decisions about whether to invest in the project, making decisions about the installed equipment, assisting in technical aspects of project, managing the building or facility, and managing administrative and/or financial aspects of the project. Phone respondents had more qualitative responses with 33% saying they were a project manager or director.

Table 23. Participant Considerations When Making Energy-Efficiency Investments

Criteria Category	Number of Responses
Cost or price	25
Improving equipment or facility quality	22
Longer useful life or lower maintenance costs	18
Payback period	16
Available financial incentives	14
Magnitude of energy savings	13
Magnitude of financial savings	12
Environmental initiative or sustainability, such as reduced carbon footprint	12
Improved control over energy use	12
Equipment installation lead time	6
Leading by example	3
Other	3
Labor needs associated with the equipment	2

Cadeo asked participants about the importance level of different actors in their organization's regarding decisions about equipment replacements and upgrades. Using a scale of 1 to 5, where 1 is "not at all important" and 5 is "very important," respondents rated four actors: designers or architects; contractors or installers; vendors or retailers; and utility staff (e.g., account representatives). Respondents could also provide qualitative data via an open-ended textbox. The evaluation team re-coded the qualitative responses into previous categories when applicable. Remaining answers established an "Other" category. The ten "Other" responses included actors such as project or facilities managers, clients, and financing staff, with 50% of actors internal and 50% external. The highest-rated actors were designers or architects (4.3),

Who are the "Others?"

For write-in responses that could not be re-coded in the survey, Cadeo created the "Other" category. The ten "Other" responses included actors such as project or facilities managers, clients, and financing staff, with 50% of the actors being internal and 50% being external.

Others (4.3), and contractors or installers (4.2), as shown in Table 24. Notably, although participants scored utility staff highly for their importance in raising program awareness (Figure 18), participants scored utility staff relatively low regarding their importance in participants' decisions to invest in energy-efficiency improvements.

Table 24. Importance of Market Actors When Marking Energy-Efficiency Investments

Actor	Score (Max of 5)
Designers or architects	4.3
Other	4.3
Contractors or installers	4.2
Vendors or retailers	3.9
Utility staff (e.g., account representative)	3.8

The team asked participants what constraints their organizations faced when deciding which energy-related projects to pursue. Respondents could select as many options as they felt were relevant. As shown in Table 25, "Budget" (24) was the most common constraint participants faced. Relatedly, "Other priorities for capital spending" (15) and "Lack of financing" (12) were the next most common. These results emphasize the importance of the program's financial support for participants.

Table 25. Participant Constraints When Marking Energy-Efficiency Investments

Constraints	Number of Responses
Budget	24
Other priorities for capital spending	15
Lack of financing	12
Payback period requirements	11
Lack of financial incentives	6
Time to dedicate to the project	6
Lead time for equipment delivery or installation	6
Internal approval lead time	4
Concerns with operations or production	4
Staffing	3
Reluctance to replace working equipment	3
Operational constraints	3
Procurement	3
Other	2
Expertise	1

Project Comprehensiveness

Project Scoping Studies

As part of the program processes, participants often had an initial scoping study done which detailed all energy-efficiency measures aligning with their facilities. Cadeo asked participants about these scoping studies. A little over half (51%) of the 39 respondents recalled receiving a scoping study. Eighteen percent said they did not receive a scoping study, while 31% stated they did not remember. Of those who recalled receiving a scoping study, 75% stated their organization implemented all measures, 20% stated they did not implement all measures, and 5% stated they did not remember. Since 75% of participants that received a scoping study implemented all recommended measures, it is important to encourage as many participants as possible to have a scoping study completed for their facilities.

Those receiving a scoping study but did not implementing all measures were asked why their organization chose not to do so. Respondents were able to answer via text box, allowing for qualitative answers. All four respondents cited financial reasons, including insufficient cost-effectiveness and insufficient financial support. To address the financial barrier, participants recommended not only increased incentives, but also providing on-bill financing and increasing incentives for bundling measures.

Suggestion:

To address financial barriers facing customers when investing in energy-efficiency equipment, we recommend increasing awareness of on-bill financing or offering enhanced incentives for bundling multiple measures or end uses.

Increasing Project Scopes

Cadeo asked participants whether RI Energy staff encouraged them to expand their projects' scopes by including more measures or end uses. Of 12 respondents, 75% said "no" and the remainder said "yes." Only one survey respondent opted to expand the project scope.

Cadeo asked participants what RI Energy could do to encourage C&I customers to complete more energy-efficiency projects. Respondents' answers were collected via an open-ended textbox, which allowed for the collection of qualitative data. The evaluation team organized these qualitative responses into the categories shown in Table 26.

> ***"Our interaction with [RI-Energy] was extremely helpful in understanding what projects we had qualified for utility incentives. I look forward to future conversations with [RI Energy staff]." – Program Participant***

Table 26. How RI Energy Can Encourage Energy-Efficiency Projects

Category	% of Responses	Example Responses*
Program/Incentives	31%	• Keep up what they're doing. • As long as they can offer the incentive, it is a no brainer... they helped us finance the project.
Other	23%	• Less paperwork. • Be available when we ask for assistance.
Marketing	14%	• Make success stories more evident. • Make the programs more visible by promoting them to companies.
Recommendations	11%	• Meet with someone who can point him in direction of what projects can be done - from RI Energy specifically.
Rebates	11%	• Offer rebates. • Bigger rebates.
Site Visit/Assessments	9%	• I would not be opposed to having a site visit. I would prefer a full building energy efficient assessment. • Audits and reports on what you can do and should do.

* Responses are not necessarily verbatim.

Participant Future Plans

Over 80% of respondents indicated they had plans to make energy-efficiency improvements at one of their facilities within the next two years. All but one respondent, regardless of their intentions to make energy-efficiency improvements, indicated they would engage RI Energy in those future plans. The one outlier did not indicate they would *not* engage RI Energy but rather responded with "I'm not sure."

Additionally, Cadeo asked what RI Energy could do to assist their future energy needs. Responses were open-ended. Table 27 summarizes responses, organized into the following categories: continue the program/incentives (38%); marketing (14%); increase funding/lower rates (14%); other (14%); communication (10%); and equipment/program recommendations (10%).

> ***"Keep doing what you have been doing. We have confidence in your guidance." – Program Participant***

Table 27. How RI Energy Can Assist Future Energy Needs

Category	% of Responses	Description of Category	Example Responses*
Continue program/incentives	38%	Participant expressed praise for the program or wanted the program/incentives to continue.	• Continue to offer technical support and financial incentives. • Keep doing what you have been doing. We have confidence in your guidance.
Marketing	14%	Participant said marketing efforts should be increased or the website should be more accessible.	• We would like to be engaged in new products and service offerings. • We would appreciate a better, more accessible web site with information about programs.
Increase funding/lower rates	14%	Participant stated funding should be increased.	• An increase of funding is always a good thing. • Lower my bills.
Other	14%	Catch-all category for responses that did not fit into others.	• I would like a full building assessment by RI Energy instead of having to pay all at once to a third party. • I would prefer an option to pay for installed equipment over time. • We wish the scoping study to be valid for at least 10 years.

Category	% of Responses	Description of Category	Example Responses*
Communication	10%	Participant discussed finding RI Energy staff.	• It's a lot of work to find a RI Energy contact. Maybe an email with contact information about our rooftop project would be beneficial. • A contact to directly work with RI Energy.
Equipment/program recommendations	10%	Participant expressed desire for recommendations from RI Energy about equipment or program recommendations.	• Consult on proposed energy-efficiency measures as specified by third-party design engineers on new building projects. • Recommendations when I am about to purchase new equipment. • Tell me what I can do to qualify for new incentives and what those programs are.

* Responses are not necessarily verbatim.

Project Implementation Partner Perspectives

All project implementation partners interviewed said that they did not utilize marketing tools from RI Energy. One partner noted they received emails that served as project reminders, which helped to keep projects in motion.

Interviewed project implementation partners were satisfied with their communications with RI Energy staff. One partner stated they were happy with their communications, reporting that some rebate processing delays were the only negatives. The partner tied these delays to a software change at RI Energy occurring in 2024. The software did not seem to affect current rebate processing as the partner referred to it as a temporary "glitch."

Project implementation partners noted the longer timeline associated with custom projects, and emphasized how a streamlined process could help avoid delays and keep customers engaged. When asked about streamlining the process or providing overall project improvements, two of three partners sought an increase in compressor horsepower covered by incentives, specifically going up to 100-horsepower compressors. Custom air compressor projects could include compressors above 100 horsepower. We believe this statement addresses prescriptive measures, which do not include compressors of that size.

Peer Program Insights

This section includes a synthesis of feedback from RI Energy staff, program participants, and project implementation partners as well as reviews of peer programs. These recommendations are not necessarily intended as those made by the evaluation team, but rather as informational

recommendations and suggestions made by those engaging with the RI Energy program and peer program administrators who implement their own large C&I retrofit programs.

Project Development

RI Energy relies on account managers to support and generate participation in the program.[17] Several peer programs used this model. Others included using engineers, sales staff, or energy advisors as the primary point of contact. At RI Energy, account managers fill these roles. Regardless of the model, the common element was a single contact point at the utility for the customer and project implementation partners. As a best practice, a single point of contact offers direct experience and subject matter expertise with specific C&I segments (e.g., industrial facilities, lodging facilities) and technologies associated with those segments. Due to the nature of large C&I customers, availability of subject matter expertise is a common trait among successful programs that helps develop projects and increases trust between the program its participants.

Energy Savings and Incentive Estimations

In Massachusetts, program administrators use a "Tech Check," a checklist-based process to review and achieve consensus on estimated energy savings, including baseline determination and incentive estimates.[18] Through this process, the program administrators collectively manage risks associated with large C&I projects by ensuring staff align with project goals and expected outcomes early in the process.

Additionally, some peer programs implement tools and calculators that facilitate and expedite energy savings estimates for frequently installed measures and measures with low risks and uncertainty. RI Energy does this for some projects, using their Custom Express energy savings calculation tools.

Some programs, such as Con Edison's Large C&I Program, rely on extensive M&V during project implementation. However, the program and others like it set various rigor levels and requirements depending on the size and uncertainty of each project. Some programs allow customers to forego M&V altogether for projects below specified energy savings and incentive thresholds.

The Focus on Energy program in Wisconsin allows provisional project preapprovals for certain projects. Through this process, customers provide information about the project so program administrators can verify eligibility before the projects go through the full process.

[17] RI Energy also uses third-party contractors to develop custom industrial projects.

[18] RI Energy uses Tech Check in their Industrial energy-efficiency program to determine baselines and the savings calculation methodology early in the project process. When using Tech Check, RI Energy still completes a technical review later in the process.

Recommendation 3:
Consider utilizing alternatives to on-site post-installation verification methods.

RI Energy staff indicated that on-site post-installation verification can be expensive and all projects are verified prior to incentive payouts. Although this practice remained critical to managing risk and supporting program growth, some peer programs offered varying levels of post-installation verification rigor, such as virtual verification (e.g., using smartphones or tablets with back-facing cameras to virtually walk through customer facilities) or allowing certain projects (based on energy savings thresholds, incentive amounts, etc.) to bypass onsite post-installation verification. Another opportunity would be to offer alternatives to onsite post-installation verification to customers in good standing, repeat program participants, or project implementation partners in good standing.

Communication and Project Coordination

Surveyed participants and project implementation partners reported that RI Energy excels at communication and engagement throughout project processes. Peer programs also indicated the importance of transparency and open discussions with customers, emphasizing not all customers have the same understanding of energy efficiency. Program administrators suggested staff should be mindful of individual differences and tailor communications accordingly.

Several peer programs utilize online tools and forums to support knowledge transfer between program staff, customers, and project implementation partners. For example, Con Edison developed an "Incentive Navigator" that enables project implementation partners to submit project documentation electronically, track project status, and schedule M&V visits.

Program Adaptations

As market saturation of high-efficiency lighting increases and local energy codes become more progressive, C&I programs generally have seen a reduction in the number and size of lighting projects. To develop the next generation of C&I custom retrofit projects, program administrators have developed and implemented several notable solutions:

- Scoping audits for new customers and existing customers who have not previously received a scoping audit or whose previous scoping audit became outdated.
- Feasibility studies and custom incentives for renewable energy projects.[19]
- Square-footage based incentives for retro-commissioning projects.
- Complimentary reviews and pilot projects for emergent technologies.

[19] Feasibility studies and custom incentives for renewable energy projects are conducted in other jurisdictions. Implementing similar strategies at RI Energy may be challenging at this time because of current policies regarding renewable energy projects.

Appendix A. Evaluation Scope of Work

RI Energy - C&I Custom Approach R

Appendix B. Program Budgets and Activity

Table 28. Planning Program Budget Summary, Electric ($000)[20]

Program Year	Planning and Admin.	Marketing	Incentive to Customers	Sales, Technical Assistance, and Training	Evaluation	Total
2021	$885.7	$266.0	$24,825.0	$4,746.2	$842.4	$31,565.3
2022	$732.9	$239.5	$18,529.5	$4,814.2	$816.3	$25,132.4
2023	$764.6	$159.8	$17,845.3	$4,908.1	$775.5	$24,453.3

Table 29. Planning Program Budget Summary, Natural Gas ($000)[21]

Program Year	Planning and Admin.	Marketing	Incentive to Customers	Sales, Technical Assistance, and Training	Evaluation	Total
2021	$245.1	$315.8	$2,988.8	$1,437.0	$182.5	$5,169.2
2022	$206.4	$261.9	$2,543.0	$1,535.2	$149.8	$4,696.3
2023	$227.9	$172.8	$2,272.5	$1,761.7	$209.2	$4,644.1

[20] Data from RI Energy Annual Energy Efficiency Program Plans.
[21] Data from RI Energy Annual Energy Efficiency Program Plans.

Appendix C. Program Staff Interview Guide

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Custom Approach P

Appendix D. Project Implementation Partner Interview Guide

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Appendix E. Peer Program Interview Guide

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Appendix F. Participant Survey Guide

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Participant Survey W

Appendix G. Survey Respondent Firmographics

Figure 20. What is the approximate total floor area occupied by your organization at the project location in square feet? (n=36)

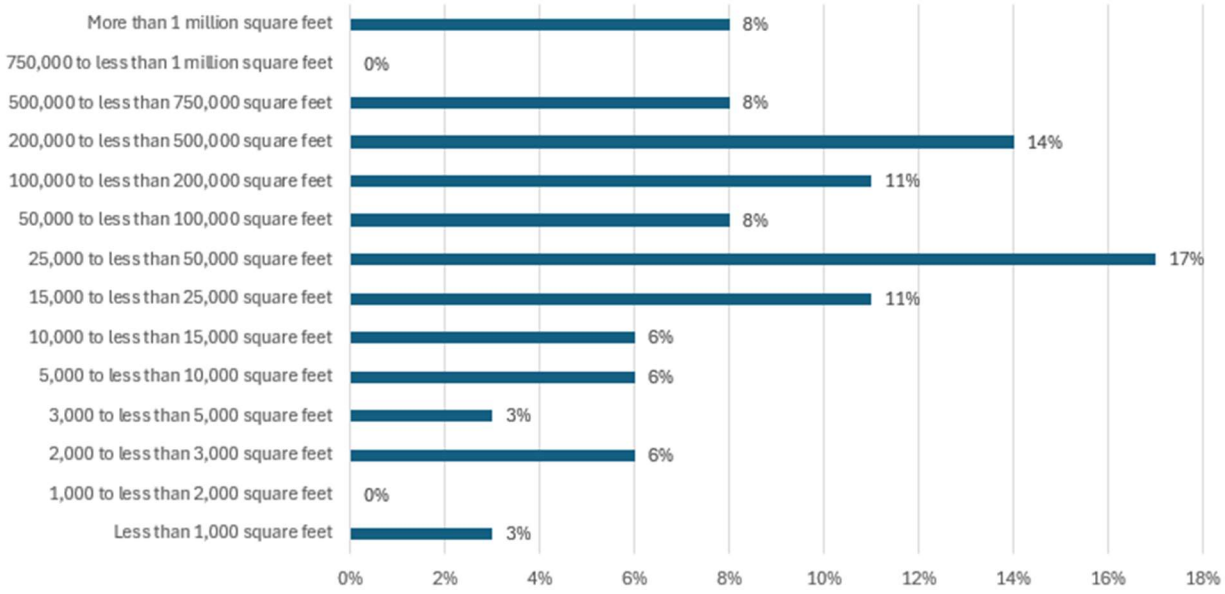

Figure 21. Approximately how many full- and part-time employees does your organization employ at the project location? (n=38)

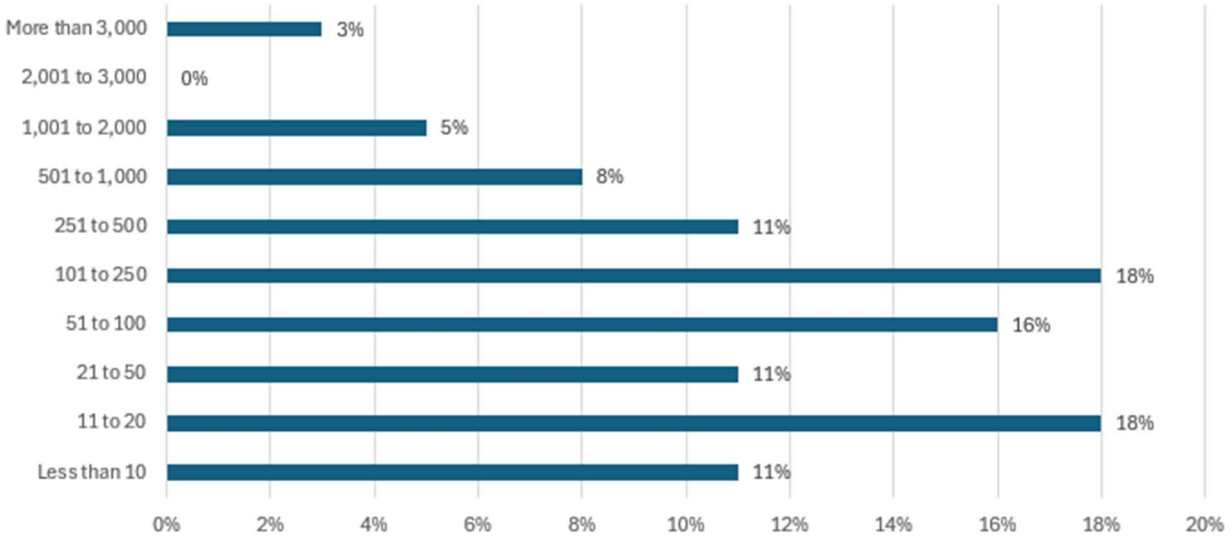

Figure 22. Which of the following sectors does your organization serve?
(35 responses from 26 respondents; participants could answer more than one sector)